Lifelong Learning: Whose Responsibility and What is Your Contribution?

Refereed Papers from the 3rd International

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Yeppoon, Central Queensland, Australia

13 – 16 June 2004

Hosted by Central Queensland University

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PREFACE

This is the third in the series of biennial, international, lifelong–learning conferences to be hosted by Central Queensland University. On the basis of the papers published in these proceedings, the conference continues to grow in significance: the number of refereed papers appearing in the proceedings has increased from 47 in 2000, to 66 in 2004, and the range of issues and concerns reflected in the papers has broadened accordingly.

The theme selected for this third conference was deliberatively provocative: "Lifelong learning: whose responsibility and what is your contribution?" This question was intended to highlight the multiple and competing discourses attending lifelong learning in the early 21st century. These discourses might be mapped onto a continuum, with the production of a casualised and compliant workforce to meet the needs of late capitalism at one end, and with enacting a shared commitment to social transformation at the other end; with all points between. It is imperative that these discourses continue during and beyond the conference if the intention of the theme – to stimulate reflection and action – is to be realised. It is also important to recognise and value the diversity of responses to the theme. In this spirit, we invite all conference delegates and readers to think about their own and others' contributions to lifelong learning, and to express their understandings and views of those contributions throughout the conference and beyond.

As in the past, this conference welcomes delegates from across the nation and from around the world. Within these proceedings are papers written by people from five Australian states and territories and from seven other countries. This broad coverage is crucial in helping the conferences to achieve their principal aim: to generate the new understandings, strategies, and commitments that can arise from focused dialogue in a congenial environment. While some aspects of globalization may encourage standardisation and homogenisation, this is all the more reason to be attentive to the differences and the heterogeneity associated with contemporary manifestations of lifelong learning.

Some of these wide-ranging perceptions are represented in the presentations of the five keynote speakers. Their topics are varied, as are their origins (one from Queensland, two from New South Wales, one from the United States, and one from the Republic of Ireland). Ralph Catts reflects on the two previous conferences with a view to suggesting likely future themes; Francesca Beddie traces some of the elements of collective responsibility underpinning learning communities; Christine Bruce interrogates information literacy as a potential catalyst for educational change; Máirín Kenny likens the debates around lifelong learning in the Republic of Ireland and the European Union to Auden's poem "Atlantis"; and Hunter Boylan conducts an historical analysis of efforts to respond to sociocultural diversity in the United States over the past forty years.

An organizational innovation for the third conference has been the self-selection of interested authors and presenters into symposia, which are more finely focused discussions around particular aspects of lifelong learning and the conference theme – these aspects being chosen by the symposia chairpersons and participants. Of the 66 papers in these proceedings, 30 are linked with 11 symposia, ranging from the relevance of information literacy and gender issues in the workplace, to spirituality and problem-based learning; and from pre-undergraduate university programs, to national convergences and divergences in lifelong learning. We hope that the symposia will provide a platform for ongoing communication and, perhaps, collaboration between delegates. For example, the prospect of more specialised publications arising from the symposia, which both complement and extend the coverage of these proceedings, would be a worthwhile outcome.

As might be expected, the range of topics and groups represented in these proceedings is vast. Stakeholders include learners, educators, librarians, designers, administrative and technical support staff, employers and employees, government officials, and policy makers. The educational sectors covered include schooling, vocational education and training, university education, and informal learning. Professional disciplines too are well covered, including business, education, engineering, and nursing. Sociocultural issues are also well to the fore, and include politics and ethics, marginalisation and transformation, and materiality and spirituality – all the enduringly significant themes of human history and society. The conference theme alerts us all to the need for these multiple stakeholders to work collaboratively in these areas in order to strengthen and empower individuals and groups – at all levels and in all places.

As with the previous conferences, the papers published in these proceedings have undergone a systematic process of "double-blind" refereeing (i.e., the names of authors and referees are withheld from one another), rewriting as required, and copyediting. A number of papers submitted for refereeing did not fulfil the rigorous standards set by the referees and the editors; in some cases the authors will present these non-refereed papers at the conference and will, hopefully, receive useful feedback from fellow participants.

Thanks are due to several individuals and groups without whom these proceedings would not have been possible. We acknowledge in particular Kelli Graham's indispensable administrative support; Colin Macpherson's professional copyediting in addition to his role as co-editor; Megan Hoodcamp's typesetting skills; the referees' commitment to quality and, in many cases, to meeting indecently close deadlines; and most of all, the authors for their willingness to submit their papers for refereeing and publication.

In closing, we trust that these proceedings of the 3rd International Lifelong Learning Conference will inform, question, challenge, and present new strategies and perspectives for and on lifelong learning. We hope also that the papers appearing here will help to generate ongoing dialogue and debate about lifelong learning: what it is, whose responsibility it is, and how our respective and shared contributions to fulfilling that responsibility can be mapped, valued, and expanded.

Editors:

Patrick Alan Danaher
Colin Macpherson
Fons Nouwens
Debbie Orr

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LEARNING COMMUNITIES: A CATALYST FOR COLLECTIVE RESPONSIBILITY

Francesca Beddie
Private Consultant

INTRODUCTION

This conference asks us to consider the question, who should be responsible for lifelong learning? It is a question I wish we did not have to ask. In an intelligent country, one would expect the answer to be self-evident and unnecessary. Why? Because the very process of lifelong learning would make it obsolete. The learning itself would trigger the assumption of responsibility. But we do have to ask the question. I will ponder why and then consider some ways of moving closer to a learning society.

First some definitions.

I've adopted the Campaign for Learning's definition of lifelong learning because it determinedly avoids notions of education and training. Rather, it stresses the intangible benefits of learning: deepening values, the capacity to reflect, and a love of learning.

What is meant by an intelligent country? Ian Chubb, Vice-Chancellor of the Australian National University, told the National Press Club in 2001 what he thought its features were:

> … prosperous, civilized, culturally rich and socially just. It is one that is wisely governed and led; and one that will not let the circumstance of birth be a major obstacle to personal advancement because it will be understood that progress will come from the development and application of the talents of all the citizens. It is a nation with a focus on quality, and it will encourage and support high aspirations. (p. 2)

That is the country I thought I was representing during my years as an Australian diplomat serving in Indonesia, Russia, and Germany. A country which, because it was intelligent, "punched above its weight" as the then Foreign Minister, Gareth Evans, was fond of saying.

Where has that Australia gone? We are now the country that locks children behind barbed wire; leaves Australian citizens in solitary confinement on Cuba; passes laws that defy habeas corpus; votes for the retention of the monarchy, against the stated wishes of the majority; accumulates its profits into vast household debt; idolises sporting achievement; watches reality TV; and loves radio shock jocks. That hardly adds up to a good international citizen able to enrich its own people and those around it.

Ian Chubb goes on:

> The intelligent country will generate new discoveries, develop its people and support all fields of learning. Some of these fields will, of course, give rise to invention, innovation and economic wealth. Other fields will lead to yet better understanding of civilizations past and the generation of new literary, artistic and spiritual wealth. Together, they lead to intellectual wealth. (p. 2)

This idea of learning is the one I embraced when I entered the labyrinth of the Australian education sector in 2002, the year I was appointed executive director of Adult Learning Australia. I saw my mission as, to foster a culture of learning in Australia which would be the mainstay for a vibrant democracy, an innovative economy, and a tolerant society. Adult Learning Australia continues to strive for that mission. I am seeking new ways to advance that cause but often do so with a heavy heart. For it is an almighty task to fight the mediocrity which is now pervasive in the Australian education sector.

Again, I agree with Ian Chubb. Later in his speech, concerned primarily with universities and the higher education review, he said,

> We are slowly being made average. All Australians will suffer if that continues. Enrolling an average number of students into universities of average quality, supported by government at average levels, would be an appalling outcome [from the review]. Being in the middle of

> the OECD expenditure tables on education, on research and on development, on information and communications output, is simply to fail. (p. 2)

And that is where we are. Doing a bit better than the old "mother country" – though the United Kingdom is thinking much more creatively about adult education than is Australia – but not as well as our great ally, "the US of A." And not nearly as well as Sweden. That's a sign of the times. A few years ago Australia was often closely identified with the Scandinavian countries with whom we shared a belief in social democracy, a principled international order, and so on. We have parted ways.

Nevertheless, we are not doing badly on expenditure. The latest Australian Bureau of Statistics (ABS) figures (December 2002) say that AUD40 billion per year is spent on education and training in Australia. Of this, government spends AUD29.6 billion (74 percent) and the private sector AUD10.3 billion (26 percent).

On another measure – learning for work – we do well. Australia has the fourth largest coverage of workforce trainees in the world (Australian National Training Authority [ANTA], 2001-2002, p.8). 1997 figures show that this equates to 72.4 percent of the working-age population participating in lifelong learning (primarily in work-related training). Unfortunately, however, the healthy numbers participating in vocational training are not embedded in a culture which values learning for its own sake, for its contribution to the maintenance of our civilisation and the proper functioning of our democracy, as well as to the nation's economic performance. We live in a country whose prime minister cherishes cricket as a symbol of the nation's achievement. Until we translate the rigorous learning and coaching involved in elite sport into other endeavours, Australia's overall educational levels will remain mediocre. We will have an elite of high achievers, with many others coping, but with significant numbers not coping. And, as Ian Chubb said, being average in today's world threatens failure.

On a much more basic measure, literacy and numeracy, the OECD (Organisation for Economic Cooperation and Development) ranks Australia poorly, with around 45 percent of Australian adults not having sufficient levels of literacy required by the everyday demands of life and work in a complex, advanced society (OECD, 2002b). Dissect that figure further and you find, alarmingly, that one in five Australian adults is not functionally literate. That means they would experience considerable difficulties in using many of the texts and documents printed in English that they encounter in daily life. A further 28 percent, those at Level 2, the second-lowest of the five levels of proficiency, would also experience some difficulties. About one in three people are at Level 3, with skills that enable them to cope with many of the literacy demands of daily life and work, but not always at a high level of proficiency. Only one in six – about 16 percent of Australians – have good to very good literacy skills. That study was done in 1996. It is due to be undertaken again in the near future. Let's hope the results are improved.

Recently, the OECD (2002b) judged that we are making headway in literacy among our fifteen-year olds, thanks to some concerted national leadership. But don't get too excited. The PISA test, which determines literacy levels, does so without regard to spelling and grammar!

No wonder then that the next generation is having some problems. Australia has also stalled on retention rates for school leavers. Each year, one in three teenagers leaves school without completing Year 12 education. This is a high non-completion rate compared with most OECD countries. Although some students later complete a Year 12 equivalent qualification, one in five young Australians never do. Unemployment is also high among young people. The fact that many young people do not finish school and don't find jobs is not just their problem. It affects the county's bottom line and creates unhealthy social divisions in society.

The benefits of learning

The nation must rally to do something about this. For the evidence – collected by the OECD and organizations like the UK Centre for the Wider Benefits of Learning – shows that education contributes to social capital and that this in turn has many positive social, as well as direct, economic impacts. For example, an increase in schooling achievements,

- raises the schooling received by one's children,

- improves one's own health status and that of one's family members,
- raises the efficiency of one's consumer choices,
- reduces crime,
- generally increases social interactions and contributions to the community,
- increases the likelihood of pursuing further learning throughout life.

We know this from our own experience. We also know it from the statistics about income, health status, and about where the 1.3 million Australians participating in adult-education courses are drawn: people with university degrees are twice as likely to participate in adult education and training as people with a high-school qualification.

The numbers game has become an evil necessity for those seeking funding to quantify the rates of return on the education dollar. But learning should not be seen as a commodity in this way. It should not have to translate into higher incomes or more taxes or "bums on seats" to be valued by the state and the consumer. Nor, might I add, should they be consumers – they are learners, people who often do not yet know what choices are on offer or what their preferences might be.

I'm not an economist; rather, I probably fit into the ranks of those Australians with inadequate numeracy skills. But as Executive Director of Adult Learning Australia, I became adept at arguing the case for learning by using terms such as "social capital", "return on investment", "concrete outcomes", and "skills development". What I knew in my heart, though, was that learning was important because it was the key to maintaining a civilized world. To quote Alistair Rylatt (2004), "learning is at the core of life. It is the means and ends to everything we do. It helps provide choice, well being and meaning to our lives."

In speaking like this, I do not want to be thought of as a wishy-washy idealist. I fully recognise the constraints that exist for funding agencies. That's not to ignore the areas where there are critical shortages of money – which ought to be supplied by the state. My argument is that we can do much better with the current resources by thinking of learning in a new way as a key to the sustainability of 21st century communities and more immediately, as the chain which can link various funding buckets so that money is allocated in accordance with local need rather than abstract policy or program priorities.

It is commonsense, and acknowledged from the top to the bottom, that we must find ways,

- to better use existing resources: financial, physical, and human;
- to foster an appreciation of the importance of learning for peace, democracy, and prosperity which translates into the diversion of funds from other pursuits (dare I say fridge magnet campaigns and defence spending);
- to encourage constructive partnerships which bring government, enterprises, and individuals together to act, not just to consult.

The other element in acting differently is to put the rhetoric about learner-centred approaches into action. That means a switch from the focus on institutions to a realisation of the importance and – yes, cost-effectiveness – of self-directed learning. It must not, however, mean a shying away from a strict adherence to quality and to merit-based principles, just because they will be difficult to measure in a more dispersed learning environment.

It also means reviewing the hierarchy of post-compulsory education. Is the trend towards mass university education really the best way forward? Or should universities concentrate more on fostering a culture of learning and on research rather than competing to become vocational training institutes? It is not necessarily what they do best – as is shown by the flow of university graduates into VET (Vocational Education and Training). And in the process of trying to offer job-related training and to earn the dollars needed to stay afloat, they are in danger of heading towards the mediocre. Worse still, from my point of view, they are diluting the appetite for learning among students. Students – unless they hail from the ranks of the really wealthy, as we must fear many will, again – have to earn money to pay the fees or at least their living expenses (expensive in our materialist world), and they have to think about the jobs they will secure to pay back the debts. Not much time anymore for an exploration of the "wrong" aisle of bookshelves at the library, because something seems interesting. Not even much time to get involved in student politics to lobby against higher fees, or in the film club or the hockey team. Such is life in the era of affluenza.

In my idea of a learning society, undergraduates would be those wishing to complete a general education (at any stage of their lives) and perhaps to begin to find a specialization which might be developed at the post-graduate level, in a job or in further formal training.

At the same time, no-one would consider that the VET system merely offered a second-class option for post-school learning. It would offer high-quality training aimed at vocational outcomes for an increasingly highly-skilled workforce.

For students in both universities and the VET system, the learning experience would impart the skills and the desire for learning throughout life.

And having created that demand for lifelong learning, we would embrace a broad definition of learning which recognises the learning that takes place in teaching institutions (schools, technical and further education [TAFE] colleges, universities, private courses, evening colleges) but also in libraries, museums, clubs, and so on, as well as formally and informally in the workplace. Also important would be acknowledgement of the life-wide learning (formal and informal) which all adults undertake, particularly as they move through career and life transitions.

Such a broad definition, one not informed by the universal experience of a school building and exam room, would also serve in one of our most crucial tasks – attracting back those who think they have done with learning.

Learning communities

For these people in particular – not just the disadvantaged in society but also many people involved in small businesses, and significant numbers of older people – living in a learning community might be a trigger to re-engagement. Peter Kearns (2004), who has done extensive work on learning communities in Australia, offers the following definition.

> A learning community is any group of people, whether linked by geography or by some other shared interest, which addresses the learning needs of its members through pro-active partnerships. It explicitly uses learning as a way of promoting social cohesion, regeneration and economic development. (p. 18)

That is a useful start but I caution against being too prescriptive when describing, defining, or badging a learning community. Often the community will not carry any label or be aware that it does so (as is the case in Glasgow, a vibrant learning city whose residents don't know it), or will prefer some other name. Creative communities are quite voguish at present.

Where the label is useful is when people are making a conscious effort to identify and use learning as the common element in community-wide endeavours to develop skills, expand business, and build social cohesion. They usually do so when faced with a crisis – the drift of young people to the cities; the closure of an industry; heightened levels of crime; funding crises. For those dealing with these problems, the notion of collaboration around learning offers a chance to break down the traditional power relations and funding silos which so often impede productive talk and action.

The most successful learning communities are organic – they arise out of local energy and in response to local concerns. That is not, however, an argument to leave them be to make their own way in the world. Most will need support once there is agreement to take an initiative forward. Local government should be in a good position to harness the enthusiasm. But this sector is usually strapped for funds and, for most councils, learning is not…yet… seen as core business.

Moreover, there is a strong argument for all three tiers of government in Australia to contribute to building capacity in local communities so that these communities are better able to articulate their needs and identify workable solutions to problems. Adult Learning Australia is recommending this be done by offering to fund facilitators to bring the networks together and help realize initial demonstration projects that might attract other sponsors to take a joined-up approach to learning and community building.

There are precedents for this. In Germany, around EUR 118 million (or AUD193 million) – from the German federal budget and the European Social Fund – has been made available over about five years to support the development and expansion networks to create "learning

regions" which are close enough to people's lives and their work that the results of any lifelong learning initiatives are tangible (OECD, 2002a). The primary aims of the projects are to,

- increase motivation and participation in education, especially on the part of disadvantaged or hard-to-reach persons, and enhance their ability to learn on their own;
- bring about qualitative (and quantitative) improvements to make providers significantly more user-oriented;
- encourage self-directed learning and the establishment of community learning centres (OECD, 2002a).

The funding model requires that the regions develop feasible solutions to the problem of long-term funding. Projects are fully funded during the planning phase, after which they must mobilise funds of their own for the implementation phase: 20 percent for each of the first two years and 40 percent for each of the two following years. The rationale here is that once enterprises and learners are engaged they see the benefits of contributing to their ongoing learning.

In quoting the German experience I am not deliberately ignoring what is happening in Australia. There are exciting projects underway here, but in our dispersed system and – without an overarching policy approach – not enough is being done to disseminate best practice, ensure replication, and achieve sustainability for good ideas.

But let me quickly tell those of you not from Central Queensland about a project which has achieved success right here in Rockhampton. It demonstrates what I've been talking about in terms of partnerships, non-accredited learning, and so on. The Communities on the Internet (COIN) project was part of the Family Community Network Initiative of the Commonwealth Department of Family and Community Services (FACS). It saw the establishment of the COIN Academy jointly managed by the Rockhampton City Council, which received the FACS grant, and Central Queensland University, which leveraged further money from other sources such as the "Networking the Nation".

The COIN Academy is located in a university-owned building in the Rockhampton central business district. It offers information-technology training to community-based, not-for-profit organizations such as the University of the Third Age, 60s and Better, and the Vietnam Veterans' Association. Members can also use the computer laboratory and get an email account. To become sustainable and maintain the no-cost service to not-for-profit organizations, the COIN Academy is now able to seek fee-paying clients.

This example illustrates the argument that local partnerships defined by learning (in school, in TAFE, at adult education centres, at work, in the library, on the bowling green, in the garden centre, or at the pub) should be the determinant of funding allocations from various existing buckets; and not just the education budget, but the health promotion fund, the community services money, and business development grants, not to mention funds from businesses and learners themselves.

But this needs more than the tireless efforts of local people. It demands policy leadership and a major change of attitude about education and training, recognising that,

- it is not just about either work or recreation, but an integral part of life;
- it does not always have to result in a piece of paper and measurable outcomes;
- "soft options" such as learning without grades and, learning at the pub instead of the TAFE, are effective strategies, particularly for encouraging the reluctant learner.

Passionate learners – you in the audience – don't need to be encouraged. The research shows that you can't stop them learning. They will seek out opportunities, and are prepared to invest in the learning endeavours. They represent about 20 percent of Australia's adult population. There is another 20 percent, though, who are not interested and say they cannot be tempted. They are too old, they say, or too dumb, or too poor.

The current system in Australia, driven by industry demand and individual choice, does little to entice these people back to learning. They are often in situations where training is either not on offer or is inappropriate (e.g., the training does not take account of learning barriers or is intimidating or expensive). This must be rectified because not to have the capacity to learn throughout life is a recipe for

individual disadvantage and societal dysfunction.

Whose responsibility?

I see providing incentives to disengaged learners as, fundamentally, a government responsibility. Indeed, so far in this presentation, it is the state which seems to be shouldering most of the responsibility for financing lifelong learning. I do believe it is a core government responsibility to create the enabling environment for a learning society, in terms of both policy and funding. But where in government? I have already argued for a joint effort by all three levels of government. In the present climate at national and state levels I do not think it would be wise to place the responsibility on departments of education. That runs the risk of reinforcing a narrow definition of learning, as that which takes place within educational institutions and on the job, rather than also in doctor's surgeries, on television, in our cultural institutions, and so on. It will also do nothing to abate the rivalry for the education dollar.

And that's where all those in the educational sector have a responsibility to make a greater effort to collaborate rather than compete. Some schools are now opening up their premises for others to use in the evening. Universities and TAFE colleges have a long way to go in establishing more trust in each other. The adult and community-education sector needs to talk better within itself and to be more active in establishing partnerships with other parts of the education and learning world. Learning providers and industry also need to do more talking. At the moment, it seems to me they complain that neither speaks the other's language and leave it at that. More businesspeople need to stop thinking that money spent on learning is a luxury. As for individuals, if the passionate learners are any indication, once all these other players have worked together to create an appetite for learning, there'll be no stopping them!

More specifically, I would encourage the researchers among you to tackle the most difficult of tasks: the mapping of informal learning and the capturing of the less tangible results from learning. These data are sorely needed to convince governments to fund incentive payments to disengaged learners and to recognise that learning pathways are not always linear; that people change direction, and that some need both time to readjust to learning and help in putting together their life and learning plans.

We also need to work harder at getting the private sector to embrace innovative learning models which will tackle their own skill-development requirements and those of their workers – particularly as we face the challenges of an ageing population. We need to convince the private sector that a wider contribution to a learning society is not a gesture of altruism but – to return to the language of business – an urgent and necessary investment in Australia's future.

At this juncture in Australia, there is an immediate role for government to play in creating the enabling environment for a learning society to flourish. This role could be fulfilled through creating a policy framework with the aim of adopting whole-of-government approaches to meeting community and individual demands for learning. To be effective both in terms of efficient use of funds and in stimulating the appetite, the framework must recognise that learning brings much broader benefits to society than just vocational outcomes.

To support such a framework will require a more streamlined funding system and, in some areas, seed money to help learning communities get established, and an injection of funds as incentives to those not able to access a market-driven education sector. A new approach to funding must also consciously address the counterproductive effects of the competitive models currently in place. An investment of national government funds in lifewide learning, which encourages a collaborative effort to build a learning society will bear dividends and will see the responsibility for learning more evenly spread in the future. And while this may not be considered popular in an election year, it would demonstrate a sincere commitment to bolstering Australian democracy and fostering a society comfortable also in its celebration of achievements away from the stadium – for instance, in theatres or in science laboratories, or even in libraries. Australia could become a nation that is as proud of its teachers as it is of its cricketers.

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INFORMATION LITERACY AS A CATALYST FOR EDUCATIONAL CHANGE: A BACKGROUND PAPER

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INTRODUCTION

The idea of information literacy, emerging with the advent of information technologies in the early 1970s, has grown, taken shape and strengthened to become recognised as the critical literacy for the twenty-first century. Sometimes interpreted as one of a number of literacies, information literacy (IL) is also described as the overarching literacy essential for twenty-first century living. Today, IL is inextricably associated with information practices and critical thinking in the information and communication technology (ICT) environment.

Information literacy is conceivably the foundation for learning in our contemporary environment of continuous technological change. As information and communication technologies develop rapidly, and the information environment becomes increasingly complex, educators are recognizing the need for learners to engage with the information environment as part of their formal learning processes. IL is generally seen as pivotal to the pursuit of lifelong learning, and central to achieving both personal empowerment and economic development.

Information literacy is a natural extension of the concept of literacy in our information society. Information literacy education is the catalyst required to transform the information society of today into the learning society of tomorrow.

Across the world, educators in primary, secondary, tertiary, and professional education contexts have been developing strategies and policies for designing learning opportunities that will enable learners to take advantage of the information and communication infrastructures available to them. Learning opportunities that enhance information literacy not only make use of information and communication infrastructures, but are designed to bring the information practices, that are effective in professional, civic, and personal life into curriculum. Such opportunities make it possible for learners of all ages to experience the power of effective information practices. When reflection on learning to be information literate is combined with the experience of information literacy, students are helped to recognize the transferability of the processes involved to every day life, community and workplace contexts. Reflecting on the concept of information literacy itself allows it to be more easily transferred to novel situations.

> In New Zealand a teacher reads non-fiction to children as narrative. As the children pose the questions that they anticipate may be answered in the text, and then reflect on whether their expectations are met, they learn to seek and evaluate information. (Moore and Page, 2002)

> In Australia, undergraduate students keep diaries to reflect on their experience of learning to search the Internet. They create Web sites that organize information resources of use to a business of their choice; requiring access, evaluation and synthesis. (Edwards, 2000)

> In Ghana, postgraduate research students learn, in the library, to critically evaluate and make effective use of information sources, including electronic databases and internet facilities. (Entsua-Mensah, 2001)

The above examples reveal the range of available approaches to teaching information literacy that may occur at different stages in the educational process and in different nations. They also reveal something of the distinction between information literacy (IL) and information technology (IT) literacy. The concepts of IL and IT literacy are usually distinguished to demonstrate the difference between the intellectual capabilities involved in using information, and the capabilities required for using technologies that deliver or contain "information".' This distinction is also made to convey the idea that provision of ICTs and associated training in the use of hardware and software – the focus of many government,

corporate, and educational programs – is only a starting point in achieving desired reforms. In practice, the information-literacy agenda may be advanced as a consequence of new information technologies, or in the absence of an appropriate IT infrastructure. In the latter case, promoting the information-literacy agenda may point towards the need for planned technological advancement in learning communities.

This paper will review key models and standards associated with information literacy in the educational sectors, and elaborate the role of information-literacy education in transforming our information society into a learning society. The directions required in systems of education to achieve this will be discussed, and examples of current practice will be provided. Some key issues will also be highlighted.

INFORMATION LITERACY—THE FOUNDATION FOR LEARNING IN OUR CONTEMPORARY ENVIRONMENT OF CONTINUOUS TECHNOLOGICAL CHANGE

Before embarking on any discussion of information-literacy education it is essential to briefly review the character of information literacy as it is presently being interpreted in educational settings. These models take the working definition of information literacy and tease out aspects of its meaning in a way that has proven to be useful to educators across the world.

As we enter the twenty-first century, three models of information literacy, and two sets of standards have assumed particular importance in the educational sector. These are,

- Eisenberg and Berkowitz's Big6 information skills (Eisenberg & Berkowitz, 1990)
- Doyle's attributes of an information literate person (Doyle, 1992)
- Bruce's seven faces of information literacy (Bruce, 1997)
- The information literacy standards for student learning (ALA & AECT, 1998)
- The ALA information literacy competency standards for higher education (ALA, 2000)

The information skills models developed in the 1980s provide a series of processes, or steps that students need to negotiate when information problem solving. Eisenberg and Berkowitz's (1990) Big6 steps are task definition, creating information-seeking strategies, locating and accessing information, using information, synthesizing information, and evaluating information. Information literacy in this model may be described as systematic information behaviour. Learning to be information literate involves practicing the use of the system, or the steps, when engaged in learning tasks.

Doyle's (1992) attributes of the information-literate person are the outcome of a Delphi study, in which a group of experts discussed and agreed upon characteristics associated with information literacy. In this model, the information-literate person is one who recognises that accurate and complete information is the basis for intelligent decision-making, recognises the need for information, formulates questions based on information needs, identifies potential sources of information, develops successful search strategies, accesses sources of information, evaluates information, organizes information, integrates new information into an existing body of knowledge, and uses information in critical thinking and problem solving (p. 2). Learning to be information literate involves acquiring and demonstrating these attributes.

The relational model of information literacy (Bruce, 1997) was developed through researching the information experiences of professionals representing a range of disciplines. This model frames information literacy in terms of seven different ways of seeing and experiencing information use. Each of these reveals one of seven facets of the information-literacy experience: information technology for retrieval and communication, information sources, information process, information control, knowledge construction, knowledge extension, and wisdom. Many of these ways of seeing information literacy involve recognising interdependency between groups and individuals in the information literacy experience. Learning to be information literate, in this model, involves becoming aware of different ways of experiencing information use through engaging in relevant information practices and reflection.

The American Library Association (ALA) information literacy standards for schools (ALA and AECT, 1998) and higher education (ALA, 2000) were devised through extensive consultation between educators and information professionals. These standards comprise grouped lists of desirable learning outcomes and

processes for individuals. The standards for schools are divided into three categories: information literacy, independent learning, and social responsibility; with the standards reflecting the importance of information literacy to independent learning and social responsibility.

Models and standards such as these are used for communicating the character of information literacy, for curriculum design and evaluation, for staff development, and for assessing students. Taken together, they reveal the richness of the information-literacy experience as it is understood by educators who have been working with the concept. Information literacy, from these descriptions, is clearly part of the fabric of learning; and, if students are to learn to learn from the resources available in information-rich environments, must be woven into the learning experience. In recognition of this imperative, localized models of information literacy are created to meet the needs of specific educational contexts around the world.

In the UK, SCONUL (1999) developed an information skills model depicting library and IT skills as fundamental building blocks. Together with seven "headline" information skills these assist the development of information literacy.

In Singapore, the Ministry of Education (1997) published Information Literacy Guidelines, which are described as the framework for a course on learning how to learn. The guidelines include an instruction program, assessment and evaluation, and pupil performance standards.

The New Zealand school curriculum framework includes information skills as one of the eight groupings of essential skills that must be developed by all students. (New Zealand, 1993)

Key issue 1: are the models and standards presently available suitable for promotion globally. How might different cultural and national interests be reflected?

Key issue 2: While many aspects of an information literacy curriculum may be taught without state-of-the-art information technology, how can we determine what levels of IT infrastructure are appropriate for the most effective implementation of information-literacy education?

INFORMATION LITERACY EDUCATION—THE CATALYST REQUIRED TO TRANSFORM THE INFORMATION SOCIETY OF TODAY INTO THE LEARNING SOCIETY OF TOMORROW

While many of today's educators are concerned about creating learning activities that require engagement with today's ICT environment, it is attention to information practices that are fundamental to effective information use. It is bringing these information practices into the curriculum – and ensuring that students have the capabilities to engage in, and reflect upon such practices – that constitutes information-literacy education. Information practices may vary somewhat across disciplines, but they clearly underpin academic and professional practices in, for example, the humanities, science, social science, health sciences, and technology-based disciplines; as well as underpinning informed civic responsibility.

Advocates for information literacy are often concerned about the need to promote the impact of information literacy on academic achievement.

Ross Todd (1995) identified that, in Australian schools, students with information literacy capability scored better on assessment criteria and in exams.

Louise Limberg (1998) discovered that, in Swedish schools, students who approached information seeking and use in more sophisticated ways, also achieved more sophisticated learning outcomes; these were associated with understanding and interpretation, not reproduction.

The significance of information-literacy education lies in its potential to encourage deep, rather than surface learning, and in its potential to transform dependent learners into independent, self-directed, lifelong learners. Without information literacy, people are condemned to lack of information, dependence upon others for access to knowledge and information, and even to acute levels of information anxiety (Wurman, 2001). Making

information and information technologies available to the world is not enough. Our education systems need to ensure that today's learners are empowered to learn and to take their place in the learning society.

> "South Africa's legacy of authoritarianism and rote learning has severely undermined and depressed our citizenry, so the challenge to provide quality education within a framework of lifelong learning looms large.
> In keeping with this challenge, information literacy has come to feature prominently on the agendas of those concerned with educational transformation" (Cathy-Mae Karelse, 2000).

> "In Singapore, the Government realizes that these (information) skills are important for the longevity of the …economy. However, to move from a traditional … learning environment to one where school children work in project-based collaborative environments, supported by appropriate technological platforms, as well as electronic and paper-based sources of information is a major challenge for any educational system, including Singapore's" (Hepworth, 2000).

Breivik (1998) captured the essence of the changes required to educational systems in order to realize the potential of information-literacy education for lifelong learning. Her argument centers around the need to move away from the dominant paradigm of prepackaging information for students in the form of textbooks, lectures, and even artificially-constrained multimedia resources, to facilitating active learning using real-world information resources. Such learning processes, she concludes, would necessarily involve the information processes, practices, and experiences described as information literacy.

> The effects of prepackaging of information are most obvious in the school and academic settings. Students, for example, receive predigested information from lectures and textbooks, and little in their environment fosters active thinking or problem solving. What problem solving does occur is (often) within artificially constructed and limited information environments… Such exercises bear little resemblance to problem solving in the real world where multiple solutions of varying degrees of usefulness must be pieced together – often from many disciplines and from multiple information sources such as online databases, videotapes, government documents, and journals.
>
> Education needs a new model of learning – learning that is based on the information resources of the real world and learning that is active and integrated, not passive and fragmented. …What is called for is not a new information studies curriculum, but a restructuring of the learning process. Textbooks, workbooks and lectures must yield to a learning process based on information resources available for learning and problem solving throughout people's lifetimes. (Breivik, 1998, pp. 127-128)

While curriculum practices involving active, collaborative, resource-based learning are often pointed to as the ideal, they are still innovative practices. Furthermore, while effective information use arguably underpins enquiry learning, problem based learning, action-learning, and various other student-centred modes, an effective information-literacy education requires explicit attention to information processes – as well as the careful crafting of real-world information practices, and meaningful reflection, into curricula.

Such an information-literacy education supports all of Delors' (1996) four pillars, the proposed foundations for education in the twenty-first century. The use of real-world learning resources supports "learning to live together", effectively bringing the world into the classroom or, perhaps, taking the classroom out into the world. The use of ICTs has the potential to link students to the rich histories, cultures, and traditions of the world in a way previously out of reach. Using information to learn is also essential to "learning to know", as learners seek out knowledge from the exploding range of resources available to them and develop a critical appreciation of the relative value of those resources. Bringing the information practices of the real world into the curriculum supports "learning to do", as learning experiences are designed to introduce learners to the kinds of information practices that will support professional and civic and personal life. And, finally, the emphasis on critical and creative thinking, communication, teamwork, and wisdom that are integral to an information-

literacy education support the fourth pillar: "learning to be".

Schools, colleges, universities, and community information places all over the world need to pursue the pathways of information-literacy education in order to support, and bring to maturity, the embryonic educational systems that are emerging in response to the lifelong learning vision.

Key issue 3: What is required to bring about a transformation of learning processes?

Key issue 4: What is the role of different educational sectors and different groups within the sectors?

INFORMATION LITERACY EDUCATION – CONSTRUCTING BEST PRACTICE

The idea of information-literacy education and its transformational potential is not new. Information-literacy education and associated issues have been discussed extensively since the late 1980s, and many programs have emerged at all educational levels (Breivik, 1998; Bruce & Candy, 2000; Farmer & Mech, 1992; Henri & Bonnano, 1999; Spitzer, Eisenberg, & Lowe, 1998). There is a broad foundation of research and practice on which to base an informed approach to furthering the agenda.

In this section, selected experiences are captured to reveal important elements of forwarding the information-literacy agenda. Best practice is interpreted as those approaches which,

1) interpret information literacy as integral to the learning process (Case 1),
2) bring learner centred, experiential and reflective approaches to the information literacy education process (Cases 2 & 3),
3) bring collaborative approaches to program implementation (Case 4),
4) establish partnerships within and between organizations (Case 4 & 5).

Case 1: The impact of the information seeking and use process on learning outcomes (Limberg, 1998)

The inextricable link between information literacy and learning is clearly revealed in Louise Limberg's analysis, in Sweden, of school students seeking to understand the possible impact, for Sweden, of becoming a member of the European Union (EU). Limberg's study shows that different ways of experiencing the information-seeking and use process may have a significant impact on the outcomes of learning. The investigation also reveals the importance of taking a holistic approach to teaching and learning information literacy.

Within the group of students participating in the investigation, three different ways of experiencing information seeking and use were identified. For some, information seeking was experienced as fact-finding, or finding the right answer. These students wanted information that was easy to access, and disregarded – because of lack of facts – what they considered to be biased information. This approach to information seeking and use was associated with impoverished learning outcomes. The students acquired a fragmentary knowledge of the European Union and were unable to assess consequences of EU membership due, from their perspective, to lack of facts.

Others experienced information seeking and use as balancing information in order to choose. These learners interpreted the information-seeking process in terms of finding sufficient information to allow them to form a personal standpoint on a controversial issue, that of Swedish membership of the EU. Students experiencing information use this way still sought answers to questions and found it difficult to manage subjective views on the issue. They did, however, achieve an understanding of the character of the EU and were able to put forward advantages and disadvantages associated with membership – primarily associated with economic cooperation.

Students adopting a third approach to information seeking and use, experienced the process as scrutinizing and analyzing. These students sought to understand by critically analysing and evaluating information sources. They sought to identify the underlying values and motives in the discourse they were interpreting. These students were able to critically assess the issues associated with membership of the EU, and they considered political and moral, as well as economic issues.

Case 2: Helping Learners Navigate the Digital Environment (Fitzgerald and Galloway, 2001)

Fitzgerald and Galloway (2001) provide important insights into learners' conceptual maps of the digital information terrain. They observed ten high-school students using the online environment as they pursued a teacher's assigned task, and ten university students working on a research project. Their findings reveal the need for teachers and learners to work together to understand each other's ways of seeing the information landscape – both digital and non-digital, formal and informal – as well as other elements of information use.

It is clear from investigations like this that as students engage with information use, they acquire particular ways of seeing – some of which may be more powerful or more appropriate than others. Teachers can design learning strategies which reveal these ways of seeing, and facilitate the acquisition of those which are more helpful to the context.

The students participating in this project were using the Internet and, in particular, a virtual library named GALILEO, which serves academic, public, and K-12 clients. Many of these students had not conceptualised the boundary separating GALILEO from the Internet, and had difficulty differentiating GALILEO from other Internet services. Also, they did not always distinguish clearly between GALILEO and the local public access catalogue. When the availability of online and CD-ROM databases are added to this picture it is easy to see how conceptual confusion might hinder the information-use experience. While we might infer that a seamless Internet experience is what users seek and expect, the online environment is structured in ways that need to be understood.

Students also had difficulty with creating conceptual maps of the disciplines available to them. Many information sources, including print and online tools, belong to a discipline domain. Students observed in this project were often unable to determine what discipline an area of study would fall into and, therefore, were unable to select, for example, appropriate online databases. While some models of the terrain suitable for more sophisticated users are emerging (see, for example, Chau, 1997), there remains the need for simple models that are suitable for neophyte and younger users.

Case 3: A reflective model for learning to search the Internet (Edwards & Bruce, 2000)

The reflective model for learning to search the Internet (see figure 1) was developed by bringing together the needs of two groups of learners: first-year undergraduate students, and South African female academics with limited access to technology and associated expertise.

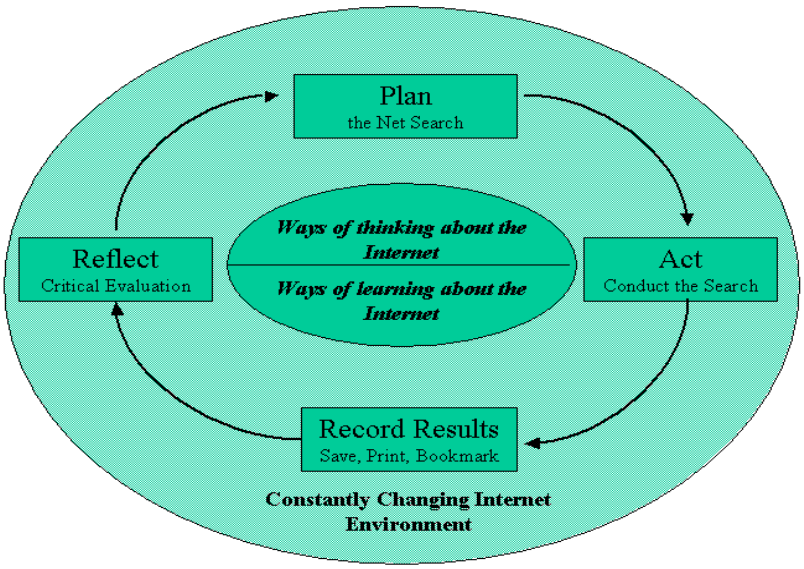

Figure 1. Reflective model for learning to search the internet (Edwards & Bruce, 2000).

While focusing on a single aspect of the information-literacy experience, this model reflects the view that it is not technical skills that make effective Internet users, but rather the

reflective and conceptual capabilities that are part of the character of the information literate. It steps away from the skills-based approach to teaching and learning the Internet which, the authors argue, lacks power because of the changing nature of both the technology and Internet content. It emphasises reflective competence and the ability to continue to learn in the face of change; establishing capabilities that are intended to empower learners to move forward into an unknown future.

The model appears suitable for use with neophytes of all age groups as well as with more experienced information and technology users. It appropriates and structures processes that are relatively timeless, and reflects closely people's natural ways of working.

Case 4: The Australian Catholic University's Information Literacy Academic Development Program (Bruce, Chesterton, & Grimison, 2002)

In 1999, Australian Catholic University (ACU) embarked upon a long-term program, targeting the incorporation of information-literacy education across its curriculum. The program was developed at a time when major online learning initiatives and associated technological infrastructures were also being established. The ACU program is founded on principles that apply equally to schools as to universities. First, that teachers need to own curriculum innovations and to be involved in developing strategies relevant to their contexts; and second, that leaders and managers are key stakeholders who need development opportunities in order to assist in leading desired reforms.

The ACU initiative, which is ongoing, developed policy and implemented a staff-development program that targeted senior management as well as other academics, information specialists, and learning support staff. This program differed from previous Australian information-literacy initiatives in that the project team worked over a period of two years, both horizontally and vertically, across the university structure. The staff-development program targeted senior staff meetings, initiated one-to-one discussions with deans and pro-vice chancellors, and implemented a workshop program that strengthened existing curriculum strategies and facilitated the development of new ideas across all campuses and disciplines. The program was jointly managed by the chair of the information-literacy working party, and the academic staff-development coordinator, on behalf of the academic board.

The workshop component of the program aimed to introduce, strengthen, and enhance information literacy as a focus for academics and learning-support staff, by initiating a process of reflection and action on the nature of information literacy and implications for curriculum design. Its intention was to facilitate a transfer of the awareness raising experienced by staff into the learning experiences of students. Day-long workshops were held on all campuses of the university where staff engaged in the following processes;

- making explicit their own views of information literacy and information-literacy education;
- exploring and becoming familiar with three models of information literacy;
- adapting existing models to their discipline contexts;
- considering the impact of existing practice and future possibilities;
- examining examples of how learning tasks or assignments can be shaped to foster information literate practice;
- suggesting barriers to, and support necessary for, implementing information-literacy education;
- developing specific learning strategies to include information-literacy processes and outcomes.

An important intention of the workshops was to help staff see aspects of what they were already doing in terms of information literacy, and to make that explicit in learning objectives, assignments, and assessment criteria. Overall, the workshops sought to bring information practices into focus for participants. They were encouraged to reflect on their own information experiences, their understandings of information literacy, and the understandings of students. They were also offered the opportunity of working with information specialists to construct models of information literacy useful to their own context, and to modify or design new learning experiences that would require students to focus and reflect on their own information practices.

Case 5: INFOLIT – a regional approach to promoting information literacy education (Karelse, 2000; Sayed, 1998)

The INFOLIT program was developed and implemented in 1995, for an initial period of five years, by a consortium of five, higher-education institutions in the Western Cape Region of South Africa. The program had a wide brief: aiming to promote information literacy in primary and secondary schools, universities, and the wider community using techniques based on pilot studies and needs assessments. It targeted the development of learning communities in the region through the promotion of cross-institutional and trans-disciplinary collaboration.

The INFOLIT program, in its early stages, concerned itself with the development of partnerships between information specialists and educators, professional development opportunities for information specialists, the integration or embedding of information literacy in curriculum, and the possibilities of inter and intra institutional collaboration. A key part of this program was an investigation of capacities contributing to information literacy across students in the region. Sayed (1998) measured six indicators of students' capabilities: confidence, reading and writing ability, computer confidence, library usage, information needs, and independent learning.

Karelse's (2000) conclusions from several years involvement with INFOLIT capture some of the significant challenges for promoting the information literacy agenda.

> In order for the new information infrastructure to aid development by the people, for the people and of the people, it seems imperative that people's capacities are developed to ensure that they can participate in shaping the development of the global information society. The ways in which curricula are developed in response to this need, and the ways in which educational systems are designed to address the problems of access, equity and redress are central to this challenge. Most importantly, the extent to which academics who wield tremendous power within the system are able to shift their mindset from a notion of 'having to teach their students everything' will determine how productively the opportunities presented by the formulation of a lifelong learning framework are created. The extent to which academics are prepared to become more reflective and self-conscious of their own ongoing learning will influence their ability to engage with students more interactively to create open spaces into which students can bring their own experiences to create quality learning. (p. 49)

KEYS TO IMPLEMENTING INFORMATION-LITERACY EDUCATION

Thus far we have reviewed the role of information literacy as a catalyst for educational change. This paper has argued that information-literacy education has the power to transform the learning process into one that will empower learners, and give them the capacity to engage in self-directed lifelong learning outside the formal educational environment. Information-literacy education involves bringing real-life experiences of information use into the classroom, and creating opportunities for critical reflection on the learning process, to foster an awareness in learners of what they have learned.

What is required to make information-literacy education a key feature of curriculum in all sectors? While global interest in self-directed lifelong learning has already emerged as a strong trend, and information-literacy programs have developed in many places, these are still considered innovations. The experiences of those leading these developments suggests that there are a number of keys to facilitating the adoption of information-literacy education.

Cultural change, change in educational values

The adoption of information-literacy education as we have discussed it in this paper is most likely to take root in contexts where there is simultaneous emphasis on what we know to be educational best practice. Broad shifts that are commonly advocated involve movement from a content orientation in teaching, to one that is process orientated, shifts from a teacher-centred to a learner-centred view of learning, and an increased emphasis on understanding the perceptual worlds of students and their pedagogical implications. Such shifts both aid, and can be aided by, guided movement towards information-literacy education. It is generally the case that teachers who value the new paradigms find it much easier to embrace information-literacy education. Clearly, changes

in educational cultures cannot be mandated; a valuing of information literacy and student-centred approaches to teaching and learning can be facilitated by changes to policy, staff development, and curriculum as discussed below.

Establishing policy and guidelines

International, national, and institutional guidelines and policies can direct and support the adoption of information-literacy education.

> "A society's ability to develop is determined by its ability to access information, so that information and information technologies are no longer a luxury…but a basic human right" (African Women, 1998).

Internationally and nationally, of fundamental importance are policies and guidelines regarding basic levels of information-technology infrastructure, and the need for an information-literacy education program in schools. Guidelines and policies for teacher education, and the establishment of information-literacy programs, also should be dealt with at this level. National policies and guidelines targeting information-literacy education and associated infrastructure in the wider community can only support such an emphasis on the educational system. Finally, and of considerable significance, are policy and guidelines regarding the role of the information specialist in the learning environment. In schools in particular, the role of the teacher-librarian has been shown to be very important for building information literacy into curriculum; and the education and placement of such personnel must be endorsed in both developed and underdeveloped regions.

At all levels, the IL initiative can only be strengthened, by promoting it as a vehicle for enhancing critical enquiry and self directed learning, and as a foundational element of a broader focus on lifelong learning. Attention to information literacy should clearly be rewarded through funding and grant schemes.

At the institutional level, policies need to support information-literacy education in order to support or facilitate a flow into staff development and curriculum initiatives. Once the connection with the idea of information literacy has been made, many institutions have developed their own statements about information literacy and its purposes in order to reflect the institutional context. It is critical that institutions promote an integration of information literacy with the underlying values and philosophies of the educational institution. This may relate to associations with industry and the economy, to the individual in seeking professional currency and renewal, to the empowering features of information literacy in community and personal contexts, to social justice issues, or to the spiritual and ethical dimensions of information literacy.

Teacher Education - Staff Development

Professional education and staff-development programs for teachers and information specialists need to model and invite scholarly engagement with the idea of information-literacy education. To help bridge the gap between policy and practice they, need to reflect the changes to educational culture associated with promoting lifelong learning. It is important that such programs communicate with teachers, information specialists, and managers about the character of information literacy, and draw upon the life experiences of these people to help them understand the importance of information literacy to learner development. Some of the most important hurdles in such programs are,

1) the hurdle of understanding that information literacy is not a pre-requisite to learning, we are not talking about a program of remediation, but rather about actualizing a way of learning;
2) the hurdle of modifying, changing, or constructing new designs for learning experiences;
3) the hurdle of changing how much we expect students to learn; in a process approach content is no longer paramount, but rather the ability to learn;
4) the hurdle of technology; learning to use technology and learning to use technology to support learning.

The role of education for teachers, information specialists and managers, not only in schools but also in the tertiary sector, is critical to global information-literacy education initiatives.

National and international collaboration in the development of model programs will clearly lead development in this area. Aspects of learning may be electronically showcased – making readily available portfolios of strategies.

Partnerships between key personnel

> "Mexican companies… are in search of graduates with appropriate skills to survive in the more competitive local markets that are now part of the local economy…At the University of Juarez, Mexico, the partnership between faculties and libraries sets the basis for the education of future graduates who will have the information skills required for lifelong learning and for a productive professional career" (Lau, 2001).

Information-literacy education is not possible without partnerships. Students, information specialists, IT specialists, curriculum designers, community organizations, and teachers – amongst others – all need an awareness of the value of information literacy, and all need to collaborate to make possible learning experiences that facilitate information literacy. We should also note that no single group, in a broad context, nor individuals in a local context; neither governments, nor schools, nor universities, nor teachers, can carry responsibility for information literacy amongst students. This responsibility must be shared within strategic partnerships operating at various levels, including curriculum design, policy development, staff development, research, and classroom teaching; and be supported by educational leaders such as principals and deans.

The most fundamental of these partnerships at all levels of education, from primary schools to doctoral studies, is the collaborative relationship between the teachers, information specialists, and students. In evolving information-literacy programs all over the world, partnerships are slowly transforming student learning, and these partnerships seem to be based on changing views of the world from both librarian and teacher perspectives. Librarians are beginning to recognise the need to move away from a library and information-retrieval centred view of information literacy towards a broader understanding of the role of information literacy and the information professional in fostering student learning. From a teacher perspective, there is a developing recognition of the importance of the world of information and information literacy to student learning. The critical role of the teacher-librarian and media specialist as established through "Information Power", the US-based guidelines for information-literacy education in schools, has proven to be an important element of successful programs. It is also clear that educational teams need access to IT expertise as well as familiarity with learning theory and broader curriculum issues.

All five of the areas of partnership: curriculum design, policy development, staff development, research, and classroom teaching are required to bring about change. The opportunity is available to systemically capture these elements, and to develop the synergies between them, as one of the fundamental keys to creating teaching-learning experiences that promote self-directed and critical lifelong learning (Bruce, 2001).

Critical components of an information literacy program

In any educational sector, there are four critical components of an information-literacy program.

1) Resources to facilitate the learning of specific skills, e. g., Web-based information-skills enhancement packages and other point of need, or self-paced instruction.
2) Curriculum that provides integrated opportunities to learn specific skills, either early in a course or at point of need, (from self-paced packages, peers, lecturers, librarians).
3) Curriculum that requires engagement in embedded learning activities that require ongoing interaction with the information environment.
4) Curriculum that provides embedded opportunities for reflection and documentation of learning about effective information practices.

The first of these represents the resource base that supports learning skills underpinning information literacy, the second represents curriculum integration, and the latter two represent what is better described as embedded information-literacy education. In all sectors, curriculum development – including course approval and review processes – may be used to monitor the inclusion of information literacy in curriculum.

Operating alongside this model of information-literacy education, are three critical elements of learning to be information literate:

1) experiencing information literacy (learning),

2) reflection on experience (being aware of learning),
3) application of experience to novel contexts (transfer of learning).

Successful information-literacy programs do not only focus on teaching information skills, they focus on designing learning experiences that require the use of information skills.

> Dr Sigrun Hannesdottir, (1999) Director of the Nordic Council for Scientific Information writes,
> "It can be argued that the training of future citizens to handle information should start in primary schools. There is no other institution that is in a better position to provide citizens with the information skills and literacy that they need than the library of a school which forms a part of compulsory education.
> The vision of the information literate school community is that skills for searching for information and handling of data will be integrated with the subject teaching. Children of the future should learn how to deal with information at the same time as they learn their subjects. That is the only way we can prepare them for an uncertain future."

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LIFELONG LEARNING: SAILING TO ATLANTIS?

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ABSTRACT

The conceptual frames informing current lifelong learning policy at European Union (EU) and national level shape the way that people in key marginalised sectors in the Republic of Ireland: Travellers, other ethnic minorities, and people with disabilities are provided for. Examination of the experiences of these groups suggests the following questions; whose choices, whose needs, and whose ambitions shape the voyage?

INTRODUCTION

The theme of this conference, "Lifelong Learning: Whose Responsibility and What is Your Contribution?", suggests that my first duty should be to explain what sort of contribution I think I might make. Issues of access and equity have been central in my working experience – both as a *teacher* of Travellers and now as a *researcher* with immigrants, people with disabilities and, again, Travellers. (Travellers are an indigenous minority ethnic group with a nomadic tradition, similar to other groups across Europe – the Roma being perhaps the best known; they are also the target of virulent racism in Ireland). I do not offer a critique of the extensive research literature on the topic of lifelong learning; instead I will attempt an exploration of some concerns I have about aspects of current policy and provision, and I will link that to an examination of some key comments by participants in research projects I have undertaken.

For the main elements of a theoretical substructure for this discussion, I turned to two veritable chalk-and-cheese scholarly sources. The Gramscian notion of the mythmaking apparatus of the power block will inform my analysis of international and national (Republic of Ireland) policy texts, when I ask the following questions. Who says what lifelong learning is, what it is for, and for whom? And what are the key ideas and how do they interact – with each other, and with provision?

Social cohesion is a much-mentioned theme in the lifelong learning agenda for Europe; issues of marginality and exclusion are urgent in this social territory marked by ancient conflicts and caught up in the current worldwide population movements. However, the experience of members of marginal groups is one of exclusion. Goffman (1971) illuminates how we manage stigmatised groups. Marginal groups are mentioned in virtually every public document on the topic of lifelong learning but the construction of these groups is often problematic. Extracts from my interview data will give an indicator of the position and experience of Travellers, people with disabilities, and immigrants.

The late John O'Connell, a key figure in work relating to promoting inclusion and combating discrimination in Ireland, summed up the socio-political situation that is emerging in Europe in this comment, "While socialism was a real threat, capitalism had to wear a human face" (personal communication, 1998). What we have learned about life in former Soviet Bloc countries since the fall of the Berlin wall suggests that perhaps all ideologies need the discipline imposed by a threat to their dominance. The Republic of Ireland in the twentieth century was typical of much of the western world in its set of mutually-challenging sources of official discourse regarding policy and provision – here the focus was on discourse structuring education. There were three major power blocs: the institutional church, the state, and labour movements. At least in theory, church and state could resist each other's agendas; labour movements formed another recognised locus for dissent. As has been succinctly described by Keogh (2003), the first two power systems developed a deep mutual understanding and effectively sang from the same hymn sheet. There was no divide between public and private ideologies for the vast majority of Irish people, and the focus and activities of the labour movement did not particularly threaten ideological harmony. As we all know now, the gap between the myths or

gospels preached by each of these blocs and the reality of practice was unconscionably wide.

What concerns me is – now that the old hymn sheets are being torn up – who preaches; who is the moral trendsetter? And from what platforms can the dominant discourse be challenged? There was value in having potentially opposed power systems; and this window of opportunity for critique and resistance was used. People were always capable of reminding the church of its own teachings, of challenging state from that very powerful basis, and of reminding the church of the law. To their members these institutions felt utterly familiar and the main lines of the two discourses were fairly common currency.

In this millennium, humanistic discourses of citizenship, responsibility, and inclusion emanate from sites of economic governance. These discourses and the structures from which they emanate are only vaguely known to the general public (Optem S.A.R.L, 2001). At national and European levels, newly-emerging bodies struggle to be widely representative and known, and to achieve formal recognition as stakeholders in the policy arena (for instance, the non-government organization platform in the EU, or the National Parents' Councils in the Irish education arena). In this transition period, vigilance is needed if vulnerable sectors are to be protected and have space to flourish.

These brief notes must suffice to suggest the frame within which I wish to examine elements from official discourse on lifelong learning. I turn now to discuss the situation in the Republic of Ireland.

THE CHANGING FACE OF THE REPUBLIC OF IRELAND

The core impetus for a new approach to education comes from the pace of change in the economic domain, but also from major, current demographic and social changes. The EU population grew by 0.3 percent (1,290,000 people) to 379 million in 2002. Births account for 25 percent of this increase; 75 percent is due to migration flows. The Irish Republic has had the highest rate of increase (15.2 percent) (European Commission Representation in Ireland, 2004, paragraph 5): its population stood at 3.2 million in 1901, it dropped to 2.8 million by 1961, and since then has risen to its present 3.9 million (Central Statistics Office, 2003). Emigration drained the country from the nineteenth century until the 1960s, and on into the so-called "brain drain" in the 1980s. However, especially from 1995 to 2000, the flow has been dramatically reversed: about a quarter of a million people migrated to the Republic. Of these, roughly half were returning Irish emigrants or their offspring (this phenomenon has now died off), approximately 10 percent were asylum seekers, and the balance were European and American (Ward, 2003, pp. 9-10).

The economic boom is accompanied by growing socio-economic disparities. The growing "socio-informational" (to coin a term) divide is evident in 2002 census data on access to information and communications technology. Economic disadvantage and geographic remoteness correlate with relatively low levels of computer ownership and access to the Internet. As is almost too obvious to warrant telling, education and access to employment are linked. In the Irish Republic a distinctive factor is the remarkable marginalisation of older women, 80 percent of whom are not in the labour force, and the majority of whom have lower-secondary educational attainment at best. The unemployment rate among early school leavers (15-29 years) is about 15 percent – less than half what it was in 1991, but still significantly more than of the national average of 4.5%. Young women are more likely than young men to have employment – many probably in the growing service sector where employment is insecure and low-paid (Gorard, 2002; Keogh, 2003).

Statistical data on the position of Travellers, people with disabilities, and immigrants are not available, but it is widely agreed that their situations are dismal, with unemployment rates of approximately 70 percent for people with disabilities (Disability World, 2001), blocks to both the entrepreneurial initiatives and the employment of Travellers (Department of Justice, Equality and Law Reform, 2001, Section G), and limited employment opportunities accompanied by exploitative work places for many immigrants (Ward, 2002). Travellers' take-up of secondary education is improving but is still problematic. Access for asylum seekers to education provision is too complex for the space available here, but suffice it to say that they encounter daunting hurdles. Access support for people with disabilities is growing but they also encounter major obstacles.

The Republic of Ireland combines one of the worst rates of basic literacy in the OECD (Organization for Economic Cooperation and Development) with the second highest rate of third level (postsecondary) qualifications in its population. A key factor in this is the late arrival of free secondary education (1966) and the resultant large proportion of the population with below lower-secondary educational attainment. A large proportion of the tertiary qualifications are in the type B range – diplomas and other certifications for vocational-type courses (including Information communications technology [ICT]). But as this brief overview suggests, there is a strong need for adult education opportunities to address the divides in Irish society.

Adult education and lifelong learning

The Government White Paper on Adult Education (Department of Education and Science (DES), 2000) identifies an interesting set of areas to be addressed in adult education: "consciousness raising; citizenship; cohesion; competitiveness; cultural development; and community building" (p. 28). Five of the six terms are in the cultural domain; later in the paper the DES notes the need to reflect feminist critique and analysis into planning and delivery of programs (p. 111). This is radical stuff in a state text, and it needs to be remembered that the interpretative frameworks of adult education providers will modulate this discourse in its progress into practice (Keogh, 2003). This White Paper also sets out three core principles that, together, underpin effective lifelong learning: it requires a systemic approach, a commitment to equality and interculturalism in an increasingly diverse Irish society (DES, 2000, p. 30).

There have been numerous initiatives in the last few decades, from locally based women's groups, community groups, and adult education opportunities; to state initiatives – a key one of which has been the Vocational Training Opportunities Schemes (VTOS), which target unemployed people over twenty-one years of age who have an education deficit. About 5,000 people registered with VTOS in 2002. This provision has proven a remarkable window of opportunity for those people who avail themselves of it. Courses range from Leaving Certificate modules, through community development, to those that focus on specific skills such as heavy vehicle driving. However, 80 percent of the population do not pursue a course of any kind in any given year; and most of the 20 percent who do enrol for hobby, professional, or other courses are already advantaged in terms of educational attainments (Keogh, 2003, p. 29). Thus, the gap widens between and the majority who need further lifelong learning opportunities. However, all the people who need these courses could not possibly find places even if they tried.

I turn now to the experience of members of very marginalised groups: Travellers, immigrants, and people with disabilities. The move in the Irish Republic, away from specialised schooling and towards supporting needs within mainstream education, has paralleled international developments. Research, including the small-scale projects in which I have been involved (Gannon, Moreau, & Kenny, 2002; Kenny & Mc Neela, (in press); Kenny, Mc Neela, Shevlin, & Daly, 2000; Kenny, Mc Neela, Walsh, & Shevlin, 2003), has found that supports to enable members of these minorities to access mainstream education provision have proven inadequate at best. I suggest that two avenues of enquiry are worth pursuing in the discussion on why inclusion is proving so difficult to achieve. On the one hand there is the absence of systemic commitment, and on the other there are cultural barriers. The two sets of factors intersect. In the discussion of policy texts I have identified examples of how economic and social aims for lifelong learning make uneasy bedfellows, and how, as argued by Gorard, Rees, Febre, and Furlong (1998, p. 33), these aims may be in conflict.

Here, I want to draw attention to another factor in policy texts that makes for difficulty: the location of discussion about difference. The DES White Paper on adult education is remarkable because it locates discussion of diversity right at the fountainhead of the paper, so to speak: the section on social diversity and the needs for interculturalism are in Chapter 1, where the framework for all subsequent discussion of provision is laid down. By contrast, another much respected policy text, the National Children's Strategy (2000), locates its excellent section on social and cultural diversity (pp. 70-71) under the heading "some children have additional needs" (p. 63). This conflation of difference with difficulty shows a slippage towards the old deficit concepts and it does nothing to challenge such a mindset among educators, students and their families, and the

general public. The slippage is crudely obvious in the term so often used to denote Travellers – "the Traveller problem".
By defining people who are different as part of a cluster of people with specific needs, the identities of all are compromised. An example of problematic location occurs in the National Centre for Technology in Education report (2000) on ICT in the classroom. Chapter 6 (pp. 36-41) offers ten "Case Studies of ICT Use in the Classroom" by students with intellectual, physical, emotional, or sensory disabilities. The fourth and fifth case studies are, "Traveller Education" and "Non-English Speaking Students". Inclusion not informed by sound conceptualisation is a false dawn. Minorised people from all domains of human difference have a lot in common – the fact that they are seen as all of a kind is part of the imposed, exclusionary silencing that they share.

This fuzziness in policy texts is matched by the persistence of old constructs in the culture of the education system:

> Attitudinal and environmental barriers, both within higher education and external to it … preclude and diminish the possibility of students participating ... (Department of Education and Science, 2001, p. 63)

When understandings of difference and difficulty are conflated, riches are lost. In my research with immigrants, the huge range of languages the foreign national students spoke was referred to by less than one in ten of the education providers – the focus of the providers was on the immigrants' lack of English. This focus was supported by the absolutely urgent need that many of these immigrants had for basic facilities to enable them to live with dignity. But no matter how dire their straits, they were also human beings who were bringing a wealth of diversity into the school community – but it could not be introduced if its existence was not recognised.

Lifelong learning and the "target group"

The interview participants in these research projects want to be able to access education institutions and programs without a regularly recurring struggle to hang onto whatever they need in order to have this access; they want to participate academically and socially; they want to do as well as their abilities will allow; and they want a say in the development and delivery of education. Fleming (2002) points out that this will require a profound change of mindset at university level, and at the core of this he identifies the need to build bridges between "college knowledge" and "common knowledge". In different ways this applies to all levels.

This constant struggle to stay in the game, so to speak, links with the idea of how difference is located and constructed in policy documents. I suggest that there is another, perhaps deeper layer: how we construct normality. In everyday life, in educational theory, and in policy texts ranging from the UN declaration on the rights of the child, through to local education policies, normality is considered as a quality of the individual. The word also slips towards notions of norms, standards, ideals – and it ends with, for instance, little girls submitting to the moral superiority of the Barbie doll. This individualised concept of normality also offers no basis for challenging the exclusionary thrust inherent in competitiveness. I suggest that we need to pluralise the concept of normality: a group is normal when it reflects the range of human being-ness in the wider community, and any learner needs this normal context in order to flourish both as part of it and as an individual.

Starting from the concept of a diverse normal population, human rights are non-negotiable, and respect for them requires a system's commitment to seeing diversity as being normal. There is a lot of talk about equality proofing but, as the DES Action Group reported, attitudinal barriers persist. The response of many educational institutions reflects the "location" problem noted above: for instance, access officers are employed in colleges, and support staff are employed in schools, but their location in the system is not powerful. Accessibility should be a core concept, not an add-on, and personnel appointed to promote it require power to audit, monitor, and promote an ethos and practice of inclusion, at conceptual, policy, curricular, resource, social, and physical levels. As Harreveld's (2004) study of adult literacy teachers demonstrates, educators are agents who take and reshape policy, within the space available. People are not stooges of policy; and therein lies the hope that the social agenda of governments will be strengthened and that the economic imperative will be modulated. Besides, as Klasen (2001) noted, policy makers are honestly concerned; the dominance of economic forces is an unintended outcome – or

at least the narrowing that comes with giving economic interests such central space has not been registered and so has not been addressed.

CONCLUSION: WHAT IS OUR RESPONSIBILITY, OUR CONTRIBUTION, AS RESEARCHERS AND EDUCATORS?

It is impossible here to do anything more than touch on a few of our responsibilities and contributions. Firstly, we should recognise that there are limits to what we can do. Gorard, Rees, Fevre, & Furlong (1998) argue that perhaps the issues to be confronted lie in the economy and in the social fabric rather than in education – that the state-led focus on education as the general panacea may falsely locate the problem in the individual lifelong learner's failure to look after her or his needs rather than in broader areas. And given the impact of social and familial factors on educational attainment, policy makers might,

> … concentrate on reducing inequalities in society, rather than simply trying to increase the opportunities for everyone to learn. In summary, it is perhaps more likely in trying to create a learning society, that a just society will lead to an increase in participation, than that an increase in educational participation will lead to a just society. (pp. 33-34)

This helps to delimit the scope of educators' and education researchers' responsibilities, but within the space of education provision we have a job to do if we are committed to promoting a just society. The perspectives of members of marginal groups offer useful vantage points for critiquing current understandings of lifelong learning policy and provision. Education providers and consumers need to reflect and dialogue: whose choices, whose needs, whose ambitions shape the voyage? Lynch (1999) notes the need to disturb the comfort of institutions:

> All institutions and systems, including education, are structured around institutional lethargy…[This] needs to be confronted…. The system of representative decision making which has built up … means that those with the best resources and organization are most likely to be heard. (pp. 306-307)
> … It is essential that [marginalised] groups be resourced and supported (and trained if necessary) if they are to be effective. (p. 306)

Some elements of the researcher/educator's role are identified here: studying and confronting the uneven distribution of power; and engaging in emancipatory solidarity (including education) with minorised people. Pat Cox, President of the European Parliament, is reported as having said that "the Lisbon Process has already produced too many words" (Irish National Organization of the Unemployed, 2004). However, they are words of power, and in order to make best use of them (and perhaps stem the flood) this sea of words needs to be critiqued. Auden's (1958) metaphor of sailing to Atlantis wonderfully catches the scenario under discussion here, with its turbulence, contradictions, and confusions. The opening lines must suffice to illustrate this:

Being set on the idea
Of getting to Atlantis,
You have discovered of course
Only the Ship of Fools is
Making the voyage this year,
As gales of abnormal force
Are predicted….

But we will all sail on anyway, and learn a lot in the process.

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THINKING LIKE AN EXPERT: A SKILL REQUIRED FOR SURVIVING THE 21ST CENTURY

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ABSTRACT

Collaborative tools have become increasingly important to lifelong learners who face a rapidly transforming world in which knowledge has a very short shelf-life. Learners and workers now require metacognitive tools to create and implement new knowledge "just-in-time".

INTRODUCTION

Social and technological change is now occurring at such a fast rate that the staff of learning organizations, not just the experts, need just-in-time access to all kinds of processes – those that focus on strategy, risk management, innovation, continuous improvement, learning, and project planning – if their organizations are to remain successful. These process skills need to be acquired in days or weeks rather than months or years and at prices closer to those paid for training and consulting than that paid for obtaining a university qualification.

A new generation of computer-based tools that scaffold the role of a team leader or facilitator (Elliott, 2002; Findlay, 2003) are now being created to support organization improvement or transformation programs. One such tool, known as the BizKit Team Meeting System, helps novice facilitators competently facilitate complex business process improvement, and strategy and team-formation processes, after as little as two or three days training. The acquisition of such skills previously required many years of experience in business, or study at a business school or university (Findlay, 2001).

The tool is a member of a new generation of technologies including group decision support systems, decision support software, simulations, and multiplayer games that scaffold meta-cognitive processes and support human-human interaction as opposed to human-computer interaction (Findlay & Fitzgerald, 2004). In the future, it is possible that such tools will available to everyone, thereby further democratising the work of academics, consultants, and other professionals engaged in knowledge or wisdom work.

This paper describes the theoretical framework for the tool, how it was developed and the ways it is used. Complex business thinking and decision-making processes employed by the first author over a decade are captured in the BizKit software together with content knowledge about the fields of process innovation, continuous improvement, teamwork, and project planning. These components are provided just-in-time to facilitators trained in the use of the tool.

The system comprises the software and hardware to create the physical environment for dialogue; the thinking methods to guide dialogue; an etiquette to structure each stage of the discussion, recording, sharing, and integration of ideas; and facilitation techniques that shape the manner in which participants engage with each other. The system enables up to 12 people to type in ideas and information and to display it instantly to the others in the group. It incorporates tools that support collaborative learning and metacognitive processes (Peters, 2000; Imel, 2002) such as analysing, classifying, sorting, evaluating, and decision making.

The system is integrated with a knowledge base called "the BizKit Way" which contains the theory of how to conduct transformation interventions, the specifics of each kind of intervention – such as business process innovation, and the methods required for success. Models of conversations are embedded in templates to help team members to reveal what they already know and to make sense of what they co-create. These structured thinking processes lead the team through cognitive tasks such as sequencing, segmenting, and categorising actions, and through complex metacognitive processes such as problem solving, decision making, and planning.

THEORETICAL FRAMEWORK

Lifelong learning as a concept has emerged as a response to accelerating change as workers discover that "once-off" skills and knowledge acquired during their youth are no longer relevant to employers who must constantly adapt to accelerating social and technological change (Prestoungrange, 2002; Findlay, 2001). The tacit knowledge of organizations and of the individuals within them is now viewed with such strategic importance that many organizations have developed a core capability in "knowledge management" to capture expertise for wider and more reliable use (Shariq, 1998; Nonaka, Umemoto, & Senoo, 1996). Others, especially those in industries where change is transformative, have taken a more innovative approach and employ knowledge-creation principles (Findlay, 2001) to make sense of new information arriving from the marketplace and the laboratory. Responsibility for knowledge creation is shifted from managers, academics, and consultants, to the worker.

Knowledge creation has parallels with the social constructivist theories of learning and development (Vygotsky, 1978). Vygotsky argued that all learning and development is mediated by tools and social engagement with people who are more capable. The new capability, which first appears socially, is then internalised and becomes automatic. With practice, the activity becomes routine; for example, driving a motor car or cooking a meal. The new knowledge is progressively incorporated into physical tools such as utensils, appliances, and computers; or into psychological tools such as business methods and mental models (Leont'ev, 1979; Hasan & Gould, 2001).

A new breed of complex tools that are part psychological and part physical are being created which support "knowledge creation" by novices who do not fully understand the knowledge behind their construction (Findlay & Fitzgerald, 2004). These include simulations, group decision support systems, decision systems, and computer games. Thus, it is now possible for a person to learn how to think and act like an expert just in time in many fields simply by engaging with a device that supports specific processes of transforming data into information, or information into knowledge. The tools are also able to act as "trainer wheels" for novice facilitators by constraining the way a person can engage with such tools so that the overall effect is to mimic the ideal ways people conduct dialogue (Findlay & Fitzgerald, 2004).

Organizations create knowledge mainly through the social interactions of people and through a complex process of meaning or sense making. Although tools exist that facilitate the sharing of information, such as bulletin boards, shared databases, e-mail, inter-office memorandums, and reports, these knowledge-transmission tools alone do not facilitate the creation of concepts or mental models. "The meaning making occurs primarily through conversations or dialogue in social settings such as meetings and workshops" (Stacey, 2001, p. 68). New knowledge arises from understanding points of difference between one person and another, yourself and others (Stacey, 2001).

According to Stacey's complex response processes approach (Stacey, 2001),

> New patterns emerge from the communication between people based on four features of communication which lead to the formation of concepts and theories:
>
> - mutual expectations of associative response
> - turn-taking sequences
> - segmenting and categorizing actions and
> - rhetorical devices. (p. 68)

People expect others to reply and to reply in turn. Turn-taking and turn-making (e.g., question and answer, request and response, and invitation and acceptance) are actions of sequencing, segmenting, and categorising. Rhetorical devices such as directive and instructive forms of talk serve to point to features of the conversation and link in their practical activities (Stacey, 2001). People change and develop new knowledge when they see the unique variations in each other's expressions.

People learn through conversation and collaboration, primarily through facilitating, role modelling, and coaching (Tinzmann, Jones, Fennimore, Bakker, Fine, & Pierce, 1990). When people work together on complex problems in this manner, they assist each other with the tasks within the context of conversation, which provides a form of "mutual regulation" (Tinzmann et al., 1990).

Focused conversations, which occur routinely in well-facilitated or led meetings and less frequently in unstructured and disorganized dialogue, provide a method for moving past content-based conversations to those that involve knowledge-sharing and knowledge creation. A focused conversation is made up of four types of questions (Stanfield, 2000):

1) objective questions that are about facts and external reality;
2) reflective questions which elicit immediate personal reactions;
3) interpretive questions that draw out meanings, values, significance, and implications;
4) decisional questions that elicit resolution, helping the team make decisions about the future, and bringing the conversation to a close.

Sequences of these kinds of questions are at the heart of the knowledge-creation process (Findlay, 2003). The sequence of the questions captures the form of the conversations in order to promote learning and development and the creation of knowledge. They scaffold the thinking required to achieve a desired outcome for any kind of business or learning process. Scaffolding is a support structure that is progressively withdrawn as the learner acquires the requisite skills. It also changes the nature of the conversation to progressively give increasing responsibility for the task to the learner (Tinzmann et al., 1990).

Business process improvement (BPI) is such a method. It is used by organizations to transform the way they operate from a present state, aligned to current market needs; to a new state, aligned to emerging needs. The drivers of change are a shift from declining cultures such as that of the Information Age (circa 1700-1940) or the Industrial Age (circa 1940-1980), to a rising culture – that of the Knowledge Age (Findlay, 2001). BPI is undertaken as a result of feedback from the people and the organizational system they interact with (Schon, 1973; Argyris, 1993).

The BizKit Way

The BizKit Way reflects a series of thinking processes, and incorporates, guided discovery question sequences, meeting etiquette, and facilitation techniques (what is required to transfer to novices the skills of a competent manager or consultant) into its user interface. The BizKit Way is organized and displayed using PowerPoint presentations within an electronic or conventional workshop or meeting. The process embedded within the tool is a pathway – represented visually by a process model (see figure 1). This model represents the consultant's expert knowledge of business process re-engineering which the consultant shares with the participants in workshops and meetings. The model itself helps people to learn how to reflect on their own learning. For example, the "review process changes" shown in figure 1 helps reveal what participants have learned by engaging in the meta-process.

Typical workplace problems faced by people provide a useful focus for learning and development and for improvement activities. The meta-business process improvement is simply one big problem-solving exercise, separated into discrete sub-components so it is doable. The problem solving process begins with a definition of the problem before an attempt is made to identify the root cause. To facilitate business improvement activities, action learning situations are created in the workplace through workshops and meetings, often using problem solving as the main learning strategy. Such problem-based learning (Gurrie, 2003) presents complex, real-world problems to students who work in small groups to negotiate common understandings and solutions.

In a conventional setting, it falls to the consultant to help the participants understand their own "real-world" problems, and they work as a team to understand the problem and to find various solutions. In a meeting facilitated by a novice, the problem solving is scaffolded by the BizKit Way question sequences that take the participants on a guided, discovery-learning journey. Each question sequence starts with objective questions about current knowledge, then moves to reflective questions to elicit immediate personal reactions. Interpretive questions then draw out meaning, and the

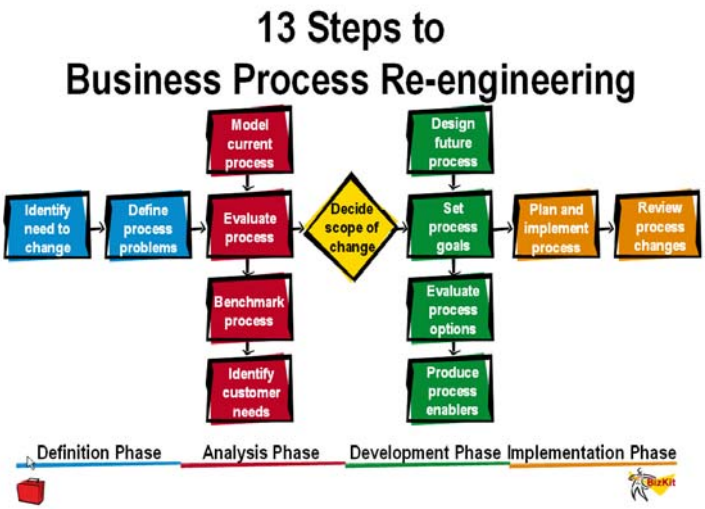

Figure 1. Example of a thinking process map (Alexander, 2004, p. 58).

sequence finishes with decisional questions to help the team make decisions about the future.

For example,

Facts – What facts do you know about the problem?
Feelings – What do you feel about the problem?
Failings – What are the negative aspects of the problem?
Features – What are the positive aspects of the problem?
Fantasies – What are your ideas to improve the situation created by the problem?
Forwards – What are the ways you could move forward?

The conversations start with the facilitator announcing the question and asking all participants to discuss the question in dyads for a few minutes (see figure 2); in other words, to have a conversation in turn.

The conversational turns (i.e., whose turn it is) within each question are controlled by an etiquette known as "talk, type, read, review".

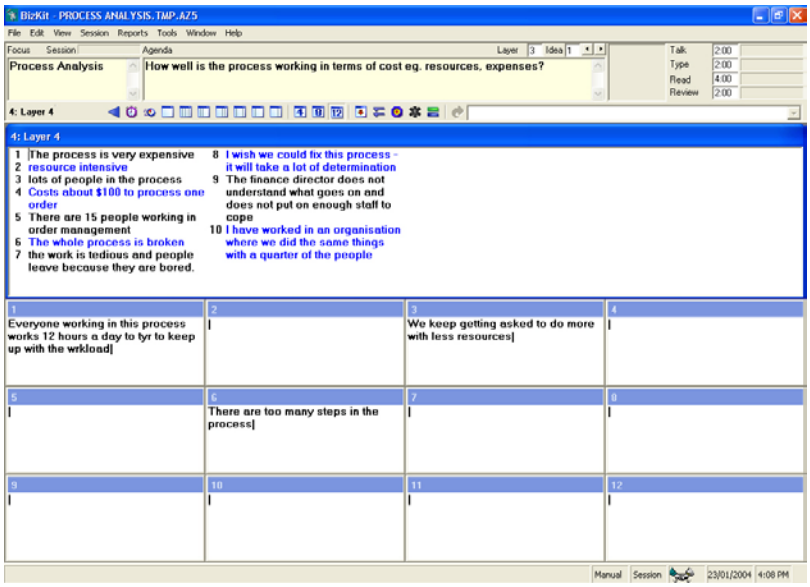

Figure 2. Focused conversation using a template in the BizKit Team Meeting System (Alexander & Findlay, 2004).

Figure 3. Conversation etiquette timer (Alexander & Findlay, 2004).

The "talk" phase initiates the first round of conversation during which existing information or knowledge is shared with at least one other person – thus beginning the formation of a relationship. Some initial knowledge integration takes place within the context of the question that has been asked of the group. The "type" phase initiates a further round of dialogue, where participants are able to contribute and see each other's contributions simultaneously. Further knowledge integration occurs through the borrowing of other ideas and the incorporation of these into the ideas that participants are putting forward. In the "read" phase, the facilitator reads or asks one of the team to read through all of the contributions in sequence. The first time the facilitator uses the etiquette, he or she models the way to read the text – without interpretation or adding any value. This activity is reflective and gives the participants time and space to reflect on their own and others' contributions. It is vital to the creation of new knowledge and should not be skipped, even though it takes twice as long as the reading, typing, and reviewing phases.

In the "reviewing" phase, the facilitator asks the participants to reflect on the meanings of their contributions and on the conversation as a whole. The team meeting system has a function called "themes (see figure 4) to enable the facilitator to enter the theme of the conversation or a summary. In this way the facilitator models the expert skills of summarising or reflecting on meaning and how the knowledge was created.

To make sense of the contributions and to create new knowledge, the team meeting system provides a variety of functions including a tool for sorting. This can be used to categorise the contributions (see figure 5) – one of the metacognitive skills that experts use. The facilitator can model this sorting process or the participants can do it themselves.

Once the facilitator has modelled the process, the participants can easily do it themselves, taking responsibility for the task.

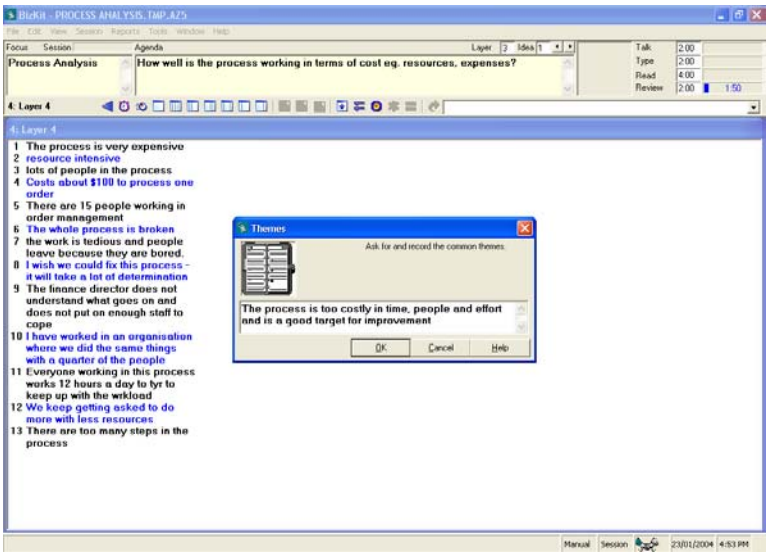

Figure 4. Reviewing the conversation and its meaning (Alexander & Findlay, 2004).

CONCLUSION

The BizKit Team Meeting System is an example of the kinds of tools that can facilitate the just-in-time acquisition and implementation of high-level skills that were once the exclusive preserve of experts, including managers, consultants, and academics.

It is no longer sufficient for learners to simply be passive receivers of knowledge via transmission methods such as lectures and texts.

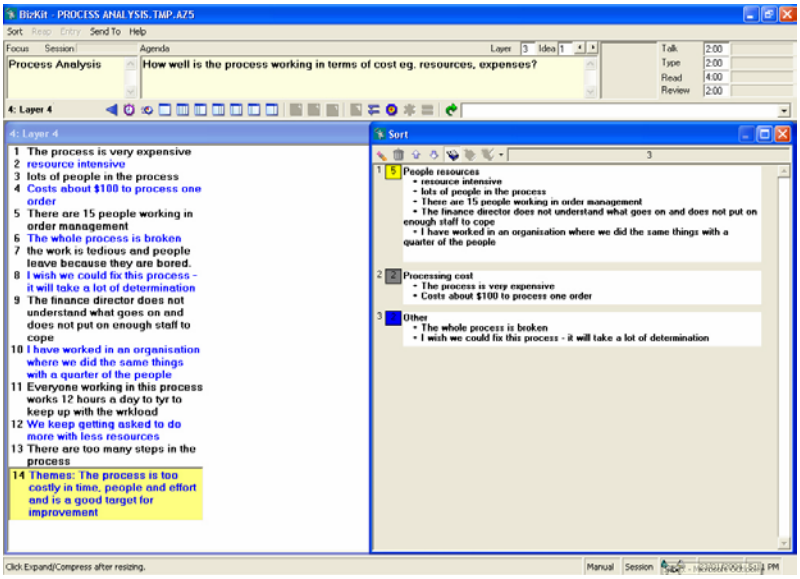

Figure 5. Categorising by sorting (Alexander & Findlay, 2004).

Lifelong learners must become active participants in knowledge creation for their own benefit and the benefit of the organizations in which they work – and the societies in which they live.

Increasingly, lifelong learners will also need to move beyond simply participating. They will have to take the lead in creating solutions to seemingly insurmountable problems of poverty, war, racism, bigotry, and terrorism. There are now no excuses. The tools that allow anyone to solve the most complex problems are now readily available.

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LET ME LEARN – TIME, PLACE, AND PACE: INFORMATION LITERACY IN A FLEXIBLE LEARNING ENVIRONMENT

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ABSTRACT

Our rationale for embedding information literacy into a new, core, undergraduate business course is grounded in a growing body of knowledge emphasising that effective information literacy requires cross-disciplinary integration. In presenting our teaching model we contend that embedding authentic skills throughout the curriculum supports lifelong information literacy.

INTRODUCTION

The business world depends upon currency of information, and access to new information is critical to growth and economic prosperity (Feast, 2003). In line with the American Library Association (ALA) definition of information literacy[1], we believe lifelong information-literacy skills will enable business graduates to adapt in an ever-changing environment. Increasingly, accreditation agencies demand that information literacy be reflected in Business School learning outcomes (Sullivan, 2003), which creates a critical connection between the Business School and the library.

In this paper we argue that information literacy must become more than just a part of Business School education – it must be embedded throughout the curriculum. We present our experience in using this approach in a new first-year course that has operated over the past four semesters. Through cross-disciplinary collaboration on course design, delivery, and assessment, librarians and teachers created a student-centred, information-literacy program for developing the skills identified by Hawes (1994) as being essential for business students, e.g., to effectively locate information and critically evaluate its usefulness for decision making. By utilizing electronic learning (e-learning) platforms in authentic and meaningful ways we create opportunities for students to take responsibility for the modus operandi of their own learning and, in the process, to gain lifelong-learning skills that are essential for succeeding in the Information Age.

[1] "Ultimately, information literate people are those who have learned how to learn. They know how to learn because they know how knowledge is organized, how to find information and how to use information in such a way that others can learn from them. They are people prepared for lifelong learning, because they can always find the information needed for any task or decision at hand" (ALA, 1989).

RESPONDING TO A CHANGING ENVIRONMENT

Bachelor of Business and Information Management

In 2001 the University of Auckland Business School introduced a new, three-year undergraduate degree program, The Bachelor of Business and Information Management (BBIM). Part of the rationale for introducing the program was the perceived need to produce business graduates who were better equipped to meet changing employer needs by demonstrating integrated business and information-management skills (University of Auckland, 2004).

Taught across three Auckland campus locations, the nature of the degree emphasises the use of electronic technology in course delivery and assessment. It is assumed that BBIM students are computer literate and capable of utilising electronic technologies for self-directed learning. Information-literacy skills were to be developed within this e-learning environment. At the end of their final year, students were to draw together their content and process knowledge, including information-literacy skills, in a "capstone" project. These skills are seen as directly transferable to the business environment that students would enter as University of Auckland graduates.

Issues associated with developing generic information literacy skills

Library sessions were offered to students throughout the year, but informal feedback suggested students did not relate generic skills to their assessment tasks. Traditional library teaching methods proved to be inadequate for achieving the BBIM information-literacy learning outcomes, were not utilising the high-tech nature of the BBIM environment, and were not equitably reaching across the three campus locations.

Conceptualising an innovative approach to developing information-literacy skills

At the beginning of 2002, key members of the management teaching team and the BBIM librarian began working together to create a more effective information-literacy program using e-learning technologies. In reviewing existing strategies, it became clear that a collaborative approach between teaching and library staff presented opportunities to better meet students' learning needs. Drawing upon research and shared experiences, we came to the conclusion that the information-literacy skills needed to be embedded in the curriculum to reinforce their importance and enable students to practice them in authentic and meaningful ways. The key good practices that informed our decision are outlined below.

Librarian-teacher collaboration

Our rationale for embedding information literacy into the course design, delivery, and assessment was firmly grounded in a growing body of knowledge emphasising that effective teaching of information-literacy skills occurs through collaborative librarian-teacher partnerships (See Black, Cresta, & Volland, 2001; Orr, Appleton, & Wallin, 2001; Grafstein, 2002). Through such relationships information literacy can be deeply embedded into the curriculum so students are not even aware that it is happening (Nerz & Weiner, 2001).

Fostering a lifelong learning environment

The collaborative team took a holistic approach to exploring ways to equip students with lifelong-learning skills in the Information Age. The Student-centred learning (SCL) environment (Biggs, 1999) fostered in the stage-one management courses was seen as an excellent vehicle for developing lifelong-learning skills in a way which is relevant to the learner's current and future needs. Embedding the development of information-literacy skills into a course premised on SCL allowed us to extend our collaborative partnership by involving students more closely in the learning and teaching process. We were very clear, however, that for this to succeed it was incumbent upon us to create ways for students to identify their own information-literacy needs and, as Rossi (2002) cautioned, to ensure that everyone in the learning process recognised their roles and developed the skills to fulfil them.

Facilitating student centeredness through flexible learning

Given the IT focus of the degree, time pressure in classes, and the equity issues in teaching across campuses, we chose flexible delivery and assessment methods. This approach facilitates students' responsibility for their own learning in deciding the time, place, and pace (Gunn, 2000).

EMBEDDING INFORMATION LITERACY IN A SCL ENVIRONMENT: THE *MGMT.191 INTRODUCTION TO BUSINESS* EXPERIENCE.

We launched our collaborative librarian-teacher *InfoLit* initiative in the first semester of 2002. We used the *MGMT.191* teaching philosophy to create a positive perception of information literacy through student-centred and context-relevant activities, which turned abstract information-literacy concepts into concrete skills.

Teaching philosophy and course design.

MGMT.191 Introduction to Business is a compulsory management course taken by BBIM students in their first semester and is centred on learning to learn for an unknown future. The

teaching model reflects our shared philosophy of fostering lifelong learning to condition students' minds to deep thinking (Arizona State University, 2002) and learning (Ramsden, 1992), and it is premised in research (McKeachie & Chism, 1994; Joyce, Weil, & Calhoun, 2000) which showed that, in first-year courses, effective learning is best supported by a multiple-model approach that provides a range of learning opportunities. Through suitable supports and multiple assessment modes early in the course, we created a learning context to prepare students for learning independently in the future.

Preparing students for lifelong learning

In transitioning into the *MGMT.191* SCL environment, learners took over responsibility for making their own choices and for developing career competencies on why to learn, how to learn, and with whom to learn. These skills were critical to the students' strategic ability to prepare for an unknown future. To help students to become aware of their lifelong-learning needs, and to help develop their choice making skills, we drew upon Arthur, Inkson, and Pringle's (1999) career competencies framework. We started building their "knowing-why" competency by helping them gain understanding of the benefits of SCL, i.e., why they needed to learn to learn effectively. Inspired by the importance of knowing-why, students were encouraged to develop their "knowing-how" competency (content knowledge and process skills, including information literacy, critical thinking, and effective communication), as well as their "knowing-whom" competency, i.e., developing collaborative skills, relationships, and networks. Thus, teachers, librarians, and students mutually reinforced each other's commitment to a SCL environment.

Embedding information literacy into course design

To embed lifelong information literacy into *MGMT.191*, an iterative process of refining the course design was undertaken. Information-literacy standards were followed closely and the major written assignments and skills were mapped to the standards. A BBIM information-literacy matrix of skills was created to assist with the embedding of information literacy into the course curriculum. The results formed the basis of the learning required and were incorporated in five InfoLit modules:

1) research & critical thinking skills,
2) academic honesty and APA referencing format,
3) using electronic information resources,
4) using the Internet to locate business resources,
5) researching a New Zealand industry.

The timing and content of the InfoLit modules were coordinated and matched with course assignments and tasks. For example, the first assignment required students to demonstrate the skills developed in the first three modules by undertaking library research, evaluating sources, and referencing. The content of the last two modules was essential to preparing a feasibility report for entering a New Zealand industry.

Embedding information literacy beyond InfoLit required the librarians to extend their influence. Increasingly, they researched potential topics for *MGMT.191* assignments, and advised on selections. Involvement in the course design provided valuable information that helped librarians to offer additional assistance that was directly relevant to students. Thus, the excellent communication and trust that developed out of our shared understanding of what we were trying to achieve, translated into designing an integrated system that assured the successful delivery of the InfoLit modules by the stakeholders.

Embedding information literacy into course delivery

InfoLit is offered concurrently to large classes across multiple campuses. To achieve equity across campuses we utilised two flexible learning platforms, LEARN[2] and Cecil[3]. Students complete five online tutorials which are accessed from the *MGMT.191* online course page. As part of their learning, students use a

[2] Library Electronic Academic Resource Network or LEARN is the University of Auckland library system. It includes the library catalogue, electronic databases, journals and books (e-books), and course and program web pages.

[3] Cecil is the University of Auckland web-based Learning Management System. It plays the role of other Learning Management Systems such as Web CT or Blackboard, but has more advanced features. Information on its features is available from https://cecil.auckland.ac.nz.

full range of library and electronic resources. Students are able to review the tutorial while completing the associated InfoLit assessment on Cecil.

Overcoming student barriers to lifelong information literacy

Our experience showed information literacy was a content and process area new to the majority of students. Previous learning experiences appeared to be a common obstacle (Ballard & Clanchy, 1991). This obstacle was heightened for many ESOL (English Speakers of Other Languages) students who are adjusting to a new cultural context of learning. As InfoLit was the first experience in SCL for many students, it was introduced through a face-to-face library session during *MGMT.191* class time. The InfoLit program was outlined and the tutorials and associated assessments were explained. Introducing the librarians as legitimate partners in the learning environment showed students how the librarian-teacher partnership operated in the course.

Ensuring effective virtual delivery for learning

Through LEARN and Cecil, students have flexibility in completing the InfoLit tutorials and assessments. The librarians have access to Cecil and the authority to manage the delivery and assessment process. Librarians communicate directly with classes by posting announcements and sending emails. Students received friendly reminders via email to complete the tutorials on time, and those who were underachieving were offered additional support. This close interaction strengthened the librarian/student relationship in the learning process.

Delivering information literacy beyond InfoLit

To maintain flexibility, the tutorials remain on the *MGMT.191* course page. This provides opportunities for repeated referrals. Librarians created online course resource pages to support information-literacy skills in other areas. Thus, virtual library services are delivered equitably and efficiently over three campus locations and, in so doing, an SCL environment is fostered.

Assessing information literacy

InfoLit assessment

Each week, students complete multi-choice questions supported by the InfoLit tutorial. To encourage participation and mastery of core skills, each weekly assessment is worth 1 percent of the course work, and students are given unlimited attempts with immediate feedback (backward navigation is not permitted, however).

Assessing information-literacy skills in other course work

The first assignment assesses students' abilities to demonstrate critical thinking, and research and reference skills; while the second one measures students' competencies to draw together the skills learnt to undertake business research. Thus, the importance of transferring information-literacy skills into other course work is emphasised and the outcomes are assessed holistically.

EVALUATING THE EFFECTIVENESS OF THE INFOLIT INITIATIVE

Student perceptions of the InfoLit initiative

New skills and increased confidence

Survey results across four semesters report appreciation of the information-literacy skills acquired (see figure 1) and enhanced confidence in using electronic resources. In particular, students recognised their previous limited knowledge of the library resources (see figure 2).

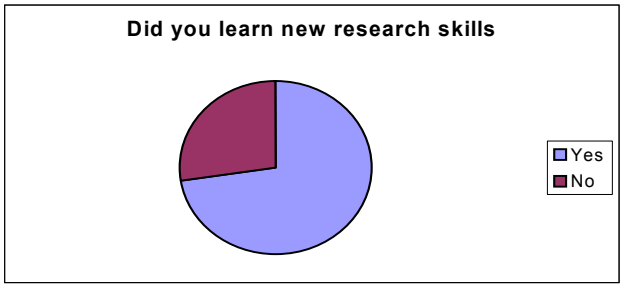

Figure 1. InfoLit student survey item on learning research skills.

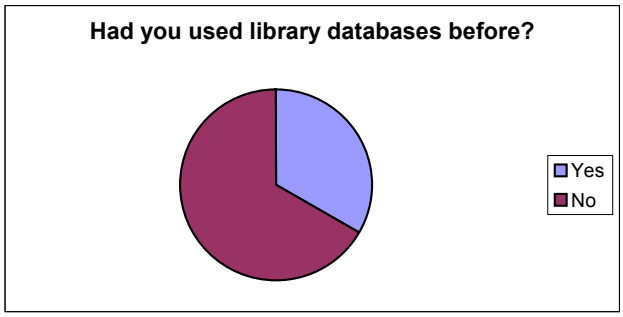

Figure 2. InfoLit student survey item on using library databases.

Greater flexibility
The flexible learning environment provided the opportunity for diverse learners to meet their individual learning needs and the challenges faced by ESOL students. Completing InfoLit outside of formal class time provided significant time, place, and pace advantages for student learning. Students valued the librarians' involvement and endorsed the benefits of "a library without walls" that enabled learning in their own time, place, and pace. Students also reported using their information literacy skills for other BBIM coursework.

Librarian observations and perceptions of the InfoLit initiative

Campus librarians found that InfoLit provided an opportunity to develop and enhance learning relationships with students and academics. Understanding and appreciation for the importance of integrating information literacy spread throughout the BBIM community. More and more academics embrace the emerging role of the librarian to embed information literacy into coursework, and further initiatives have been launched such as assessment based on research logs and annotated bibliographies.

The statistics confirm high use of BBIM online resources, including e-books. For example, in March 2003, the BBIM course page was ranked 37th in the top 400 LEARN pages. This was particularly pleasing for a program that enrolled around 1.8 percent of University of Auckland's 33, 500 students.

Teachers' observations and perceptions of InfoLit initiative

Observations from peers involved in *MGMT.191* have strongly commended students' information-literacy skills. Mastery of core skills has allowed BBIM students to meet the objectives of challenging assignments. This was demonstrated clearly in the management-consultant industry report where students had to locate, analyse, synthesise, and evaluate business information within established theoretical frameworks. Students were enacting the skills that will enable them to be effective business graduates.

Embedding information literacy into the BBIM program

A broad objective of the InfoLit initiative was to lead by example the embedding of information-literacy skills into other BBIM courses. Information-literacy skills introduced in the first year were envisaged to also support student learning in their third-year, capstone project, which is designed to produce a complete business solution. The learning objectives for this project were based on the assumption that information-literacy competencies have been gained in previous learning. Information-literacy skills introduced through InfoLit, were applied and practised by students in the *MGMT.191* assessment, which students then transferred into other BBIM courses. Hence, InfoLit became a building block towards lifelong information literacy.

Benefiting from fostering a collaborative learning culture

"If a commitment to life-long learning is embedded in the organisations [*or classroom*] values, then the work setting will have characteristics ensuring staff [*or learners*] can explore learning opportunities beyond the status quo" (Moreton & Salisbury, 2000).

In fostering an SCL environment, students, teachers, and librarians developed new frames of

learning that moved away from "teacher-as-expert" or teacher-centred models, and "librarians-as-gatekeepers-of-information" approaches. Our theories-in-practice (Argyris, 1999) suggest that we have shifted towards new mental models (Senge, 1994) about the learning and teaching roles in an academic environment. In modelling new frames of learning for students, teachers took on the role of learners by attending library sessions. Librarians and teachers have also modelled collaborative partnering to their peers by delivering joint departmental seminars and presentations, applying for teaching grants, and collaborating on conference papers. These initiatives enabled us to both broaden and deepen our expertise and learning by challenging traditional boundaries of ownership of course design and delivery.

PROMOTING AN AGENDA FOR EMBEDDING INFORMATION LITERACY INTO BUSINESS SCHOOL CURRICULUM.

The collaborative achievements to reinforce the view that information literacy is not just a library issue but an issue for all educators (Bundy as cited in Orr, et al., 2001). We believe that by embedding information literacy into Business School programs it becomes "the vehicle for curriculum innovation" (Cleary & Rigby, 1998). The lifelong-learning benefits are multiple. By involving librarians in the learning and teaching process, information literacy is embedded in the curriculum in authentic and meaningful ways, which better meet student-learning needs.

From a SCL perspective, we propose that existing views of cross-disciplinary collaboration should be extended so that students are also engaged as active contributors in fostering their own lifelong information literacy. By developing students' abilities to identify their learning needs, and legitimating and encouraging students to voice these needs, teachers can better facilitate lifelong learning.

CONCLUSION

The challenges of exponential information growth require information-literate Business School students. In an SCL environment, cross-discipline collaboration enables teachers and librarians to create innovative and exciting information-literacy programs. Thus, by embedding information literacy into *MGMT.191 Introduction to Business* course design, delivery, and assessment we have laid the foundations for students to take responsibility for their own learning and lifelong information-literacy needs.

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THE DISCOURSES OF LIFELONG LEARNING: GLOBAL, NATIONAL OR…?

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ABSTRACT

This paper aims at deconstructing lifelong learning as a concept and idea in Australia, the USA, and Sweden. The study is built on a discourse analysis of different web-based documents. The results of the study are structured round the words: life, long, and learning.

INTRODUCTION

Lifelong learning is a concept that at first glimpse seems self-evident, but when the surface is scratched different layers of understanding appear. The concept has been widespread around the world since the United Nations Education Science and Cultural Organization (UNESCO) first introduced it in the 1960s. Over the years, political organizations such as the Organization for Economic Cooperation and Development (OECD) and UNESCO have diffused the concept of lifelong learning and its embedded ideologies. Despite this global diffusion of the concept leading to an apparent consensus about the meaning of lifelong learning, there are many interpretations of its meaning, and of its relevance in different contexts. This paper aims at studying some different discursive expressions of lifelong learning, as they appear in different kinds of written documentations, in three national contexts that represent western thinking: the USA, Sweden (as being a part of the European Union), and Australia. The idea of the study at hand is to get a picture of the discourse formation on lifelong learning as a phenomenon and concept, that is *mapping the talk* (in this case "talk" as it appears in written form) of the users to find similarities and differences among different users and user-groups. The analysis aims at deconstructing the meaning that different users give lifelong learning, and showing how they discuss its usage.

THEORETICAL FRAMEWORK

Lifelong learning as discourse

Lifelong learning is a commonly-used expression in many contexts in many different national and international settings. Politicians, educational planners, teachers, human resource managers, economists, and many others talk about lifelong learning in a variety of situations and contexts. On the surface the expression may seem rather self-evident since it is built up by well known, everyday words, but lifelong learning is likely to be interpreted, understood, and used in different ways by different users in

different contexts. Therefore, there cannot be any absolute definition of lifelong learning. The term takes on whatever meaning the users in different discourses give it.

Discourse is often described as a certain way of understanding and talking about something; the relation between word and world (MacLure, 2003). Through language expressions, lifelong learning is given its meaning, which in its specific context of use, discourse, is also loaded with different sets of values connected to the concept itself. Since the expression lifelong learning is built up by the common words "lifelong", which in itself is construed by the words "life" and "long", and "learning", it is easily associated with the kinds of representations different users and user-groups have made and still make of these words.

Discourse, culture, and context

There are different layers of discourses: international and national discourses, discourses in different sectors, etc. A discourse analysis based on papers on lifelong learning from the International Conference of Lifelong Learning: Global Perspectives in Education held in Beijing (UNESCO, 2001) identified an emerging *metadiscourse* on lifelong learning. According to the study this metadiscourse holds underlying philosophies on human development and theories of knowledge shared especially within western thinking, but expressed as if being a "universal truth". One of the reasons why a metadiscourse on lifelong learning has emerged is likely to be the importance it has been given by large international political organizations such as the OECD, UNESCO, the International Monetary Fund (IMF), the World Bank and the International Labour Organization (ILO) (Melnyk & Tuijnman, 2002). It is often argued that the metadiscourse on lifelong learning celebrates neo-liberal values on rationality, economy, and the individual (Gouthro, 2002; Field, 2000). Adult education and learning is an important imperative of the metadiscourse on lifelong learning. The idea is that we live in a new kind of society, the knowledge society or learning society, where the kind of knowledge learnt in school is not regarded as enough to meet the constantly changing demands of the labour market. Unemployment is, to a large extent, thought of as a result of a mismatch between new labour-market needs and people's outdated irrelevant competencies (Belanger & Valdivielso, 1997).

Beneath this meta-level, the UNESCO report found a north-south and east-west divide. The south discourse talked about education for all, often in terms of basic education and minimum learning needs; whereas the north discourse focused on learning for all. The different discourses are a result of different structural and economic conditions that, in turn, are due to different historical developments. The east-west divide has less to do with structural or economic conditions and more to do with culture and traditions. Western culture has a tradition of celebrating rationality, and views knowledge as something objective, whereas eastern thinking views knowledge as subjective and instrumental and centred on social morals (UNESCO, 2001).

Each nation has its own history leading to its own traditions and identity. This identity, although not necessarily shared ideologically by all its citizens, is expressed in the language used, in its metaphors, keywords, topics talked about, etc. This could be called a national discourse. That is, the way people in a county talk about a topic such as lifelong learning. Its meanings are taken for granted in the conversation, and if associated ideas don't come to mind, or are considered politically incorrect, then they are not discussed.

Discourses can also occur within organizations, communities, or other specific groups where people have some kind of communication or commonalities between each other. The way people talk and think about lifelong learning in the industry sector for example, may cross national borders and be an industry-specific discourse rather than a national discourse. Thus, the talk within a particular organization within a sector – for example, within an international company – may carry the same meaning when talking about lifelong learning and thus be part of the same discourse; a discourse that may differ from the meaning the concept is given in a different sector such as the school-discourse across the street.

METHODOLOGY

This paper is built on an analysis of different kinds of documents[1] that represent the discourses of political and governmental groups, education providers of various kinds, and the labour markets in Sweden, Australia, and the

[1] See the reference list – all documents used in the analysis are marked with an asterisk *.

USA – all being part of the western discourse on education and learning. The number of documents representative of each country varies. This is not to be regarded as a problem since the study is based on the content of what is said about lifelong learning and how the concept is discussed, not on how many people discussed it. Most of the texts from the USA are from the Clinton era. When searching the Internet for documentation on lifelong learning in the USA the topic seems to have been "hotter" on the policy agenda during the Clinton administration than for the Bush administration. In Australia, on the other hand, lifelong learning is easy to find on the Internet and therefore seems to be an issue of ongoing importance. Even in Sweden documentation on lifelong learning is easily targeted. There are often references to the European Union lifelong-learning policies since Sweden is part of the union. The Swedish texts used in this paper are dated since the Swedish document study was made in late 2002. My experience tells me, however, that the content of the documents in terms of discourse is still relevant. The texts have been read and analysed in an attempt to understand how the concept of lifelong learning is used and understood by the writers and publishers as a discursive expression of the specific context in which they have been written. The analysis is built on the kind of language used in each document by looking at headlines, keywords (identified by me as the carriers of meaning and importance in the document), binaries (opposites used in the rhetoric to emphasise, e.g., what is regarded as good or bad, desired or not desired), metaphors and phrases, and other characteristics of the documents.

RESULTS

In this paper I have chosen to present some of the findings by relating them to the concept of lifelong learning itself. I have done this by separating the concept in its three parts: life, long and learning. I have grouped the central aspects and themes of lifelong learning found in the documents as they relate to these three words. This kind of approach catches some of the main ideas and values concerning lifelong learning, but naturally leaves out other aspects. The presentation of the results is based on a comparison of the three nations studied. This means that the different kinds of documents representing each country have been weighted and dealt with together, which gives a one-dimensional picture of each country that in some ways may be somewhat misleading. My attempt has, however, been to catch the main usage and debates of each country. Some of the documents are critical of the policies on lifelong learning in the source country, but in their critique they help identify the heart of lifelong learning as it is used in that country.

Life

The word life, as the first part of lifelong learning, seems to be dealt with in different ways in Australia, the USA, and Sweden. In Australia the emphasis lies on working life and community life. The individual learner is emphasised in many of the documents as being an important resource in society – and in community life as an active citizen. Social inclusion and social wellbeing is stressed within the Australian discourse. Lifelong learning is seen as a means to even out the socio-economic differences in society and improve the social conditions of the less-educated part of the population. Life in the American discourse focuses on working life and citizenry, but somewhat differently than in Australia. Lifelong learning is put forward as a resource for the individual to increase his or her employability on the labour market. By getting a better education, meaning a higher education, the individual is likely to get a better-paid job. Life quality is thus valued in economic terms. The citizenry issue is talked of in terms of as being able to make informed choices, which is supposed to benefit democracy. In Sweden life is also talked of as working life. Many documents also talk about lifewide learning, meaning life taken as a whole, including areas outside the labour market. Lifelong learning for one's own personal reasons, regardless of immediate company needs, is regarded as having a spill-over effect on working life as well.

Long

In Australia this issue is not discussed as a specific matter – if judged by the studied documents. The documents often refer to adults in general, but do not deal with the issue further. In the USA this seems to be a matter of great concern. It is clearly stressed that lifelong learning is for adults, but not just any adults. Since lifelong learning has, more or less, been given the meaning "adult education" in the USA, it has been structurally separated from compulsory education and regular postsecondary education. To be a "regular adult", in the sense

of getting access to the lifelong learning resources provided, you must either not attend postsecondary education or, after finishing postsecondary education have a part-time job and, in addition, be "doing lifelong learning". What it means to be an adult is thoroughly discussed and defined in the documents. In Sweden the life*long* aspect has been given extra consideration. As life does not start when one leaves school and becomes an adult, lifelong learning has to start early in life, "already in preschool", according to the rhetoric. Lifelong learning is something that goes on during one's whole lifespan, even as an elderly person after having left the labour market.

Learning

The discourses found in the documents on lifelong learning put the strongest emphasis on learning, or rather on one aspect of learning – education. The Australian documents focus on the importance of lifelong learning in terms of learning needed skills for the companies in the labour market. The words re-skilling and re-training are identified as important in the documents since the labour market is said to have changed, providing new kinds of jobs as a result. Besides specific company needs there is also a concern that people gain literacy; numeracy; and information-literacy skills, which are also described as computer literacy skills. Learning includes formal, non-formal, and informal learning, and education and training, all of which are seen as important for becoming a well informed citizen who takes an active social part in learning communities, learning cities, learning institutions, and organizations. Although there is a focus on fulfilling labour market and societal needs, there is a paradoxical emphasis on the individual as a customer. Australia is seeking to build a lifelong learning system, which is described as a network or partnership between different educational providers. It is then up to the individual to "buy" the kinds of educational or learning services he or she chooses. Many of the documents discuss the "problem" that people encounter as barriers to learning. This problem is mainly discussed as inner personal barriers. It is seen as vital for the individual to have a positive attitude towards learning and to have an identity as a "lifelong learner". The individual is supposed to be self-motivated and self-directed and able to invest time and money in their own competence development.

The American rhetoric is similar to the Australian in emphasising learning through education and training to meet labour market needs, but the individual and his or her future improvement of life chances are more specifically stressed. Instead of talking of reskilling, the term "upgrading of skills" is used. The words may mean the same thing in practice, but may sound different to people representing the different discourses, and to those who are supposed to engage in lifelong learning activities. The implication of reskilling could easily be understood as "all I knew and did before is useless and old-fashioned, I have to start all over again", whereas upgrading may give a feeling that "I did okay, but I need to learn some new skills". Learners in the USA are also seen as customers or clients. Educational providers offer learning and educational opportunities, often accessible on the Internet, that people can choose between.

The employability aspect of lifelong learning is clearly visible in the Swedish discourse as well. The direct link to specific company needs is not so strong, however. Education and learning is often regarded as a good in itself, something that gives status on the labour market almost regardless of the subject you may have studied. In Sweden the question about validation of knowledge and skills is a hot issue on the political and educational agenda. The question of upgrading individual competences is emphasised. Lifelong learning is often talked of as a tool in the political rhetoric, a tool that will be essential to gain economic growth and prosperity of the nation, companies, and individuals. Even in Sweden "lifelong learners" have become customers. This is a change in the Swedish identity. As customers, people are supposed to be active and make choices between different alternatives. This is a relatively new situation in Sweden where many people, especially those who are older, are not used to making these kinds of choices. By tradition they have been offered an alternative by the authorities or employers on a take-it-or-leave-it basis.

Table 1 shows the main trends within the three national discourses and how they are divided between the categories "life", "long" and "learning".

DISCUSSION

The metadiscourse on lifelong learning seems to have a powerful impact on the national discourses that were examined in this study. "Rationality", "Economy", and the "Individual" are strongly emphasised keywords of the western discourse, and are clearly expressed in all three of the studied discourses. The studied nations all stress the importance of strategic planning of education and learning as a vital tool for economic growth and prosperity. Adult education is seen as a most useful tool to be used on the national labour market in order to be competitive on the global market. The global economy seems to have become the new god or religion of our time.

Nations, organizations, and individuals give their votive gifts to the global economy in terms of commitment to education and learning – becoming "lifelong learners". Two old questions about life come to mind: What shall we live for? What shall we live off? The second question has

	Life	**Long**	**Learning**
Australia	▪ Working life and community life (social) ▪ The individual is responsible for his/her own personal development and is also an important resource within learning communities and learning cities	Adults	▪ Adapted to company needs and for social and democratic participation in society/community life ▪ Literacy, numeracy and information literacy skills ▪ Re-skilling/retraining ▪ Learners as customers ▪ Formal and non-formal lifelong learning systems/networks/ partner-ships offers learning opportunities ▪ Positive attitudes towards learning and being a "lifelong learner"
USA	▪ Working life and citizenry	"Regular" adults	▪ Useful knowledge to be employable on the labour market and having a higher income ▪ Literacy, numeracy and information literacy skills ▪ Upgrade skills ▪ Learners as customers ▪ Educational providers offers learning/educational opportunities ▪ Knowledge to make informed life decisions
Sweden	▪ Working life and personal development (lifewide)	The whole lifespan from preschool to elderly people	▪ Learning for employability ▪ Lifelong learning as a tool – a political idea of making Sweden a leading knowledge nation, which is argued to lead to economical growth and prosperity of the nation ▪ Upgrade skills ▪ Learning and education for personal growth ▪ Learners as customers ▪ Formal and non-formal education offers learning opportunities

Table 1. Patterns in national discourses about lifelong learning.

its obvious answer in the western discourse on lifelong learning by focusing on productivity, competition, and economic planning. Education and lifelong learning in terms of adult education seems to be an appropriate strategy to survive in a world of global competition. The reason for survival, the meaning of life in quality terms seems, to a large extent, to have been left out of today's discourse on lifelong learning, but not entirely. There are at least three reasons mentioned where education and lifelong learning is giving life some sort of meaning: for personal economic improvement, for social inclusion and equity, and for personal lifewide development.

The national differences in defining who is a "lifelong learner" raises a number of questions. Should lifelong learning be for adults only? And if so, then who is considered an adult? Or, on the other hand, should lifelong learning be considered an individual attitude focusing on learning that is fostered at an early age so that it becomes a natural part of a person's life for the rest of his or her days? The different opinions on whom lifelong learning is for reflect the deeper meanings that lifelong learning is given within each discourse. If lifelong learning is seen as something objectified, it is regarded as an article of consumption and may be bought by a customer – a lifelong learner – on the educational market. Today the market selling lifelong learning products only deals with education for adults. If, on the other hand, lifelong learning is seen as an individual attitude or desire to learn more, then it cannot be regarded as a product on the market. In that case, lifelong learning has more to do with *Bildung* and reflection than with the educational structures.

This paper has dealt with the metadiscourse and three national discourses on lifelong learning that are representative of western countries, and has not specifically studied other more specific discourses such as different political discourses, company and organizational discourses, etc. Comparing these kinds of discourses with each other and with national discourses and the metadiscourse would be an interesting challenge for further studies.

CONCLUSION

The three countries in this study, Australia, the USA, and Sweden all represent the so-called metadiscourse on lifelong learning which rests heavily on western neo-liberal values. In all three countries learning for working life and the global economy are taken for granted in the discussion on lifelong learning. Adult education and learning of different kinds are mostly regarded as products to be bought by customers (lifelong learners) on an educational market. This trend is apparent in all three countries, but in Sweden, and to a certain extent Australia, lifelong learning is also regarded as a personal *Bildung* project, that is development for personal reasons, not "just" to satisfy labour-market needs. Who is regarded as a "lifelong learner" differs between the countries. In the USA and Australia lifelong learning is mentioned in terms of adult learners, whereas lifelong learning in Sweden is supposed to start at young ages and to continue through the whole lifespan.

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STRANGE BEDFELLOWS? THE CHALLENGES OF COMBINING BUSINESS COMMUNICATION WITH IT SKILLS FOR COMPUTING DEGREE STUDENTS

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ABSTRACT

This paper discusses the development of a new *Professional Skills for IT Practitioners* computing degree course. The seemingly strange bedfellows – software and communication skills – were seamlessly integrated within a constructivist framework to form a course where students were encouraged to be active lifelong learners, engaging in optimum peer dialogue, collaboration, and reflective practice.

INTRODUCTION

UNITEC is a large institute of technology based in Auckland, New Zealand. The School of Computing and Information Technology (SCIT) offers programs from certificate to doctorate level. In 2001 the School of Computing and Information Technology reviewed its Bachelor of Computing Systems (BCS) degree program. As part of the resultant program restructure it was decided to combine two, first-semester, compulsory, 12-credit courses to form one, 18-credit course to commence in second semester, 2002. The two component courses were,

1) *Business Communication*, previously taught by the School of Communication,
2) *Packages*, previously taught by SCIT.

The new level-5 course was to be taught in the first semester of the degree by SCIT lecturers, and was to have the new title *Professional Skills for Information Technology Practitioners*.

Academic staff feedback on this proposed strategy was generally positive as Bachelor of Computing Systems student evaluations on the previous two separate courses had in the past been somewhat negative. *Business Communication* had been viewed with student suspicion on two fronts – its business focus and, in particular, its connection with the perceived "touchy-feely" world of communication. This course's perceived isolation from the real world of information technology was cause for concern from both a student and lecturer perspective. The *Packages course* had also received adverse evaluations with both students and some lecturers criticising the high emphasis on teaching basic software skills that many students had already mastered prior to entry to the degree.

The difficulty was deciding how to merge two seemingly very disparate courses – incorporating soft personal communication skills on the one hand and hard technical software skills on the other – into one holistic meaningful course.

THE COURSE DEVELOPMENT PROCESS

A development team of three lecturers was formed and planning for the new course commenced in April, 2002.

The team's research for course development included considerable dialogue and consultation with the lecturers teaching the higher-level degree courses and with industry representatives.

The team's brainstorming development process focused on commencing with a "blank sheet", creatively speaking, rather than attempting to artificially merge aspects of the original learning concepts considered to be outdated and inappropriate for the new course.

Each team member took responsibility for aspects of course development that particularly interested them or in which they had specialist knowledge. For example, one lecturer developed and managed the majority of the online aspects of the course, including the delivery software, and another team member researched and reviewed resource material that might be supportive, and prepared the course documentation.

CONSTRUCTIVIST IDEOLOGY

Constructivism is a learning theory describing the process of knowledge construction supported by the application of constructivist practices in educational environments and elsewhere. As Osberg (1997) so rightly points out, constructivism is not a spectator sport. Knowledge construction is indeed highly active and involves both cognitive (Cunningham, 1988, 1993) and physical constructions (Harel & Papert, 1991) of meaning, through the development of mental paradigms or schemas (Johnson-Laird, 1980) together with physical or virtual knowledge representations (Duffy & Jonassen, 1992; McLellan, 1996; Mones-Hattal & Mandes, 1995; Papert, 1993; Winn, 1993, 1994; Winn & Bricken, 1992; Winn, Hoffman & Osberg, 1995).

The constructivist-development approach for the new course aimed at ensuring a student-centred, cooperative learning environment, with a flexible mode of both delivery and assessment methodology in order to engage the students and enhance the meaning-making process. The focus was on active student learning activities, using kinesthetic, visual, and auditory modalities, fostering opportunities for dialogue and creativity and providing a rich, safe, and engaging learning environment (Brooks & Brooks, 1996). The course framework allowed the students to construct knowledge and understanding, with the lecturer's role being that of facilitator rather than knowledge-bearer (Zemelman, Daniels & Hyde, 1993). Towards this end, rather than being relegated to passive receivers of information, the students were to be actively engaged in their learning experience as much as possible (Negroponte, 1995; Cunningham, 1992; Kraft & Sakofs, 1989). As Osburg (1997) stated,

> There is great promise for deeper understanding and appreciation of the creative, generative process we call learning when a student is aware of scholastic expectations and understands how to effectively review and critique his or her own work (p. 4).

The cooperative learning course aims were further met by creating multiple opportunities for personal relations to facilitate the learning of both subject content and interpersonal skills within particular cultural and political domains.

Five stages of classroom social activity were particularly relevant to the aims of the course, the development of the learning activities, and the reinforcement of lifelong learning strategies:

1. engagement,
2. exploration,
3. transformation,
4. presentation,
5. reflection.

(Green & Reid, 1990)

In particular, Dewey's (1916) educational philosophy was considered highly relevant for today's professional IT world and thus to the development of this course. These significant dual advantages of social participation are,

- enabling student understanding of the intention and purpose of certain learning tasks and facilitating the internalisation of specific rules;
- facilitating production of cultural forms, rather than a simple reproduction of existing cultural forms.

COURSE TIMETABLING

There was considerable challenge in attempting to capture all professional skill elements for the successful IT practitioner in one course to be taught for only 4.5 hours a week, compared to the prior structure of two courses, each taught for three hours per week. It was decided at an early planning stage that the course would suit being offered in three 1.5 hour blocks as follows,

- one theory lecture for all students in a lecture theatre with good technological media support,
- one practical computer lab session for individual streams,
- one online session to be conducted using Blackboard software.

COURSE CONTENT AND DELIVERY

The primary course-content development criteria for all stages of the course were to ensure compatibility with an online delivery theme, and to ensure as well as strong links between communication skills and the real world of information technology.

A process of brainstorming and focusing on the vital attributes of a successful IT practitioner in

today's world of work produced the following broad, holistic course aims.

Students will be able to,

- participate effectively in a variety of conversations to make meaning, hear alternative perspectives and relay information both as an individual and as a contributing member of an information technology team across technical, gender, age and cultural boundaries;
- define a problem, determine, create, seek, and retrieve the required information from a variety of sources, and utilise this information to effect a solution using information technology to support the outcome;
- translate information needs into an information search strategy that is adaptable to the wide variety of information sources available;
- communicate effectively by exploring the integration of contemporary audio-visual communication tools and software applications with written and spoken communication to prepare presentations and technical documentation that possess both technical accuracy and user friendliness;
- develop a strategy for evaluating personal efficacy, as well as that of the team, in achieving a goal.

The same deliberation process also resulted in a list of essential topics that would form the basis of the final course prescription as follows.

- E-communication
- Email, internet, and chat rooms
- communicating across boundaries of gender, age, race, culture, and technological currency
- Intercultural communication at an electronic global level
- Technical writing and research
- APA referencing
- Internet searches
- Problem solving
- Software skills in MS Office suite
- Effective presentations, including use of IT media
- Effective teamwork
- Code of conduct and ethics
- Networking and interviewing
- Training in IT

The constructivist focus on collaborative learning and deep personal introspection into the learning process (Brooks & Brooks, 1993, 1996) was incorporated in the course framework from the outset. Online discussion-board dialogue and groupwork in the practical sessions and the first two assignments addressed the need for a strong collaborative element; and the reflective journal reporting for the third assignment addressed the need for personal student introspection.

The theory approach – teaching by example

In the theory sessions lecturers would act as role models to demonstrate effective presentation delivery, supported by sophisticated and engaging technological media in a formal-presentation setting. The lecturers would use interactive and group activities and discussions whenever possible to offset this formal learning environment. A visiting panel of experts, and a dynamic, entertaining guest lecturer, were also used to advantage.

A student-centred practical experience

Rather than following the previous *Packages* course learning method by expecting students to replicate mundane practical tasks with which they were often already familiar, two fundamental course aspects were addressed in developing and using students' personal relationship-building skills to share their IT skills and knowledge with their less-experienced fellow students.

The primary course aim of utilising the students' own existing knowledge to advantage was achieved by requiring students to transfer this knowledge through extensive groupwork in the practical sessions and via peer-training opportunities. The more experienced students were thus able to understand that their individual backgrounds, prior learning, and experience were valued and respected. The emphasis on collaborative groupwork in the practical sessions was particularly advantageous in developing the essential team-building skills for the IT industry. This approach was also highly appropriate for catering to the multicultural nature of the BCS students, many of whom had English as a second language.

Unlike the traditional classroom where cooperative learning has been vetoed or regarded as akin to cheating, constructivism views cooperation and mutual exploration as a high priority for effective learning. The focus on cooperative learning frees students to bounce ideas off one another and fosters learning-in-dialogue as opposed to the outdated concept of learning-in-isolation (Brown & Palinscar, 1985; Lewis, 1993). In this course development, therefore, a constructivist-learning-for-transfer approach was taken in allowing students to base their learning on enquiry, thus leading to deep understanding of the new concept and the development of mental content models to be applied elsewhere (Spiro et al. 1992a, 1992b). The benefits of a constructivist learning environment was to be achieved by facilitating holistic learning opportunities, enhancing collaborative and cooperative skills and allowing for metacognitive reflection (Brooks & Brooks, 1993; Resnick & Klopfer, 1989).

Doing it their (online) way

In the first semester of course delivery a great deal of student assistance and instruction in online learning was necessary, but ongoing refinement of the delivery methodology since then has reduced these demands considerably. An introduction to the Blackboard software is given in the first practical class and further, back-up, individual assistance is available to students as required. In addition, online learning guidance notes and copies of student models of previously-completed online logs are made available to students.

The extent of discussion-board contributions fluctuates considerably and it is necessary for the lecturers to constantly remind students that marks are allocated to this activity. Lecturer discussion-board monitoring is vital, especially in the early stages of the course when some students find it difficult to focus on the weekly discussion topic and try to chat to their peers informally, and often inappropriately.

The constructivist learning-for-transfer approach is utilised in the online delivery and assessment methodology in allowing students to base their learning on enquiry, thus leading to deep understanding of the new concept and the development of mental content models to be applied elsewhere (Spiro et al. 1992a, 1992b).

ASSESSMENT

In line with the active nature of constructivist learning, the assessment for this paper was designed to be ongoing, student-centred, holistic, integrated, and aimed at building understanding through reflection and iteration.

In order to remove the traditional educational emphasis on the lecturer as knowledge-bearer, it was decided to integrate student assessment into the theory and practical classes in a very practical way that allowed the students, as much as possible, to make their own choices of topic and delivery dates. A technical writing component as well as practical performance aspect was included in the first two assessment items to ensure those dual aspects of the course objectives had been achieved.

Three assignment assessment items were developed, each covering elements 1-5 of the course aims. These were as follows.

Assignment 1: Interpersonal Presentations, 35%
Assignment 2: Training in Information Technology Skills, 30%
Assignment 3: Online Log and Portfolio, 35%

CONCLUSION – EVALUATING OUTCOMES

Student course evaluation feedback has been favourable overall, with particularly positive comments on the flexibility afforded by the online course component. Student feedback in the first semester of operation focused on difficulties with understanding the online course component and with coping with the weekly online log requirements and related workload. In response to this, lecturers gave a great deal of individual and collective support to students both one-on-one and via specific workshops, handouts, and online notes in order to encourage students in what was a new learning experience for many. The lecturing team also constantly discussed and reviewed the online delivery methodologies and amended the Blackboard delivery format and online log assignment considerably in order to facilitate student understanding and competence. Following ongoing improvements to the learning materials, systems, and assignments, student evaluations have been far more positive and are expected to be even more favourable at the completion of one year of operation.

In addition, the lecturers teaching on this course are finding the course both challenging and rewarding to teach. They find the new course far more meaningful and appropriate for the BCS students. The lecturers particularly value the course's flexible delivery opportunities and the holistic, integrated, student-centred learning approach that acknowledges and utilises students' prior life experiences, knowledge, and skills and fosters personal reflective practice and a lifelong-learning focus. This course allows students the opportunity to master essential learning tools to support them in their future professional and personal lives.

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RESPONDING TO PLAGIARISM: GATEKEEPING OR BRIDGE BUILDING?

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ABSTRACT

This paper uses narrative to explore responses to plagiarism by culturally and linguistically diverse (CALD) students. I conclude that academic integrity involves much more than the (Western) educator acting as a gatekeeper to knowledge and its construction. Rather, it is a lifelong-learning process involving mutual exchange and a commitment by all parties to ethical conduct.

INTRODUCTION

Educators of culturally and linguistically diverse (CALD) students have a responsibility to demonstrate respect, sensitivity and cross-cultural awareness as they work with students in the new academic environment. At the same time, they have a duty to maintain the standards of Australian higher education. As the issue of *soft marking*, particularly in relation to plagiarism by international students, has recently gained centre stage in the media (Giglio, 2003, p. 23; Lane, 2003, p. 24; Spender, 2003, p. 36; Sinclair, 2003, p. 38; Illing, 2003, p. 31) and in the academy, this contradictory position has begun to be tentatively explored. An online forum, "Perspectives on Plagiarism" on the electronic journal EJ-TESL, sparked numerous responses from academics, varying from those with an educative approach to teaching Western academic conventions, to those who blame the higher education sector's low language-entry requirements, and those who advocate a more punitive approach (EJ-TESL, 2002).

The Centre for Study for Higher Education (CSHE, 2002) presents three aspects of plagiarism that need to be considered by academics and administrators pursuing potential academic misconduct. The first is the student's "intent to cheat", with "deliberately presenting the work of others as one's own" placed at the extreme, punishable end of a continuum. The second aspect is "the extent of plagiarism" with "downloaded essay handed in as own paraphrasing" again representing the extreme end of the continuum. The third consideration is the "possible responses to plagiarism" which involve the first two aspects, and take the form of either educative or punitive strategies. The report also refers to the "special case of group work" and warn that this type of project may place students at "particular risk of unintentional plagiarism" (p. 40). Based on my experience as a lecturer of CALD students at an Australian university, I will use a narrative approach in this paper to explore these aspects of plagiarism.

METHODOLOGY

"Teacher narrative" is an established practice in educational practitioner research, and is a useful approach for exploring the ethically vexing issue of plagiarism. Not only does plagiarism itself challenge Western notions of academic integrity and ethical practices, but investigating and reporting plagiarism raises complex ethical issues for the practitioner-researcher. Issues of confidentiality (of students, lecturing staff, and even teaching materials) assume centre stage, and it is almost impossible to write a traditional case-study analysis without breaching confidentiality in some way. The narrative approach frees the writer to explore the issue without identifying or incriminating stakeholders.

The following story is a fictive composite drawn from a number of real-life cases. Like Le Guin's 1985 science fiction novel, which sets out to blur factual reporting and storytelling, the facts of my story "seem to alter with an altered voice" (Le Guin, as cited in Bloom, 1998, p. 61) , and this is because I am exploring my own sense of "academic schizophrenia" – the contradictory position of both striving to ensure the maintenance of Australian academic standards, while simultaneously being committed to a genuine intercultural relationship, based on mutual respect and exchange, with students.

Many researchers, such as Barone (1992); Reid, Kamler, Simpson, and McLean (1996); and Clandinin and Connelly (1998) regard teacher narratives as a vital research tool that allows the writer to adopt "an openly political stance" (Barone, 1992, p. 144). However, other

commentators observe that the narrative genre (particularly autobiographical narratives) confine the writer to creating victory narratives, with Convery (1999) suggesting that the narrator gains influence over her audience through disclosing personal, sensitive information. I will pay heed to these warnings, even as I embrace the philosophy of Neumann and Peterson who ask, "What will we learn if we view research as a personal and social phenomenon – as an experience within a researcher's life?" (Neuman & Peterson, 1997, p. 3).

In attempting to integrate my research on plagiarism with my daily practices as a teacher of CALD students, I will follow Lyons' and LaBoskey's 2002 framework for narrative practices (2002, pp. 21-22). According to these authors, for narratives to be "explemplars of inquiry" they need to: be intentional reflective human actions, be socially and contextually situated, engage the writer in interrogating aspects of teaching and learning by "storying" the experience, affect the author's "sense of self", and involve the construction of meaning. Using this framework as a basis, the narrative approach in this paper combines a number of case studies involving students who have been accused of plagiarism and then proceeded through UniWestEd's[1] formal academic misconduct process.

TWO STORIES IN ONE

Eric[1] is a 20-year-old, 2nd year business undergraduate from Singapore. He was a student in my undergraduate course, ESL for Business[1] at the University of Western Education (UniWestEd)[1]. Throughout the semester I came to know Eric because of a number of situations that required my intervention. In the first instance, while handing back the first assignment to students in the whole-of-class lecture, he came forward and informed me that his assignment seemed to be missing. I checked my records and could not locate a mark. I apologised to Eric and asked him to bring a copy to my office as soon as possible so that I could mark it. He assured me that, in keeping with UniWestEd policy, he had kept a copy and this would be no problem.

[1] With the exception of the author, the names of people, courses and institutions referred to in this paper have been fictionalized.

Two weeks passed, and I realised that Eric had neither re-submitted the assignment, nor attended his weekly tutorials. I sent a reminder email but did not hear back from him. By now the next assignment (a short research essay) was almost due and I was beginning to doubt Eric's integrity. I encountered him in the corridor and expressly asked why he hadn't dropped off the missing assignment. With downcast eyes, he said that he had forgotten and would get the assignment to me the next day. Somewhat to my surprise, I received the assignment and it was of a reasonable quality. Unlike many other students in the course, Eric clearly had a good command of English and an understanding of UniWestEd requirements in terms of presentation and layout.

The following week Eric sent me an email requesting an extension on the research essay. His excuse was that he had a number of assignments due at the same time and had not been managing his time well. Despite my earlier reservations about Eric's honesty, I followed my usual policy of permitting an extension and of providing advice on how to avoid this situation in the future. When the essay did finally come in, it was quite good. A clear argument had been developed and appropriately referenced. This paper received a mark of 70% (i.e., Credit +).

For the final assessment, students were required to collaborate on an accounting topic, present the case to the class, and then submit an individually-written report. The early collaboration and presentation was designed to provide support to those students without an accounting background. However, as the main focus of the course is to facilitate improvement in written English, each student was required to take full responsibility for his or her written report.

Unclear guidelines for group work create the potential for plagiarism

This approach had actually caused some confusion the semester before, with one group of students submitting identical reports. They had assumed that they would be responsible for one section each in the report, just as they had done in the oral presentation. In my opinion it was an understandable mistake to make. However, after seeking advice from senior staff, I was instructed to follow UniWestEd policy and

proceed to a formal academic misconduct inquiry.

At the inquiry I found myself in the invidious position of a being both accuser and advocate for the students. I was pleased when the panel agreed with my assessment that the students had not intended to plagiarise. However, this led one colleague to comment afterwards that, clearly, I had a very "soft" attitude towards plagiarism.

Making assessment expectations clear

As a result of this incident, I was particularly careful to explain the nature of the written report in the semester in which Eric was taking the course. Full guidelines were provided in the course outline, online, and in the lectures, and I was pleased to find that each group submitted individually-written reports. The standard of the oral presentations was exceptionally high, with Eric's group evidently committing many hours to practice and rehearsal. They achieved a mark of 85% (High Distinction).

Marking of the final reports was divided between a number of staff and it was only by chance that I found myself marking Eric's paper. Within moments, I recognised the report as identical to the one submitted the semester before by the group who had confused the instructions. I retrieved the filed copy and it was a perfect match. I was flabbergasted. Eric had demonstrated satisfactory performance in every assignment submitted during the semester. He didn't have a problem with English, and as this report was the result of group discussion rather than research there was absolutely no reason why he would need to plagiarise from sources or copy anyone else's work.

Following UniWestEd policy

I immediately called him to arrange a meeting. I also called the three students from the semester before and asked them to see me. Following UniWestEd policy, all the students were informed that we would be discussing potential plagiarism and that they could bring along a support person. I also arranged for a senior staff member to be present. As it turned out, the three students met with me first, and all seemed genuinely surprised and confused as to how Eric's report was identical to theirs. None of them even knew Eric. They repeatedly assured me that they had not given or sold their report to anyone. I believed them, but it just didn't make sense.

When Eric came to see me, he also seemed confused. What was the problem? He had not copied from books or the Internet. When I asked him what material he had used as the basis of the report, he responded, "Our group discussions". After a long and torturous conversation, I finally produced the copied report and informed Eric that he and the other three students would have to attend an "Academic Misconduct" meeting, as I had been unable to determine how it was that the reports were the same. At this point, for the first time, Eric seemed contrite. He was very concerned that the other three students did not get into trouble. He finally admitted what had happened.

Last semester, with a number of courses listed as "Incomplete" or "Fail" on his academic transcript, he had decided to enrol in "ESL for Business" the next semester, even though it was clearly designated as a 1st year subject. Coinciding with this decision, he had inadvertently come across a report written for this subject in the rubbish bins in the computer barns. It was clearly of a very high standard, so he kept the report on file, just in case the assignment topic had not changed the following semester. When he found that the topic was the same he decided to submit the report, counting on the odds that whoever had done the marking last semester would be unlikely to remember a specific report, and even if they did, would be unable to prove anything. For him, it was the worst sort of luck that I had kept a copy of the report on file.

Confronting my own misconceptions

It was difficult for me to listen to this explanation without getting agitated. More than the outright cheating, I was upset that Eric had chosen this route to good grades when he had already demonstrated his own ability to do it the honest way. Having identified plagiarism on numerous occasions before, I had come to the conclusion that most students resorted to plagiarism because they either lacked the language and/or academic skills, or because they had over-committed themselves to other activities such as paid work (this conclusion is supported by the work of researchers such as Zobel and Hamilton, 2002; and CSHE, 2002). I had never encountered a high-achieving student such as Eric who seemed to have made a

conscious decision to cheat. However, Marsden's (2001, p. 29) research suggests that, in every way other than the discipline area, Eric (male under 25, enrolled full-time in a first-year course, with high grade-orientation but low learning-orientation) fits the "cheat" profile.

Although I am usually empathetic towards CALD students accused of plagiarism – largely because the construction of knowledge is so culturally specific (see Pennycook, 1996) and many students come to UniWestEd not having had a full induction to Western approaches including the attribution of sources in scholarly work (Ballard & Clanchy, 1997) – in this case, I felt like my heart had turned to stone. Eric's behaviour was simply beyond my understanding, given the focus in the course on developing academic skills such as note-taking, summarising, paraphrasing and referencing, as well as very explicit details about UniWestEd's policy on plagiarism. When I asked Eric to explain his actions, he could only say that he did not believe his own work was of a high enough standard. He further explained that he needed to "get the maximum mark possible" in this course to push up his grade point average.

I informed Eric that the matter was now out my hands and that I would be notifying the Head of Faculty of our meeting, and that Eric would be invited to attend a formal inquiry in the near future. For the first time in my teaching career I felt no ambivalence about pursuing UniWestEd's policy. I believed that cultural and language issues were not at stake here, but that a fundamental breach of academic integrity had occurred.

Again, I found myself on a panel with the colleague who had viewed my approach to dealing with plagiarism as "soft". This time, rather than advocate for the students, I maintained a very clear position that the maximum penalty allowed by UniWestEd policy should be applied. Eric said little during the meeting, and the committee unanimously agreed to a 12-month suspension.

Making sense of the stories: Reflection, interrogation and revision

In the case of the three students who confused the group-work instructions, the CSHE (2002) report appears to concur with the outcome determined by UniWestEd ("focus on education rather than punishment" p. 43). Just as the report suggests, group work does require special consideration because students, both local and international, are "often uncertain about where co-operation and collaboration stops, or should stop, and where copying begins" (p. 40). In addition, the CSHE suggested response of "penalise quickly and appropriately" applied to Eric where there had been "entirely deliberate, extreme plagiarism".

My narrative seems to have ignored Convery's warning not to write a "transformative epiphany" (1999, p. 134); I have written myself as the hero of a plot that could be easily resolved through my own ethical and scholarly efforts. The story as I've written it seems so simple, and the application of CSHE's "plagiarism continuums" easily applied. The narrative suggests a confidence in identifying and responding to plagiarism (in all its various guises) that did not and does not exist in practice.

What *really* happened involved two semesters of distress for everyone involved. The three students who had to face the academic misconduct inquiry stood outside the meeting room, wringing their hands, crying and imploring me to advocate for them. I did so, nervous that I might have been wrong, and that my colleagues would lose respect for me. When the students were finally absolved of any wrong doing, they hugged and cried and thanked me – but could never look me in the eye again. To have to call them the following semester regarding Eric's copied paper was a gut-wrenching experience, as I could hear each of them on the other end of the phone gasp with fear and disbelief. Worst of all, when Eric submitted the copied paper, I began to doubt the honesty of the three students and my own judgement all over again.

While my story states that Eric "said little" during the meeting, I have failed to share the numerous emails and meetings with Eric, where he begged me not to pursue the matter. I have not recounted what it really means for a teacher (and her relationship with her students) when her "heart has turned to stone". Why does this particular form of plagiarism have the capacity to stir such strong, and often dogmatic, emotions? Who did I become when I continued to refuse Eric's plea for leniency? How will this affect my dealings with students in the future? Am I the right person to be teaching CALD students? Each of these questions remains

unanswered, and at times, in managing other academic issues, I get a glimpse of the hard-hearted woman who Eric will remember, probably with some bitterness, well into the future.

I have not mentioned the fact that in being suspended from study for a year, Eric had to return to Singapore and face both his parents and potential unemployment. I have failed to acknowledge the huge emotional work of dealing with a student who, despite having the skills and attributes necessary to succeed, is under so much pressure to do well that he would choose to cheat rather than trust his own abilities. Little mention has been made of the many sleepless nights I have endured over the last few years, wondering which is the best course of action. Should I take the educative or punitive approach? As Briggs (2003) has noted, "…the rush to condemn acts of plagiarism risks riding roughshod over a problem that may turn out to be far more complex – behaviourally, ethically, conceptually, and even linguistically – than has been previously granted" (p. 19).

Whose learning?

It seems to me that in identifying and responding to plagiarism, it is the academic who learns the most. Obviously, for those honest students who have committed inadvertent plagiarism, the educative process (in a supportive environment) will ensure that they do not make the same mistake in the future. However, for those students who view dishonesty, plagiarism, and cheating as part of the academic tool kit, it is difficult to see how they will "learn" through either the educative or punitive approach.

On the other hand, in making a commitment to identify and appropriately respond to plagiarism, my own practice has become more reflective, self-critical, and open to engagement with a range of approaches not necessarily provided in the standard UniWestEd policy. Throughout this (often heartbreaking) process I have learned to change assessments each semester, make instructions explicit, follow up misunderstandings, keep copies of any suspicious or unusual assignments, maintain close relationships with students, and to keep in contact with other lecturers. I no longer view academic integrity as a "yes" or "no" proposition.

Not all plagiarism is a "crime" which must be punished, and neither is all plagiarism a cultural misunderstanding for which allowances must be made. I have learned to treat every case individually, to follow policy, but trust to my own judgement too. I have grown as a teacher/lecturer/facilitator/educator to the point that I am not intimidated by colleagues' judgements, although I have learned the value of always seeking advice from those whose opinion I respect. There is certainly a difference between misunderstandings and cheating, and there will always be some people, regardless of cultural or linguistic background, who are dishonest.

CONCLUSION: Constructing the future

By using Lyon's and LaBoskey's (2002) framework I have attempted to write a teacher narrative which is reflective, situated, interrogative, re-visioning (of myself), and constructive. This approach has provided me with a means of exploring my own contradictory position as both advocate for and accuser of students who have plagiarised in their academic work. This position is made doubly difficult by my role as an ESL (English as a second language) teacher of culturally and linguistically diverse students - many of whom come to UniWestEd with little or no experience of Western notions of knowledge construction. In considering how students might learn about plagiarism and how to avoid it, I have come to the conclusion that this process is more enlightening for academic staff than for students.

I have started to see that academic integrity involves much more than acting as a judge or gatekeeper of academic standards. For me, academic integrity is a lifelong learning process predicated on a dual commitment to cross-cultural understanding and to my own cultural values as they relate to knowledge and learning. If Australian universities are to continue marketing their education services to full-fee paying international students, there will need to be a commitment at every level of the higher-education sector to engage with the complex issues of language, culture, and learning backgrounds. Policies will need to demonstrate a degree of respectful flexibility while simultaneously sending a clear message to dishonest people, both local and international, that knowledge is something to create rather than steal.

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AUTHENTIC INVOLVEMENT: PREPARING PRESERVICE TEACHERS FOR LEADERSHIP ROLES IN CHANGING TIMES

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ABSTRACT

This paper presents an analysis of preservice teachers' reflections after completion of professional-practice learning experiences in environments characterised by diversity and complexity. Findings support the value of these experiences in the development of new knowledge and leadership skills, increased cultural awareness, and enhanced professional identity.

INTRODUCTION

Ongoing concerns regarding the effectiveness of teacher education programs to prepare preservice teachers for future environments have provided the impetus for change to educational practices and approaches to learning, curricula, and pedagogy (Beare, 2001; Gale & Densmore, 2003).

New and flexible approaches are required to encourage the development of high levels of competence and to provide opportunities for the stimulation of innovative practices (Bourner, Katz, & Watson, 2000; Latchem & Hanna, 2001). The challenge is in creating learning environments that provide preservice teachers with opportunities to become autonomous learners who are able to think critically and be open-minded, and who have the capacity to be creative (Jackson, 2003). This is essential if

preservice teachers are to become dynamic leaders for schools of the 21st Century (Cumming & McCulla, 2000) and be able to construct alternative visions of teaching and learning (Fullan, 2003).

Kalantzis and Cope (2001) argue that the emerging shape of the new learning environment will be underpinned by the need to create "a kind of person" with specific dispositions and orientations to the world, rather than one who has command of "a body of knowledge" (p. 3). Such persons will "be able to navigate change and diversity, learn as they go, solve problems, collaborate, and be flexible and creative" (p. 3). In this environment, "new learning will be increasingly interdisciplinary, requiring deeper engagement with knowledge in all its complexity and ambiguity" (p. 3). These changes are now commonly reflected in terms such as "the knowledge society", "the new economy", "the high-tech economy", "the twenty-first century economy", "a culture of lifelong learning" (Kalantzis & Harvey, 2003, p. 24). Within this context, education, both formal and informal, provides the key for individuals to manage their future professional and personal development. At the heart of this process is a valuing of the concept of lifelong learning.

THEORETICAL CONSIDERATIONS

Preservice teachers often regard the most important and challenging component of their course that section which involves professional practice. During that time they are required to deal with a multitude of situations and problems within the school environment, including inter-personal relationships, the special needs of individual students, planning effective teaching and learning strategies, and implementing appropriate management strategies. Achieving success during these experiences has been closely linked to preservice teachers' sense of identity, level of motivation, and overall satisfaction (McCormack, 1996).

Research suggests the provision of opportunities that allow choice and freedom from close supervision; participation in complex, non-routine and challenging tasks; and exposure to a variety of other individuals – particularly those from varying cultural backgrounds and experiences, encourage an increase in intellectual flexibility and reflective practice (Smylie, 1995) and help to break down the continuity of cumulative socialisation that often dates back to their own, earlier school years (Tillema, 1997). Further, meaningful engagement in diverse school communities should assist preservice teachers to gain a deeper understanding of the differing values placed by these communities on such factors as educational leadership, achievement, educational goals, expectations, and self-worth. More broadly, there should be greater opportunity for the development of an understanding of the interdependence of the purposes of learning, such as social inclusion and integration, personal fulfilment, and increased employability in a changing world (European Association for the Education of Adults, 2003).

This paper argues that engagement in professional practice experiences across a range of differing contexts, especially international placements, assists in building preservice teachers' conceptualisations of educational change within a global context, promotes cultural understanding, and stimulates thinking about contemporary issues related to pedagogical practice. In this context, "difference and diversity will increasingly be viewed as assets to be harnessed, rather than problems to be overcome" (Kalantzis & Harvey, 2003, p. 27). Further, through increased opportunities for study and comparison of diverse educational systems and programs, preservice teachers are likely to be challenged to develop new skills, become generators of knowledge rather than mere recipients, solve unusual problems, and assume a more proactive stance towards their own learning, thereby becoming more confident in dealing with innovatory practices and able to appreciate the underlying conceptions of change (Fullan, 2003, p. 17). Preservice teachers are thereby self-directed and accept prime responsibility for the development, implementation, and evaluation of their own learning experiences, while able to work collaboratively with others for the production of creative outcomes (Broadbent, 2002).

METHODOLOGY

Context to the study

Third and fourth year preservice teachers enrolled in a Bachelor of Education (Primary) course at one Australian university are required to participate in a range of professional practice experiences over the four year period, including single-day and block experiences completed in classrooms, both nationally and internationally, and a five day or 40hr Community Learning

Program (CLP) completed in a learning environment other than a primary classroom. Participation in these alternative educational settings encourages preservice teachers to extend their understanding of "the pluralistic and accessible array of opportunities for education throughout the lifecycle" (Holford et al., 1998, p. 11). In recent years, these preservice teachers have been encouraged to undertake an international professional practice placement if possible. As this requires considerable personal expense, only a small number of them are able to take up this option, although each year the number of participants increases. Recent placements have been in Spain, Fiji, Tonga, Croatia, Singapore and other countries. Table 1 lists the placements described in this study.

Year	Sex	No	Location
3	M	1	Brantford Christian School Ontario, Canada
4	F	1	Vaughan First & Middle School, Harrow, London
3	F & M	2	Central Primary School, Port Vila, Vanuatu
3	M	1	**Yirakala Community Education Centre, Nhulumbuy, Northern Territory**
3	M	1	Primary School, Apia, Samoa

Table 1. Preservice teachers' international and remote placements, 2002-2003.

It is expected that through engagement in these authentic learning experiences, preservice teachers should be able to:

- meet intellectual challenges using a range of cognitive processes, such as problem solving, critical thinking, and creativity;
- be reflective, independent, and flexible thinkers who are open to new ideas and ways of learning;
- be open to and be able to manage complexity and change;
- engage in the community in ways that promote inclusivity.

Approach to the Research

The following are brief case studies of five preservice teachers, each of whom undertook professional practice in a remote or international setting; included, is a qualitative analysis of their reflections on the experience. The adoption of a case-study approach appeared particularly relevant to this project because it provided an opportunity to study in-depth a "specific instance" (Nisbet & Watt, 1984, p. 74). Data gathering was conducted after completion of preservice teachers' professional practice and comprised semi-structured interviews and written reports, including classroom photographs and other visual resources. Pseudonyms have been used to protect the identity of the students. The semi-structured interviews focused on:

- the significant learnings that resulted from the professional practice,
- the impact of these experiences on the professional learning of preservice teachers,
- the benefits/non-benefits of completing a professional practice in an alternative learning environment.

RESULTS AND DISCUSSION

Case studies and significant learnings

Case Study 1: Preservice teacher in 4th year of B.Ed (Primary) course.

Cathy was fortunate to be offered a Time-Plan Fellowship to participate in a 12-day Teaching Practicum at the Vaughan First and Middle School, Harrow, London. She completed her practicum in a Year 1 class comprising 29 children from diverse ethnic backgrounds including Anglo Saxon, Indian, Sri Lankan, Pakistani, and Arabic. The school had a teaching complement of 47 teachers, including 24 special needs teachers and teacher assistants. Prior to this practicum, Cathy's teaching experiences had been completed in primary schools in Australia. In regard to the significant learnings resulting from the professional practice, Cathy found the 12-day intensive practicum to be enriching, from both a personal and professional perspective. By the end of the practicum she had gained valuable insight into the operation of a British primary school and felt she was now more able to:

- analyse the differences between the British and Australian school systems;
- view the Australian curriculum in a new light, with greater appreciation of the latest

teaching and learning research conducted by Australian educational institutions;
- recognise the efforts by the teaching profession in Australia to continually update knowledge and resources to equip children with the most appropriate education systems;
- recognise and appreciate the cultural diversity within the classroom and reflect on the different techniques available to reach children from all backgrounds.

Case Study 2: Preservice teacher in 3rd year of B.Ed (Primary) course.

Stephen completed his 15-day practicum in an upper primary class of 47 male Samoans at a boys' primary school in Apia, the capital and the only urbanised city in Samoa, on the island of Upolo. The school had a total enrolment of approximately 1000 students and was run by the Samoan Brothers. One of the first observations made by Stephen was that his classroom was "approximately the right size to fit 25 students comfortably"; this was accompanied by the sudden realisation that he had "46 students on that first day". By the school's standards, the class was considered to be of average size, but it was not unusual for some classrooms in Samoa to accommodate up to 90 students. Stephen believed his time at this school had provided the opportunity to:

- develop an awareness of cultural differences and the impact of these on attitudes towards teaching,
- analyse and implement a range of behaviour management techniques and to reflect on the effectiveness and appropriateness of these for the classroom,
- gain a deep appreciation and understanding of a Polynesian culture in a social context,
- develop and create alternative ways of engaging children in learning activities using limited resources,
- reflect on and improve oral and other communication skills.

Case Study 3: Preservice teacher in 3rd year of B.Ed (Primary) course.

Matthew selected the Yirakala Community Education Centre, Nhulumbuy, Northern Territory, to complete his 17-day practicum. The Centre has a total enrolment of 150 students and is located in Aboriginal-owned country on the Gove Peninsula. Matthew was keen to gain experience in a remote Aboriginal community in order to further his interest in Indigenous education and to have the opportunity to return to his cultural roots. This area in the Northern Territory is home to the Yolngu tribe, who are considered to be among one of the most traditional Indigenous groups in Australia. Community Education Centres (CECs) were established in Australia in the late 1980s to provide educational services to both children and adults in remote communities. During the practicum, Matthew alternated between two composite classes: a mixed Year 1/2/3 class and an all-boy Year 5/6/7 class. Matthew believed this professional learning had been both personally and professionally fulfilling and challenging and, although faced with a multitude of complex issues – especially in regard to cultural differences, he regarded the experience as beneficial because it had led to:

- an increase in his confidence and ability to handle multi-age, multi-level classes while acknowledging he still "has a long way to go";
- greater recognition of the difficulties and sensitivities required when teaching in an Indigenous community;
- a deeper awareness of the importance of prior experience in mainstream classrooms before embarking on a career in Indigenous education;
- further opportunity to learn more about his Aboriginality and cultural birthplace.

Case Study 4: Preservice teacher in 3rd year of B.Ed (Primary) course.

John completed his 17-day practicum in a Year 1 class at an International Christian Primary School, Ontario, Canada. This decision was based on his long-term goal to establish a Christian school in a third world country. The school comprised mainly Canadian and Korean students. As the professional practice fell during a northern hemisphere winter, John had some unique experiences to relate in regards to the impact of weather and wildlife on the school program. John believed he had learnt much from his international experience, including:

- a greater understanding of the Christian Schools' International network and its activities and resources;
- the ability to develop and apply new and different approaches during his teaching practice;
- a deeper awareness of the differences and similarities between teacher education courses in Australia and Canada and,

consequently, the capability to evaluate the effectiveness of the courses;
- the nature and impact of climatic influences on the daily routine of the school.

Case Study 5: Preservice teacher in 3rd year of B.Ed (Primary) course.

Sandra chose to complete her 17-day practicum at the Central Primary School, Port Vila, Vanuatu to broaden her knowledge base of curriculum and teaching styles and, thereby, to enhance her ability to teach more effectively in a multi-cultural environment in Australia. When compared with Australian schools, Sandra regarded the Central Primary School to be of a low standard. The school had very little in the way of teaching resources, there was no evidence of technology use in the classroom, and the school relied on inadequately trained teachers who had only a basic understanding of the relationship between curriculum documents and unit planning and teaching. Nevertheless, Sandra found the experience provided her with a number of significant learning features, including:

- the development of skills that would be transferable to classrooms in disadvantaged schools in Australia;
- a deeper appreciation of the factors impacting on children's motivation to learn, especially in regards to the correlation between the number or quality of classroom resources and the desire to learn or the quality of the learning process;
- an increase in her sense of personal and professional identity, especially in regards to her ability to cope with the many challenges presented to her during her practicum in this disadvantaged educational setting.

Impact of these experiences on preservice teachers

All preservice teachers believed the opportunity to participate in a professional practice in an international or remote setting was beneficial – both personally and professionally – as the experience provided many challenges not characteristically found in urban classrooms in Australia. Although they faced difficulties in regards to the weather, the lack of resources, difficulties in communication due mainly to cultural differences, restrictive classroom environments, and other curriculum and pedagogical issues; all were able to manage these diverse and complex environments in creative and innovative ways. Each of the preservice teachers managed to learn from their experiences, converting negative situations into positive outcomes. At times, humour was useful, as expressed by Stephen who reflects on his teaching to a very large class in a restricted space:

> Imagine 50 kids all participating in a lesson from the same board. At times I felt like the host of a game show! [Stephen]

The cultural diversity of the schools selected provided significant challenges for the preservice teachers in regard to communication, interpersonal relationships, and the use of effective teaching and learning strategies. During his time at the Centre, Matthew found he was extremely challenged by the differences in culture and language when compared to his previous teaching experiences. Initially he found he was "very much out of my depth" and came to the realisation that intimate knowledge of the students, their language, and their culture was essential for effective teaching in this environment. From the analysis of the preservice teachers' reflections, dealing with these challenges stimulated a deeper awareness of the needs and values of the communities in which they worked and, in some cases, led to a strengthening of their commitment to social justice principles. Although on a number of occasions the attitudes and values held by the schools differed to those held by the preservice teachers – including the schools' approaches to behaviour management, selection of teaching and learning strategies, and emphases given to specific elements of the curriculum – there was general acceptance of these differences. However, sometimes there came a point where the strength of commitment to personal and professional values was in stark contrast to school values, and the dissonance became too great. As Stephen's comment illustrates:

> The system of corporal punishment is so entrenched that it is expected and it may mean other management attempts will not work. I will never participate in this myself though. [Stephen]

The opportunity to engage with others in educational settings characterised by diversity and complexity has provided these preservice teachers with the opportunity to make a comparative analyses of their prior professional

learning experiences in Australia and their more recent, alternative, learning experiences in remote or international settings. From the comments made, this appears to have encouraged a more reflective approach to their professional learning. As Cathy states:

> My time in London has been a most rewarding and insightful experience. I think it has been a truly wonderful professional development. It has also taken me on a tremendous learning curve. I have learnt not only about a new school system but have begun to view my own country from a new perspective. [Cathy]

Stephen reflects on his learning:

> I learnt a very important lesson about teaching during my time in Samoa. Teaching is not just about resources, theories of learning, terminology or even some areas of unit planning; it is about connecting with your students and understanding each other. [Stephen]

Some evidence exists to support the view that engagement in remote or international professional learning experiences can be transformative, as well as cumulative. An example of this is Sandra's heightened awareness of the depressing needs of many school communities in other countries who are working hard to provide a reasonable level of education to the children in their care. This she found to be in stark contrast to the relatively affluent Australian schools she had encountered when completing her professional practice and personal schooling in her homeland. After her experience in Vanuatu, she organised a shipment of resources from Australia to the school. Stephen's experience also prompted him to "devise a plan" that involved "sending books over to help" [ease the problem in Samoa].

While the results of this study are necessarily limited, there appears sufficient evidence to suggest that professional learning experiences in remote or international settings can make a significant contribution to preservice teachers' personal and professional learning. All preservice teachers reported positive outcomes in their descriptions of their professional learning experiences, and they demonstrated a growing awareness and development of themselves as teachers and citizens of the world. In light of these results, further research would be useful in relation to the nature, structure and scope of all professional practice components of teacher-education courses.

CONCLUSION

Kalantzis and Cope (2001) and others have argued that there is a pressing need to reconceptualise the way in which teachers are prepared to meet the challenges of their future profession. This paper has supported this view and shown that professional practice can provide opportunities for preservice teachers to broaden horizons, become authentically involved in diverse learning communities, and thereby form the basis upon which they can build new knowledge, make informed decisions, and develop attitudes that reflect acceptance of the need for innovation and change within education. As demonstrated in the case studies presented in this paper, participation in a range of professional practices, including remote and international settings, creates one avenue through which preservice teachers can become more self-directed and autonomous learners; assume more responsibility for the development, evaluation, and reflection of their personal and professional learning; and, importantly, be challenged to become more adaptive in changing circumstances.

Learning that is both challenging and satisfying is essential to self-fulfilment as preservice teachers are stimulated to learn more about themselves and about the contribution they can make to the broader educational community. The increasing preparedness of preservice teachers to travel to remote and international placements and be challenged by their professional learning experiences provides evidence of their growing commitment to, and engagement with, the wider, global education community. As Margot Cairnes (2003) highlights, "change comes when we share our power and develop our humanity. As we change, one person at a time, we improve the lives of those we lead" (p. 32). This constitutes an important element in the preparation of preservice teachers if they are to become dynamic and enthusiastic leaders within school communities and classrooms in the 21st century and if they are to be committed to the concept of learning throughout life.

While the five case studies presented in this paper illustrate the learnings of preservice teachers from an Australian perspective, it is

hoped the model will generate broader interest and relevance beyond the Australian context.

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ONLINE DISCUSSION – ASSISTING PRESERVICE TEACHERS IN THE DEVELOPMENT OF A SHARED KNOWLEDGE BASE

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ABSTRACT

This paper examines B.Ed preservice teachers' asynchronous online discussions. Data analysis revealed evidence of Grossman's (1995) six domains for a typology of teacher professional knowledge. Research findings suggest opportunities for participation in online discussion assist preservice teachers to build coherent knowledge systems that link their developing professional knowledge and pedagogy.

INTRODUCTION

The development of teachers' knowledge has generated considerable research during the last twenty years (Grossman, 1995). While earlier research tended to investigate actual and specifically observed teacher behaviour in the classroom, later research asked questions about the beliefs and knowledge that teachers develop over time and how these might inform classroom practice (Munby, Russell, & Martin, 2001). In recent times what teachers know, how they develop and store knowledge, and how this is influenced by the teachers' own values – including their personal philosophies and goals, have become areas of growing interest to researchers (Hiebert, Gallimore, & Stigler, 2002).

The use of Information and Communication Technology (ICT) as components in teaching and learning strategies in tertiary education has increased in recent years. Although the expansion of online communication as a means of sharing experiences and expertise is a relatively new and diverse notion, its potential to assist novice practitioners in developing concepts and theories as they engage in reflective analysis of their growing knowledge has been noted. Clarke (2002) sees online conferencing as a vehicle to build supportive communities of practice among preservice teachers while Ferry, et al. (2000) regard asynchronous and synchronous forums as alternative approaches in initial teacher education for the formation of a knowledge-building community (KBC). Through engagement in these processes, preservice teachers are able to deal with authentic problems linked to the school context, as they deepen their knowledge of specific subject matter. Further, engagement can lead to enhanced skills in negotiation, communication, and collaboration.

Integral to the investigation of teachers' knowledge as a specialised area is the growing realisation by teachers of its potential to define a "profession". Hiebert, et al. (2002) draw a distinction between the features of "practitioner knowledge" and "professional knowledge". Practitioner knowledge is that which is detailed, specific, and concrete, and which is related to the daily activities undertaken by teachers as they work with their students. In the school situation this knowledge is not routinely shared with colleagues. As a result, the insights teachers acquire regarding students' learning, curriculum practices, and approaches to solving problems at the classroom level are rarely discussed in the staffroom. These insights do, however, constitute knowledge that can be seen as the basis for the development of a body of "professional knowledge". Practitioner knowledge only becomes professional knowledge when it is shared and examined publicly, stored and accumulated, and passed onto the next generation of teachers (Snow, 2001). The use of asynchronous online discussion, as shown in this paper, has the potential to contribute to the establishment of habits of mind that will assist this transition.

THEORETICAL FRAMEWORK

Teachers' knowledge has been defined in terms of domains and forms or structures, and their possible relationship of these to classroom practice (Carter, 1990; Grossman, 1995).) A suitable starting point for the analysis of data collected from the online postings in this research project is provided in the framework suggested by Grossman (1995). He identifies six domains that are evident in the day-to-day interactions of teachers with their students, colleagues, and the wider community. These are, knowledge of content; knowledge of learners

and learning; knowledge of general pedagogy; knowledge of curriculum; knowledge of context; and knowledge of self. Although these domains can be represented as discrete entities, in practice they are usually interwoven.

METHODOLOGY

Context for the study

This research relates to third-year, preservice teachers studying *Studies of Society and Environment* (SOSE) in a four-year Bachelor of Education (Primary) program at an Australian university. Students attended three hours per week of lectures and tutorials throughout a twelve-week semester. Assessment consisted of tutorial presentations, development of an online professional-development portfolio – including a minimum of eight online postings (max. 200 words), and an examination. The postings required preservice teachers to participate in semi-structured, asynchronous, online discussions related to their professional learning experiences in SOSE. The lecturer provided periodic stimulus for the discussion by posting questions and comments during the early part of the semester. Later in the semester, the lecturer purposely limited input and moderation to encourage greater independence and self-direction in the establishment of a community of learners. This approach is supported by the work of Galanouli and Collins (2000) who found that ongoing tutor moderation is not always a necessary requirement for successful online discussion. "Covert facilitation" was, however, evident throughout this study as the unit outline stated the expectation that postings should relate to unit content, as presented in lectures, the supportive literature, and textbook chapters. While it might be anticipated that some difficulties would arise with the introduction of a new teaching and learning strategy, this was countered by the potential of the online discussion to impact upon the quality of preservice teachers' discussion and thought.

Approach to the research

This study utilises a qualitative approach to the collection and analysis of data related to the research questions identified for this project. Qualitative data are supplemented by some descriptive statistics. In order to interrogate the online data, and as a means of answering the stated research questions, all postings to the threaded online discussions site were initially studied and categorized according to their designated broad subject headings. In total, 389 postings were placed by 63 students. In addition to the online postings, students' written responses to the question, "What knowledge do you believe you need to become a professional teacher?" were collected at the commencement and after the completion of the unit. Utilizing this pretest-posttest component provided additional illuminative information to that derived from the online postings. The results of this analysis are discussed later in the paper. Preservice teachers' names have been changed to ensure anonymity.

Research Questions

The study of how teachers' knowledge develops and the nature of knowledge are issues of great complexity. Therefore, the analysis of data collected in the study is limited to the following questions.

- Is there evidence of the domains of teacher knowledge in the students' online postings? If so, which domains are more frequently accessed?
- Does the discussion in the online postings show a move from practitioner knowledge to professional knowledge?
- Did the use of online technology facilitate preservice teachers' professional knowledge of self being shared and examined publicly?

RESULTS AND DISCUSSION

A preliminary investigation of the data revealed that the students' discourse could range over several domains, and an initial baseline analysis of response content – according to frequency – showed that assessment, curriculum, and values were of prime importance. As might be expected when commencing a new unit, many of the early postings focused on issues of content and pedagogy related to SOSE. As James highlights, knowledge of content is integrally linked to developing critical thinking skills.

> Don't forget, SOSE is all about the environment, global perspectives, politics, cultural perspectives…All these lead to judgements concerning ecology, justice, freedom, citizenship, ethical obligations etc. All the big issues. We are just not teaching content. We are teaching our children to think about these matters, to

> analyse, question and finally make them their own. (James)

Throughout the discussions, students' responses indicated a growing awareness of the interrelatedness of SOSE content knowledge, the ways in which SOSE might be taught to greatest effect, and their field experiences. In seventeen of their online postings, preservice teachers stressed the importance of classroom management and the need for consistency in approach when working with children. Rachel's comments provide evidence of a growing knowledge of pedagogy, the complexity of the teaching and learning process, and a deepening appreciation of process in achieving learning outcomes:

> SOSE is such a broad subject and can be taught in many different ways and so many activities brought into it. I found that the outcome of the end product was great, although when doing it I felt like I must not have explained myself clearly as the children's end result was different to what I expected. With some of my lesson plans not going so well I realised that sometimes it is important to notice how they got there – not just the end result. (Rachel)

Throughout the discussions, preservice teachers provided sound evidence of their developing knowledge of learners and the nature of the learning process. While the weekly focus of lectures and readings provided stimulus for the postings, the regularity of students' comments on issues related to critical thinking, social skilling, ethnicity, and gender equity highlight the importance placed by the students on this area of knowledge. The need to acknowledge ethnic and socio-economic diversity is apparent in the following posting, which highlights the impact of earlier Australian government policy imposed on Aboriginals. This posting, made after viewing the film *Rabbit Proof Fence*, also takes into account the sub-domains of cognitive and social growth that teachers need to address when handling sensitive issues in the classroom.

> Consideration should be given especially to Aboriginal students within the classroom. Class discussion, attitudes then and now, need to be sorted through. The fact that Rabbit Proof Fence shows intolerance and violence to Aboriginals should not deflect from the fact that white Australian children today can face intolerance, and violence within home environments. There are many issues this movie touches on that are in the "now" – the withdrawn child in your class that you just don't seem to be able to reach – the aggressive boy who protects himself through verbal and physical action due to a home life we do not understand. What approach should we take? (Roland)

Knowledge of context relates to the multiple contexts and settings within which teachers work. Development of knowledge in this area is essential for novice teachers if their planning is to coalesce with the requirements of school, district, state, and national education policies. At a different level, teacher knowledge of context is also related to their knowledge of students, families, and the local community. Analysis of the postings revealed few examples of discussion related to state or national policy issues and the impact of these on teaching. Some discussion centred on the notion of the school reflecting society as a whole and comments showed a developing appreciation of the impact of multiple, broader contexts on the context of a particular school, as evidenced in Peter's comments.

> When looking through the discussion postings I have found that a lot of our "talk" has been specifically centred on uni and the school. This is what we know most about and what is common to all of us. Perhaps a good way to start with teaching SOSE in the classroom could be to focus on "our school as a society, within a society". It would lead to an understanding of a hierarchical structure. You could then talk about rights, responsibilities and rules and why they are implemented. This could be compared to laws, and the constitution etc that are in effect in Australia. (Peter)

The SOSE unit requires students to study curriculum documents and develop curriculum units of work for discussion in tutorial groups. It is therefore not unexpected that the online postings would provide clear evidence of preservice teachers' knowledge within the

curriculum domain. Jane's enthusiasm for this area is apparent in her comments.

> In regards to the SOSE units of work I would just like to say WOW!! I'm sure others would agree that this was quite an extensive task to do, although personally I never thought I would ever know as much about my topic "Gold" as I possibly do now. I learnt so much doing this, not only about preparing units of work, but also consulting curriculum documents and gathering a fine understanding of the units of SOSE. (Jane)

Grossman (1995) considers that knowledge of self is distinctly different from the other five domains, representing neither abstract nor theoretical knowledge but rather a more personal and therefore idiosyncratic domain. Teachers use this knowledge to filter abstract and theoretical issues concerned with teaching and to negotiate classroom dilemmas in line with their own values, characteristics, and beliefs. The online postings yielded rich data as these preservice teachers considered their own values and the role these might play in their future teaching positions. Students also acknowledged their own strengths and weaknesses, and addressed goals for their students in very clear statements.

> I too always thought that I needed to teach my students the lessons I myself had already learnt and instil in them my values. However, as I continue to discover things for myself and re-evaluate some of my own views I continually experience the excitement of new discoveries. I think it is possible to rob our students of the journey of discovery if we only ever teach them what we ourselves have already learnt about life. (Sandra)

As the research suggests, teachers' own values, goals, and personal philosophies provide the filter through which teachers interpret, construct, and individualise their practice.

Knowledge Domain	Before SOSE [n]	%	After SOSE [n]	%
Knowledge of pedagogy Classroom organization and behaviour management; teaching strategies; pedagogical theory knowledge; planning and programming; use of technology.	53	20.5	54	21.0
Knowledge of learners/learning Communication and counselling skills; creating positive learning environments; gender inclusive education; human development knowledge; interpersonal skills; teaching and learning styles; motivational strategies; social skills; special needs students.	56	21.0	40	15.0
Curriculum knowledge Curriculum development; knowledge of key learning areas; differentiated and hidden curriculum; across-curriculum perspectives.	37	14.0	33	16.5
Knowledge of content SOSE resources; literacy skills; numeracy skills; research methods and skills; report writing strategies; world issues.	48	18.0	16	8.0
Knowledge of context Children's social and cultural background; knowledge of school policies; network knowledge; support-personnel knowledge; parent teacher communication.	35	14.0	15	7.5
Knowledge of self Critical reflection; ethical self management; personal professional development; leadership; patience/positive attitude; professional discourse and experience; self awareness; life management; self confidence; self knowledge of strengths/weaknesses; values, beliefs, wisdom.	10	4.0	31	15.5
TOTAL RESPONSES	**239**		**189**	

Table 1. Questionnaire responses categorized according to Grossman's six domains of teachers' knowledge.

The perceived tension in teaching values, which may differ from those held, is expressed in the following posting.

> Modelling tolerance is all well and good, but how do we model something we don't believe in? No person's values can be exactly the same as someone else's…can they? So how do we know what values to teach and how to teach them? (Brian)

Although the domain-specific examples cited above provide discrete evidence for the existence of separate domains, in reality preservice teachers comments ranged across several domains in any one posting. This interweaving of specific knowledge domains reflects the reality of the classroom where teachers draw on their combined background knowledge of subject matter, how to teach it, student learning, and the wider social context within which education occurs. In turn, this is personalised by the teachers' knowledge of self.

Results of pretest-posttest component in relation to the knowledge domains

Table 1 presents preservice teachers pretest and posttest responses categorized according to Grossman's six knowledge domains. Ranking of the domains suggests that knowledge of pedagogy and knowledge of learners and learning to be of greatest importance in the students' minds at this stage of their professional development, both before and after the SOSE unit; 41.5 percent of students ranked it as necessary before SOSE and 36 percent ranked it as necessary after. Significantly, the need for knowledge of content and context decreased as being relatively important, whereas knowledge of self increased markedly from only 4 percent of students pre-SOSE to 15.5 percent afterwards.

The move from practitioner knowledge to professional knowledge

Engagement of preservice teachers in asynchronous, online discussion during their study program provides one model for the development of professional knowledge, as it encourages critical examination of ideas in a public forum (Snow, 2001). Within a collaborative and supportive learning environment, preservice teachers make their knowledge public to their peers thereby subjecting it to critical analysis, verification, and change. The following two preservice teachers' responses provide some evidence of a willingness to share and make public their personal learning experiences. As Freyja comments,

> I personally have 1001 ideas going through my head when preparing a lesson, especially something as broad as SOSE, where so much can be done. So ideas are not my issue. It's the matter of applying them to paper (for lesson plans). I've had a few lessons where they looked fantastic on paper but on the day the lesson went in a totally different direction. The lesson still worked and the kiddies learned some vital points, but it just wasn't what I had on paper. (Freyja)

Simon's response reflects his own professional growth while maintaining sensitivity to and building upon the essence of Freyja's posting.

> I must agree with what Freyja has to say. I find that my ideas are always flowing but my application is not my best strength…some of my ideas do not meet the children's needs and abilities or are aimed at my own interests and not theirs. …some of my lessons I feel are very successful, but there are some that are of poor quality. I think what I find most difficult is combining my ideas into a lesson that will be stimulating and rewarding. (Simon)

Knowledge of self and its disclosure in the online postings

Knowledge of self is a distinctly different domain from the five others addressed in this paper. It encompasses personal values, characteristics, strengths, weaknesses, and the educational philosophies that individual teachers bring to their daily work. These influences impact on the practice of novice teachers. In this study, preservice teachers identified ten categories within their online postings that related to their developing knowledge of self. Although comments were less in number than those presented in the other categories, there was sufficient evidence in the content presented that, even at this early stage of their professional development, some students were very conscious of the impact of personal attributes on

their teaching and students. Troy provides an example.

> I know that when I walk into my classroom I am going to walk in with all my strengths and weaknesses…don't let your personal skills and beliefs affect your judgement. Just think if you have a child who comes back to you in ten years from now. What will they say about you? Will their position in society have been affected because of your teaching attitude? (Troy)

In relation to the development of a supportive learning community, the tenor of the online postings is encouraging as the participants shared their understandings in a supportive way and freely engaged in reflection on the topics raised.

CONCLUSION

This paper investigated the domains of teacher knowledge evident in preservice teachers' online discussion and related the findings to preservice teachers' growing sense of professional knowledge and their developing fusion of theory with practice. In the traditional model of teacher education, which is sometimes criticised for being course-work intensive, students have limited time to become reflective practitioners. This study highlights the use of online discussion as a relatively new means of supporting shared teacher learning. It can assist preservice teachers through the provision of opportunities to deepen and expand their professional understanding across identified knowledge domains. By grounding learning within the context of classroom practice, and through extended time for reflection, collaboration, and support in the development and extension of ideas, preservice teachers are able to take responsibility for their own learning. Within the construct of lifelong learning, the shared resolution of issues and problems is then seen as pertinent to their own personal and professional growth. Further investigation of the emphasis given by preservice teachers to specific domains of teacher knowledge at different points within the degree course is now warranted. This would enable teacher educators to more effectively prepare teachers for a future in a profession that is characterised not only by the technical expertise of its practitioners, but also by the body of shared and integrated professional knowledge that is the basis for sound leadership and decision-making in education.

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WHERE DO I FIND THE MUSIC FOR THAT? DEVELOPING SKILLS IN INFORMATION LITERACY FOR TERTIARY MUSIC STUDENTS

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ABSTRACT

This paper discusses the information literacy program that has been developed, as a joint initiative of academic and library staff, for music students at the Central Queensland Conservatorium of Music in response to a perceived shortfall in music information literacy among first-year undergraduate students. It will consider the particular academic needs of tertiary music students, the theoretical approach of the information literacy program, and the practical application of this program as an embedded component of the *History of Popular Music* course.

EXPLORING THE CONTEXT

Tertiary music students are unique among the plethora of tertiary students. They have already displayed attributes of learning and personal diligence throughout their years of primary and secondary schooling in mastering their musical instruments, developing their stage skills as dancers or actors, or refining their voices as singers. In order to qualify for study within a tertiary music course, these students must attain high levels of performance skills that have only come through years of dedicated practice. Most of these students possess a considerable amount of natural talent, but without hard work and dedication, this talent can never be fully realised in performance. Although it can be argued that great performers do not always need to go to university to realise their full potential, the experience of taking three years to dedicate oneself purely to the improvement of one's art form is, for many, extremely worthwhile and beneficial to lifelong careers in the performing arts.

Students at Central Queensland Conservatorium of Music (CQCM) fall into two broad categories depending on their mode of study. Students who audition successfully for a place at CQCM but choose to stay in their present location away from the main campus of CQCM in Mackay, may opt to enrol as "virtual" students. In July 2002, CQCM officially launched "The Virtual Conservatorium", offering an undergraduate eBachelor of Music/Performing Arts degree (Whateley & Bofinger, 2003). Students who audition successfully for a place at CQCM but choose to move to the main campus of CQCM at Mackay, undertake their studies on campus with the main cohort of students.

All CQCM students engage with face-to-face delivery models for their practical studies courses; some of them on the main campus of the CQCM at Mackay, others at various locations around the nation. All CQCM students engage with various online-delivery models for some of their academic courses. The academic courses of CQCM have been designed with multi-modal delivery models in mind and include various elements designed to maximise student learning while maintaining a high degree of flexibility in the delivery. Various technologies and pedagogical strategies are used to engage the students in these academic courses, thus providing a learning environment whereby they may acquire the knowledge necessary to become lifelong learners in the performing arts. This allows students to study anywhere and at any time without having to relocate permanently to any of the physical campuses associated with CQCM (Whateley & Bofinger, 2003, p. 2)

Regardless of the mode of study, on campus or virtual, all applicants to CQCM must pass an audition indicating their level of expertise as music performers. After passing their audition, they begin their three years of study with much enthusiasm – looking forward to focusing on their performing skills, and to becoming true professionals in their chosen fields of expertise.

IDENTIFYING THE PROBLEM

While first-year tertiary music and performing arts students already have considerable skill in their performances, many begin their studies with weak skills in searching for information on their art form, evaluating the usefulness and authenticity of this information, and applying this to their studies in academic and practical

areas. Few students begin their studies with the advanced search skills that will enable them to browse effectively and efficiently through online library catalogues, online journal databases, and the Internet. Once they enter the university library they are confronted with a barrage of new information sources that, increasingly, are accessed increasingly through computer-based technologies. As music students, this is often foreign territory.

Christensen (2001) comments that music has always been a "cumulative and multi-format discipline" (p. 3). It is cumulative in that information from the past is often just as relevant as the most recently published materials. For example, the music compositions of the Renaissance, and those writers through the ages who have expounded on their musicological importance, are just as relevant to tertiary music students as the composers of the twenty-first century who are breaking new ground in composition and style. Furthermore,

> Music students are also used to the fact that information about music manifests itself in multiple formats. Students have almost always needed to find printed and recorded music in addition to information about musical works in its wide array of formats. (Christensen, 2001, p. 3)

In order for these students to engage effectively with the extensive collection of cumulative information in its vast array of formats, they need to acquire information-literacy skills that will make them effective learners in their academic and performance studies. An effective information-literacy program for music students will help them to approach their subject matter in new ways (Bruce, 2000) and apply these new approaches to all of their tertiary studies in practical and academic areas. Furthermore, the acquisition of information-literacy skills ensures that students eventually engage functionally with the "Information Age workplace" (Marcum, 2002).

> This need requires that learners become lifelong learners to assure continuing currency and competencies amid rapid change. Not everyone will be a knowledge worker, but nearly everyone will have to engage in increasing levels of knowledge work, which can be described as using information to make judgments regarding work processes and activities. (p. 18)

Subsequent to the problem of finding ways to increase the information-literacy skill levels in music students, comes the further problem of creating a heightened awareness of the need to accurately and appropriately reference the material that they begin to find in their searches through various information sources. The Information Age has brought with it new challenges for education providers as the incidences of plagiarism grows to ever-increasing proportions. For music students, the ethical issues of intellectual property and digital music file-sharing have significant impacts on the way they approach their music learning. Entwined with the ethical issues of intellectual property, students need to become aware that information is a shared resource and that accurate and appropriate referencing protocols help to share and acknowledge information with lasting benefits to all those involved in the process of learning.

CREATING THE INFORMATION-LITERACY PROGRAM

The notion of information literacy has been explored extensively in the last decade and its importance in the curriculum for all students, in all disciplines, has been clearly established. Kaminski, Seel and Cullen (2003) note that,

> The Association of College and Research Libraries (ACRL) broadly defined information literacy as an intellectual framework for understanding, finding, evaluating and using information – activities that may be accomplished in part by fluency with information technology, in part by sound investigative methods, and, most importantly, through critical discernment and reasoning. (pp. 35-36)

The clear identification of students' needs to acquire these skills and to fully understand and apply the referencing protocols associated with university study was the catalyst in the development of an information-literacy program, relevant to the needs of the music students, embedded within the core music course *History/Popular Music MUSC10260* which is taken by all students in three separate undergraduate conservatorium programs. It was devised as a collaborative project between the

CQCM academic lecturer and the music liaison librarian of the Central Queensland University (CQU). An online workbook designed as the information-literacy assignment was devised and linked through the CQCM virtual conservatorium website to the online course materials for *History/Popular Music*. Both on-campus students and those studying through the virtual conservatorium were able to access this workbook online, and the successful completion of all the tasks embedded in this workbook became an integral part of the summative assessment for the course.

Early in the semester, face-to-face information-literacy tutorials were held in the Mackay campus library by the music liaison librarian for on-campus students. These tutorials covered the concepts in the workbook and gave on-campus students the opportunity to have hands-on computer access before they started working through the activities and the assessable items. Burke (2001), in her article on the role of the librarian in the virtual library environment, comments that librarians play a critical role in being able to provide information resources in a wide range of formats. Furthermore, Burke emphasises the educational role that librarians now play in teaching information users how to differentiate between information sources, how to address the ethical issues of intellectual property both with written and multi-media information sources, and how to evaluate the usefulness of all this information in various situations.

Those students in the virtual conservatorium were given the opportunity to communicate with the music liaison librarian through telephone and email. Throughout the semester, students used both mediums of communication, with email as the preferred option. By doing this, they were able to access the same educational support as on-campus students as they worked through the step-by-step approach that was outlined in the workbook. In addition, the Compass Tutorial, which is an important component of the CQU library webpage, gives all students the opportunity to follow a step-by-step, self-directed tutorial in some of the more generic skills associated with information literacy.

Creating a search strategy

The first two topics covered in the workbook consider the processes of finding keywords and of creating a useful and comprehensive search strategy. Bodi (2002) stresses the importance of teaching undergraduate students the process of research. The search strategy is a critical part of the research process and students need to realise that rarely will they be able to locate all the resources for an assignment through a simple line of research.

> Instead, students, like scholars, hit dead-ends, need to backtrack, and need time to reflect on the information they have and what they still need. Not only are some of the steps in the search strategy by-passed, often the entire search strategy is by-passed. (Bodi, 2002, p. 110)

At the end of these two sections, students will have acquired the skills to identify a list of keywords relevant to their topic, locate synonyms using a thesaurus, and create a search strategy consisting of keywords and synonyms – effectively providing a search structure as a basis for their research. The assessment for these first two topics requires students to apply these information skills to the topic for their essay – which will be completed later in the course – identifying the keywords for the topic, and creating a relevant search strategy.

Locating and referencing various sources

The next major topic in the workbook requires the students to locate information relevant to their essay topic in books, music scores, music recordings, websites, and online journals that are located in databases. Correct referencing protocols are embedded into the whole content of the workbook rather than being located in a discrete section at the end. In this way, students are encouraged to broaden their abilities to locate a wide variety of relevant sources of information and to record these sources accurately and thoroughly using the appropriate referencing protocols of the faculty.

This section of the workbook highlights for the student the diverse range of resources applicable to his or her music studies. Furthermore, they are introduced to the extensive amount of information that is located within the library catalogue itself. The catalogue record contains essential information about a resource, and when students are searching for a specific version of a piece of music in score format or in a recording, they are directed through the step-by-step guide in the workbook to consult the details of the catalogue record to find the work more readily.

The workbook also takes students through the process of using the catalogue record to compile the information they need for the reference so that it complies with the 5th edition of the APA (American Psychological Association) style manual (APA, 2001).

The referencing style of the Faculty of Education and Creative Arts, of which CQCM is a part, is the abovementioned APA style. During the development of the workbook, we discovered that the published APA style referencing guides do not include an authoritative list of referencing styles for all of the music formats, particularly in the area of music scores. It became necessary for the music liaison librarian to prepare and provide examples of referencing for music scores on the CQU library website as a guide for students. There is still some work to be achieved in this area so that students can accurately reference all types of music scores, which include original compositions by one or more composers, arrangements of original compositions by various arrangers for various musical groupings, and various editions of the same work with different editors, to name but a few.

Tasks revolving around correct referencing style form a large part of the assessment criteria in this section of the workbook. Through this approach, students gain an understanding of the importance and the rationale of properly referencing the works that they include in their assignments. The rationale presented in the workbook has three components.

- The first relates to an ethical or honesty issue. All ideas need to be acknowledged; and through wide reading on the topic, opinions and arguments can be formulated with more conviction.
- The second major reason for proper referencing is to provide the reader of the document with the necessary information so that he or she is able to access the same source of information.
- A third reason is to keep an accurate list of resources that have been accessed so that these may be used in later assignments and practical assessment preparations.

Creating a reference list

Once the students have identified a diverse range of resources pertaining to their assignment topic, they are shown how to arrange the references into a reference list using the prescribed APA style. The assessment requires them to create the reference list from the sources already found in the previous activities: three books, three music scores, three compact discs, three websites, and three electronic-journal articles.

Evaluating Internet sources

The Internet provides a rich source of information for all purposes and, in the workbook, students are introduced to music-specific websites such as Grove Online. The workbook also identifies useful search engines and search strategies to make browsing the web more efficient. However, such strategies would be incomplete without providing methods for evaluating the accuracy and veracity of a website. Maple, Christensen, & Abromeit (1996) comment that,

> The explosion in the amount of published information (in all formats) and the increased electronic accessibility to information sources require that the education of undergraduate students include not only strategies and tools for finding information, but methods to evaluate the information they find. (p. 745)

A significant section of the workbook is designed to heighten student awareness of both the strengths and the weaknesses of the Internet when it comes to finding suitable information for a university assignment. Bodi (2002) maintains that assistance from librarians is a critical part of this process. Librarians can be helpful in encouraging students to use various evaluation criteria when analysing a website. The information literacy workbook for CQCM includes several appendices that give a range of criteria against which students can evaluate the authority, currency, objectivity, and accuracy of a website. (Bodi, 2002, p. 113).

Reflecting on the process

It has already been emphasized that one of the challenges is convincing students that the information-literacy program and referencing equips them not only with the skills to complete the workbook and hence their assignment, but also equips them with the skills to perform research for major musical works, stage musicals, and compositions – through their working lives and, hence, lifelong learning. As

the final activity, students are asked to reflect, in 250 words, on value of the activities in the workbook, to assess which resources worked and did not work, and to state how the strategies discovered through this workbook will help them with other courses of study.

MEASURING THE LEARNING OUTCOMES

The learning outcomes are measured principally through summative assessment processes. The information literacy workbook is an assessable part of the *History/Popular Music* course and is completed and marked in the first half of the semester. The students are given specific feedback on incorrect answers so that when the students come to do their essay at the end of the semester, their research and referencing skills can be used effectively in the final product of the written assignment.

It was interesting to note that some of the virtual conservatorium students did a more thorough job with the information literacy workbook than the on-campus students and this may be due to the fact that the on-campus students were a little more complacent about attending library tutorials. Students studying off-campus have to work a little harder as the tutorial help is not so easily accessible. However, formative-assessment processes continue throughout the semester as students access the lecturer and librarian regarding the information-literacy skills that are being fine-tuned through the semester.

The final part of the information literacy workbook asks students to reflect on the whole process of the assignment and their learning journey. Their responses indicate that, for many, the project has been successful in opening new pathways of learning.

One student commented that,

> In future, this research strategy will help me immensely because it will give me an idea of where to start when looking for information – now that I have a broader understanding of the different kinds of resources, I think I will complete assignments a lot sooner. (Student A, *History/Popular Music*, 2003)

The following comment highlights the importance of specific information-literacy strategies to be included in the teaching and learning program for undergraduate students.

> Having studied last year at CQU I can honestly say that I didn't use even half of the research strategies I have used already for this subject. When I first read this assignment I thought "If only I had done something like this last year". The truth be told I've never even set foot in the university library and I had no idea that the library catalogue was on line. So suffice to say these activities have not only helped me locate and evaluate information but they have in fact helped in motivating me to research much more thoroughly (with the same amount of effort). (Student B, *History/Popular Music*, 2003)

RESEARCH IMPLICATIONS AND FUTURE PATHWAYS

This project, while in its infancy, has had a significant impact on the academic work of music students at CQCM. Anecdotal evidence from the librarians indicates that music students are growing in their understanding of creating effective search strategies, and widening their range of resources for academic and practical assessment tasks. Lecturers from other conservatorium courses have noticed an improvement in the way students reference their written work, and how they use a wide range of resources for their research tasks.

However, there is still much to be done to formally measure these learning outcomes. Qualitative and quantitative research strategies will need to be employed to measure the extent to which the information-literacy program is having an impact on the academic and practical performances of these music students. Once particular data are collected it will be possible to tailor the whole information-literacy program more specifically to the needs of music students at the beginning of their tertiary study and throughout their course. Furthermore, the information-literacy program should provide significant benefit to these students as they embark on careers in the arts. If they have gained the confidence and skills to become independent and informed learners during their tertiary study, then they will be better equipped to face the challenges and uncertainties of the future.

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KNOWLEDGE MANAGEMENT AS AN OUTCOME OF SUSTAINED TEAM LEARNING: HYPERLINKS TO EFFECT CORRECTIE FEEDBACK

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ABSTRACT

Sustained team learning involving the Zing Team Learning System is presented as a basis for learning and knowledge management. Successive activities involving learning, reflection, and applying corrective feedback demonstrate the importance of distributive cognition and co-creation of meaning through discourse. As lifelong learners, teachers and students learn to share responsibility for learning.

INTRODUCTION

Recent research into team learning using the Zing Team Learning System (ZTLS) (Callan & Whymark, 2002; Callan, Whymark, & Waters, 2000; Purnell, Callan, & Munnerley, 2003) is juxtaposed with literature associated with cooperative learning (Biehler & Snowman, 1997; Felder & Brent, 2001; Slavin, 1981, 1991b) as a means to initiate discussion about learning management and knowledge management in schools. Few would argue that at the high end of classroom practice teachers and students craft knowledge. However, a concern is registered about assumptions associated with the management of such knowledge. Arguably, a capacity for self-management, reflection, and corrective action as a natural consequence of learning is needed, but at what level is there feedback? Moreoever, what changes to teaching and learning derive from such feedback? In what ways can the responsibility for learning and knowledge management be shared?

In concert with the first pillar of lifelong learning: "Learning to know" (Jouen, 2000, p. 11), this investigation seeks to establish whether a transition in understanding about knowledge and knowledge management can be effected between teachers and learners. In most schools, it is readily appreciated that knowledge is derived as a consequence of shared activity across a variety of learning contexts over time. The chief problem, often not realised, is that knowledge can be viewed from different perspectives – and this has profound implications for knowing and for learning. On the surface, the differences in perspective appear to be more abstract than concrete. However, for teachers and learners the issue is of some

consequence, since learners are being prepared not only for a life of learning, but also for a social order that will demand vastly different requirements for applying knowledge in a future world far removed from our own (Pfeffer & Sutton, 1999).

The present view of knowledge, its implications for learning, and its importance to society continues to shift. This is undoubtedly a product of advances in information and communications technologies (ICTs) and new ways of thinking about knowing in the much vaunted knowledge-age. This shift in understanding with its own fresh set of imperatives, has indeed usurped the earlier vision of a learning society committed to life long education (Faure, 1972) to one which looks more to lifelong learning as a means of enabling individuals to come to terms with change and uncertainty.

REFLECTIVE PRACTICE AND KNOWLEDGE CREATION

The advent of the ZTLS in schools presents something of a challenge on at least two fronts. The first is that the technology with its requisite processes for knowledge building does not sit easily with traditional (industrial model) classroom instruction. The second is that teachers, themselves, need to engage the tools from the standpoint of reflective practice based on a professional commitment to participate in knowledge creation with learners, in the first instance, and then with fellow professionals (teachers, researchers, and ICT-support personnel).

The concept of reflective practice is, in itself, highly instructive, in as much as the role of the teacher is transformed from that of the "sage on the stage" to that of facilitator or team leader. According to White (2002), "Reflective practice is the key to understanding the link between the knowledge that is gained about a particular situation and the making of the most appropriate decisions in light of the available information" (p. 2).

In view of this conceptualised study into how teachers might collectively manage local knowledge, one might ask the question, "Why should teachers be expected to change, simply because new technologies offer benefits which do not sit comfortably with traditional modes of classroom practice?" The answer may be unpalatable to some, but the nub of the issue has more to do with the very assumptions that are held about knowledge itself, and how knowledge might be managed within learning organizations (Huysman, 2001). Moreover, there is the issue about the personal motives teachers hold as professionals regarding reflective practice.

Reflective practice is essentially about teachers determining "why certain choices work and why others do not" (White, 2002, p. 3). Alternatively, issues centre on fundamental questions suggested by Argyris (1977), such as,

- What's wrong with *doing things as they have always been done?*
- What is there to be gained by attempting to reframe teaching practice?

Such questions are symptomatic of the present gap in appreciation as to how subtly the concept of knowledge continues to shift. A more complete framework of understanding is needed.

Under the guise of *double loop* learning, where "error is detected and corrected in ways that involve the modification of an organization's underlying norms, policies and objectives" (Argyris & Schön, 1978, pp. 2-3), it is probable that teachers and learners may come to a realisation in their own time that, "Knowledge is a collaborative by-product" (de Paula & Fischer, in press, p. 5; Fischer, 2003a). Furthermore, knowledge is not only socially constructed (Huysman, 2001), but is also "enacted in practice" - it addresses the situated needs of individuals (de Paula & Fischer, in press, p. 6).

The extent to which schools are seen as learning organizations against the backdrop of the lifelong learning paradigm holds implications for the idea of how knowledge construction is or is not negotiated between teachers and learners (Cibulka, Coursey, Nakayama, Price, & Stewart, 2000; Salomon & Perkins, 1998). Without attendant tools and skills, it is difficult to see how knowledge-creation activities can be effectively enacted. A "knowledge centric" (Tiwana, 2001) organization is likely to be an organization that sees itself as a learning organization (Senge, 1990).

Purpose

With these issues in mind, ZTLS deployment needs to ensure that:

1. The creation of knowledge in classrooms is not a disconnected undertaking – "knowledge" is more than an artefact or a product of classroom learning activities.
2. Teachers and learners demonstrate a capacity to co-create meaning and manage knowledge (co-create and build).
3. Learning processes involving tools must express a value-added level to individuals in terms of deeper levels of cognition, shared understanding, and joint creativity.

In this way, the onus of responsibility is distributed across sets of classroom activities on the basis of enabled social relations between teachers and the learning teams engaged in cooperative forms of learning (Biehler & Snowman, 1997; Johnson & Johnson, 1984; Slavin, 1991a). This level of emphasis is particularly poignant since traditional assumptions about knowledge per se remain somewhat entrenched and narrowly defined. For instance, the fact that knowledge is likened to a commodity (Murray, 2000) in effect holds that lived past experiences are the only effective means of informing future experiences (de Paula & Fischer, in press; Fischer, 2003b). Table 1 summarily challenges such notions with equally valid, but, socially situated, alternative perspectives of "knowledge".

A DISCURSIVE FRAMEWORK

The ZTLS, as a Group Support System (GSS) comprises a set of tools and procedures which sets the stage for team work. However, the choice of associative method or practice to secure learning outcomes is important (Waters & Callan, 2003).

There are a number of attributes associated with use of the ZTLS that underscore a capacity to facilitate discourse contingent upon achieving process outcomes such as,

- ensuring all participants have a voice, and the all contributions are duly recognised, acknowledged, and utilised (Dennis, George, Jessup, Nunamaker, & Vogel, 1988; Nunamaker, Dennis, Valacich, Vogel, & George, 1991);
- rapid generation of ideas as the basis for achieving flow (Csikszentmihalyi, 1990; Csikszentmihalyi & Csikszentmihalyi, 1988);
- working together in real time on really relevant activities as a team (Fischer, 2003a; Siciliano, 2001);
- guidance and support to be creative and to take risks (Felder & Brent, 1996);
- shared willingness and commitment to completing tasks as a pretext to forming Communties of Practice (COP) or Communities of Interest (COI) (de Paula & Fischer, in press; Wenger, 1998).

A framework associated with classroom discourse is important since, teacher use of the ZTLS to plan and generate assessment criteria needs to encompass a different set of knowledge-building parameters to those normally applied when teaching (Purnell, et al., 2003). In response to such efforts the points raised by Laurillard (1995) concerning the "the complexity of coming to know" (pp. 48-69) provides a salutary reminder of the obligations associated with finding out what happens during learning.

In essence, the principles concur with respect to the integrative nature of learning processes and the inseparability of knowledge and action. Starting with the proposition that a methodology of "a deep level of description of what is happening" (Laurillard, 1995, p. 49) is required, teachers have an onus of responsibility to ensure that team learning situations are circumscribed by practices that,

- apprehend the structure of discourse,
- integrate the sign with the signified,
- act on the world and descriptions of the world,
- use feedback,
- reflect on the goal-action-feedback cycle. (Laurillard, 1995, pp. 48-69)

Descriptions of the ZTLS have previously concentrated on how information is exchanged across a team of learners with the teacher as facilitator (Callan & Whymark, 2001, 2002; Callan et al., 2000; Purnell et al., 2003; Waters & Callan, 2003). Figure 1 illustrates the visual layout that is projected or displayed on a set of visual display units. In view are 12 playspaces (linked to keypads), a team space where ideas are "published" for the team and facilitator to process. The content of the session illustrates that the learning is focused on a series of questions associated with three interrelated topics. The teacher (facilitator) exercises control of the workspace by establishing the focus for the session, itemising questions or prompts as part of the agenda, and encouraging individual responses to be keyed-in to each of the

	Commodity Perspective	Design Perspective
Nature of Knowledge	Object	Enacted
Creation	Specialists	Stakeholders
Integration	Design time	Use time
Tasks	System-driven	User-driven
Learning	Transferred	Constructed
Dissemination	Broadcasting	On-demand
Technologies	Closed, static	Open, dynamic
Work Style	Standardized	Improvised
Social Structures	Top-down	Peer-to-peer
Work Structures	Hierarchical	CoP and CoI
Incentive Structures	Job assignments	Direct involvement
Breakdowns	Errors to be avoided	Opportunities

Table 1. Two Perspectives of Knowledge Management.[6]

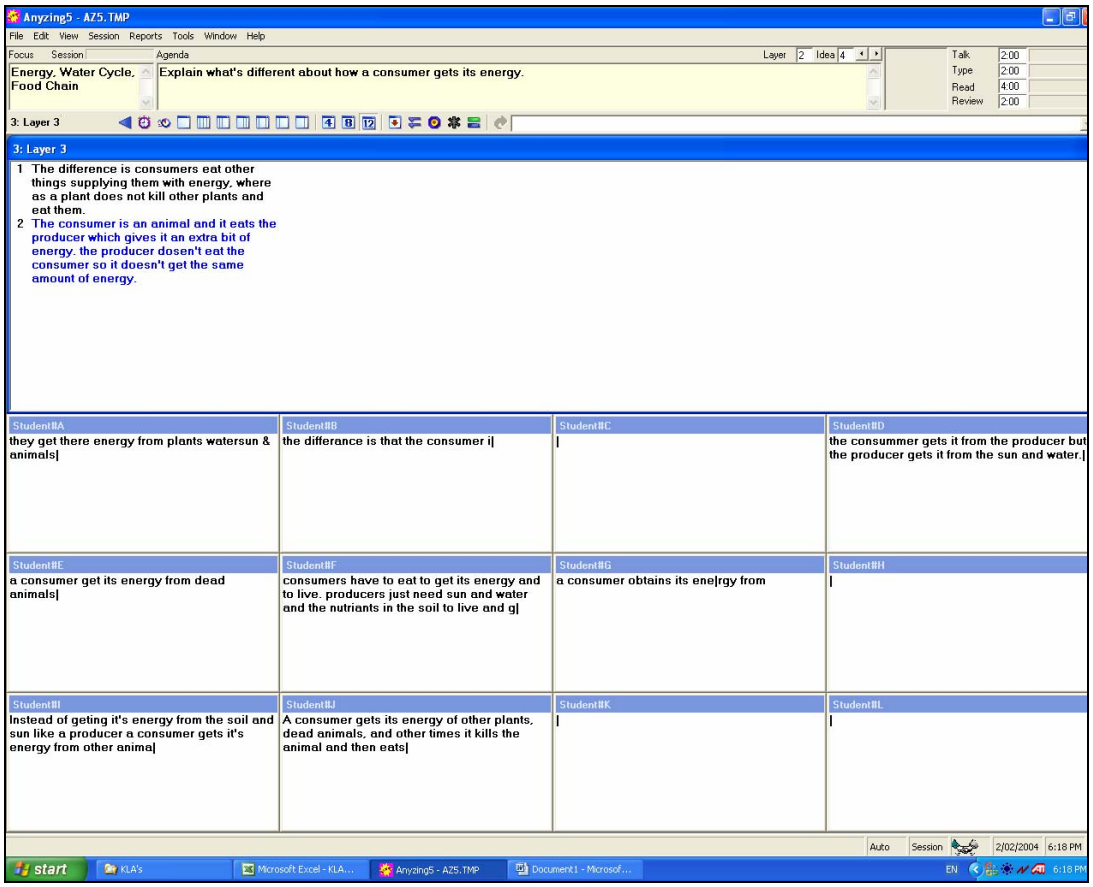

Figure 1. The ZTLS working interface.

[6] From "Knowledge Management – Problems, Promises, Realities, and Challenges", by G. Fischer and J. Oswald, 2001, *IEEE Intelligent Systems* (January/February), pp. 60-72. Copyright 2001 by G. Fisher. Reprinted with Permission.

playspaces which are then relayed by the participants to the teamspace. The effect is tantamount to parallel conversations occurring simultaneously (each participant has a say).

The next stage involves the listing and processing of contributions where a variety of techniques and procedures are deployed to scaffold the team's involvement with the task at hand. In an effort to refine the list of contributions in line with the task objective, teachers facilitate further discussion of the constituent parts of the response set in line with the whole set (Laurillard, 1995). Participants are not constrained from engaging in cross flow (side conversations) as this is both necessary and important to the flow and the generation of ideas (Csikszentmihalyi, 1990; Csikszentmihalyi & Csikszentmihalyi, 1988). In most cases much of the shared content engenders further discussion, and elaboration, given that all inputs are accepted.

Analytical approach

In Figure 2 the output of the Zing session is extracted by the teacher for the purposes of assessing the calibre of the discourse both at the level of the individual contributions, and the across-team contribution.

Figure 2 illustrates the extraction of the data to a spreadsheet or database so that participant responses can be recompiled for further analysis. At this stage data are subjected to content analysis (Gee, Michaels, & O'Connor, 1992) using any type of qualitative analysis tool. Figure 3 illustrates this with the application of ATLASti (Muhr, 1993-2003) a multimedia-based, qualitative data-analysis tool. ATLASti provides the means to structure semantic network maps, and hyperlinked analysis of profiled sets of each learners contribution in class.

This summary of learner input enables the teacher (analyst) to map the outcomes of team learning activity. Sustained analysis of team sessions over time provides an overarching sequence or pattern of gaps in the learners understanding, or underlying assumptions about the learning content. Certainly, the analysis transcripting the transfer of data from one tool (in this case the Zing database) across to an analytical tool such as ATLASti provides scope for assessment and feedback.

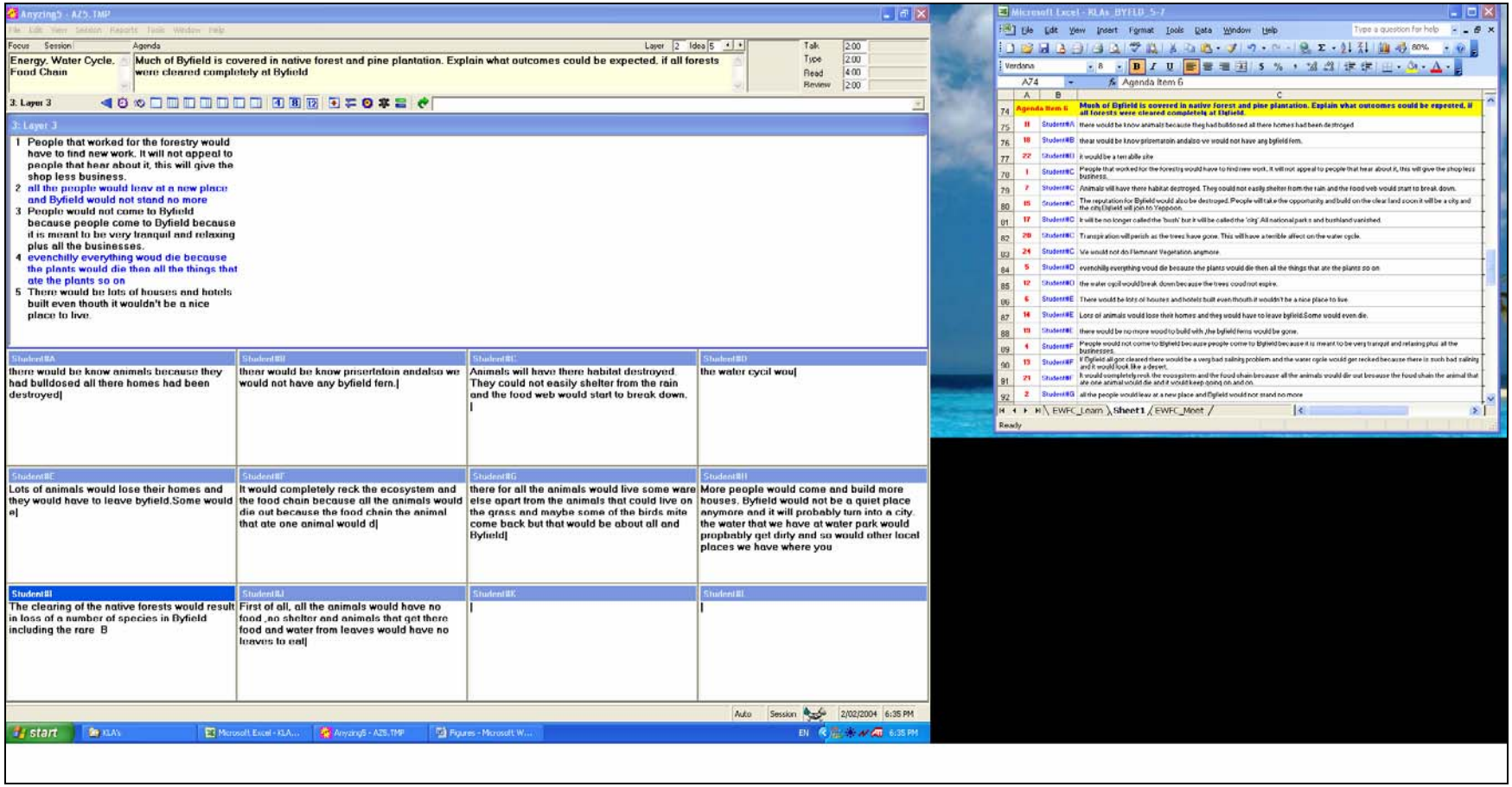

Figure 2. A ZTLS report extracted from a completed session and compiled in a spreadsheet or database.

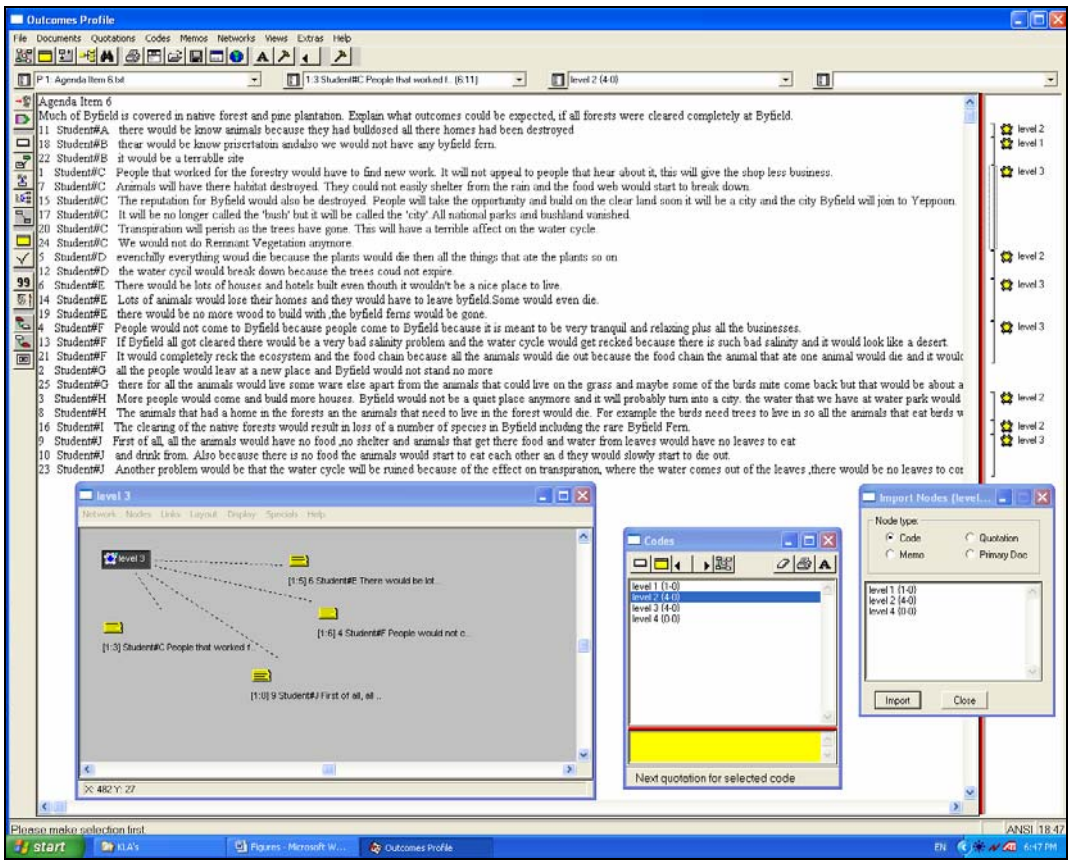

Figure 3. The Analysis of ZTLS report applying predetermined criteria.

DISCUSSION

The ZTLS illustrates that team learning is both purposeful and systematic. Teachers can assess the level and extent of knowledge coverage learners successfully appropriate. Moreover, the attendant skills and competencies involved with extended use of the ZTLS suggest opportunities for appreciating the importance of enabling learners to construct knowledge in teams (Huysman, 2001; Rogoff & Lave, 1984; Salomon & Perkins, 1998).

The sustained use of such techniques within mainstream teaching uncovers further avenues for investigation between the school as a learning organization and the manner in which shared knowledge is institutionalised (Berger & Luckman, 1996).

In concert with such an emphasis, there is a possibility that extended application of the ZTLS can uncover another, equally important, dimension of the ongoing dialectic between learning and knowledge management since, "Learning occurs through active participation in practices of communities while at the same time identities in relation to these communities are constructed" (Huysman, 2001, p. 2).

The application of social learning theory in this way holds particular implications for continued research intended to contribute to the importance of reflective practice amongst teachers. This is consistent at least with the inclination to understand "knowledge as enacted in practice" rather than persist with the "commodity" view of knowledge (de Paula & Fischer, in press; Fischer, 2003b).

CONCLUSION

The emphasis associated with team learning involving technologies like the ZTLS confirms the importance of supporting social processes which underscore cooperative learning. As a knowledge creation tool, the ZTLS enables teachers and learners to appreciate that learning involves more than mere detection of error. The deeper the level of understanding about knowledge – its creation and its management –

the more profound will be the appreciation for learning and knowledge management.
For teachers, a commitment towards reflective practice aided by structured processes and techniques to foster collaboration, points to a willingness at least to mandate rewarding changes in professional practice. For learners, on the other hand, the prospect of learning is charged with the realisation of a special responsibility for "knowing" more about oneself. Furthermore, in exercising a personal entitlement to share and create knowledge with others, there is the prospect of mutual gain.

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ARE FOREIGN STUDENTS IN AUSTRALIAN UNIVERSITIES DISADVANTAGED WHEN LEARNING JAPANESE THROUGH THE MEDIUM OF ENGLISH?

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ABSTRACT

There is concern that international students studying Japanese in Australia are seriously disadvantaged by having to learn a foreign language through the medium of another, imperfectly-mastered, foreign language. This paper tests the validity of these concerns through comparative evaluation of the frequency and type of errors made in written texts by Australian and international students.

INTRODUCTION

In the process of learning a foreign language, students will produce non-native linguistic features in the target language. These non-native features often cause difficulties in communication, and yet they are unavoidable. Strevens called these non-native features "errors", "mistakes", "deviations", "distortions" or "points of difficulty" (Strevens, 1969), while Kramsch viewed them as "failures of performance" (Kramsch, 1993). Irrespective of the terminology applied to these non-native features, over the past three decades a number of often-conflicting theories emerged regarding the treatment of errors. For example, when structuralism theories were in vogue (Richard-Amato, 1996) errors were viewed as the formation of a bad habit to be avoided at all costs. With the advent of the communicative approach to language teaching on the other hand, recognition was given to the fact that errors are an inevitable phenomenon in language learning (Kramsch, 1993).

Over the years, applied linguists of many nations have examined sources of errors extensively, as well as the strategies a student employs in learning a language. However, the resultant findings, reflecting the different objectives of individual researchers and the different theories each of them embraced, are not only inconclusive but also often produce contradictory. It can be seen, therefore, that student errors still provide researchers with a fruitful field of academic inquiry.

This investigation on student errors is motivated by a concern, voiced by a number of educators, that international students[1] – the majority of whom come from non-English speaking backgrounds – are seriously disadvantaged in competing for high grades with Australian students. Although all international students accepted into the university programs must, theoretically, meet the required English proficiency entry standard by having to comply with the International English Language Testing System (IELTS) at level 6.0 for undergraduate students (University of Cambridge, 2002), in practice most of them experience significant difficulties in coping with the reading and writing requirements of tertiary academic courses. In a study of international students in the Australian academic environment, language difficulties were ranked as the most acute problem by both the surveyed students and the teaching staff (Littlemore, 2001). In addition to the language difficulties, exposure to social and educational environments vastly different from those of their homelands adds further dimensions to the problems international students are experiencing in the course of their studies in Australia (Ballard, 1987). Learning styles attributed to different cultures have also been examined by a range of authors across a number of disciplines (Moody, 1988; Gregory, 2000; Auyeng & Sands, 1996). For instance, the Chinese learners and their paradoxical use of rote learning have been the subject of an individual study in relation to particular learning styles (Marton, Dall'Alba, & Tse, 1993). Cultural differences also are seen as contributing factors to variations in approaches to learning, which are then seen to lead to qualitatively different learning outcomes (Tempone, 2001; Ramsden, 1992).

Similar concerns in regard to international students undertaking studies of Japanese language have also been voiced. The Japanese courses taught at Australian universities are designed specifically for English-speaking students. Consequently, the teaching staff often express concern that international students are seriously disadvantaged in having to learn a foreign language through the medium of another, imperfectly-mastered, foreign language.

[1] Students from overseas countries, mainly Asian, who seek degrees from Australian universities.

PURPOSE OF RESEARCH

The main objective of this research, therefore, is to test – albeit in a very limited measure – the validity of these concerns. This will be done by making comparative evaluations of syntactic errors in written texts produced by a selected sample of Australian (native speakers of English) and Chinese students. Chinese students are chosen as the representative sample of the majority ethnic cohort within the international student population (Chen, 1995). This investigation is limited to the identification and evaluation of errors in students' usage of a set of postpositional morphemes, commonly referred to as *particles*. The discussion throughout this paper is couched in layman's terms to illustrate the way in which the rules governing contextual usage of particles are presented to the students. Although the errors are examined within the framework of *interlingual*, *intralingual, developmental* and *induced* error categories, as defined in the relevant reference literature (Littlemore, 2001), it should be pointed out that identification of the sources of errors is only of secondary consideration. In brief, they are categorized as follows. *Interlingual interference*: when sentences in the target language show interference from the mother tongue. *Intralingual interference*: when items produced by the learners reflect not the structure of the mother tongue, but generalisations based on partial exposure to the target language. *Developmental interference*: when students attempt to build up their own hypotheses about the target language grammar. *Induced interference*: when faulty teaching methods and/or materials cause errors in students' performance.

The main objective, is to utilise the quantitative and qualitative distribution of errors in the two sets of data as the basis for ascertaining whether Chinese students have greater acquisition problems than their Australian counterparts and whether these problems, if any exist, can be attributed to the lack of native-speaker competence in English.

METHODOLOGY

This investigation is based on data derived from one of the written components of the end-of-second-semester final test, administered to students completing the beginners' stream Japanese 1 program.

This university offers two Japanese language streams: the beginners' stream, designed for students with no prior knowledge of the language; and the advanced stream, for students with sufficient competence in the language to warrant enrolment in the latter. The beginners' stream, being numerically much larger, provided a better opportunity for selecting a representative sample of students. Thirty students were chosen, fifteen Australian[2] and fifteen Chinese, to serve as the sample. In table 1 and table 2, the upper-case letters A and C identify the Australian and Chinese cohorts of students, while lower case letters of the alphabet identify individual students within each cohort.

Code	Age	Gender	Native Language	Other Language	Assessment
Aa	18	M	English	None	64.00
Ab	20	M	"	"	60.00
Ac	21	M	"	"	61.75
Ad	23	M	"	"	60.25
Ae	32	M	"	"	61.25
Af	18	F	"	"	61.5
Ag	18	F	"	"	61.00
Ah	19	F	"	"	66.00
Ai	22	F	"	"	68.00
Aj	24	F	"	"	70.00
Ak	25	F	"	"	64.00
Al	27	F	"	"	64.00
Am	27	F	"	"	70.25
An	22	F	"	"	61.00
Ao	25	F	"	"	70.25

Table 1 The Australian cohort.

Code	Age	Gender	Native Language	Other Language	Assessment
Ca	22	M	Hokken	MCh/Eng	68.50
Cb	22	M	"	"	64.00
Cc	23	M	Cantonese	"	70.25
Cd	18	F	"	"	70.75
Cf	18	F	"	"	70.75
Cg	19	F	"	"	60.00
Ch	19	F	"	"	69.75
Ci	19	F	Hokken	"	65.00
Cj	20	F	"	"	69.00
Ck	20	F	"	"	70.00
Cl	20	F	"	"	70.00
Cm	20	F	"	"	70.75
Cn	20	F	"	"	70.50
Co	20	F	"	"	66.25

MCh = Mandarin Chinese ***Eng = English***

Table 2. The Chinese cohort.

As can be seen from the information recorded in table 1 and table 2, the age distribution of the sample is only slightly different in the two respective cohorts. In the A cohort, student ages range from the usual school-leaving age of 18-19 years, to 27 years, a distribution fairly common in the Australian tertiary system which allows deferment of courses and mature-age

[2] The term Australian for the purpose of this investigation is applied to monolingual students whose mother tongue is Australian English.

entry.[3] Despite the difference in the age distribution of the A cohort, the seven older students are included in the sample on the assumption that a difference in age of five or six years where adults are concerned is not crucial, particularly in those instances where other attributes are very similar.

The C cohort on the other hand, is composed predominantly of school-leaving age students, with the exception of the three male subjects who – in accordance with the laws of their respective countries – had to complete two years of compulsory military service before proceeding to tertiary education. In regard to the gender distribution, there are twice as many females as males in the A cohort, and in the C cohort there are four times as many females as males. The above gender ratios are consistent with those commonly found in Japanese language courses at Australian universities (Skoutarides & Kubota, 1995).

The A cohort is composed entirely of Australians whose mother tongue is English, and who do not speak, read, or have ever formally learnt, a foreign language. The C cohort is composed of students of Chinese ethnic background, whose native tongue is a dialect of Chinese[4] and who have formally learnt at least one foreign language; in this case English. Recognising the fact that it would have been preferable to include in the C cohort only students with common dialectal backgrounds, the lack of a sufficient number of students (from Taiwan or Hong Kong, for instance), made such a selection impossible. Consequently, on the assumption that interlingual interference from the native dialect, if present, would not constitute a crucial degree of variation, the Chinese cohort are treated as a single entity irrespective of their dialectal background.

One similarity between the two cohorts is evident in the assessment column. All participating students appear to belong to the "middle of the road" category, with the final assessment marks ranging from a strong pass (60 percent – 65 percent) to a weak credit (66 percent – 71 percent). High achievers on the one hand and poor performers who could not achieve 60 percent on the other are excluded from the sample on the grounds that lack of substantial numbers of errors in the output of the former and too many developmental errors in the output of the latter might skew the results of this investigation. None of the students, irrespective of the cohort to which they belong, has ever studied Japanese, or been exposed to the Japanese language before enrolling in the present course.

The first year of the Japanese program places equal emphasis on the four skills of reading, writing, listening, and speaking; the teaching of grammar, best explained in English, is undertaken mainly by the latter. The data were obtained from one of the written components of the second-semester, final test. By the time of the final test the students had covered most of the basic grammar patterns, and gained some competence in reading suitably abridged texts and writing simple compositions. Consequently the selected written component of the final test provided sufficient scope for the identification of specific syntactic errors.

In this investigation we chose to concentrate on four English-to-Japanese translation sentences, including usage of particles and the gerundive form of verbs. The grammatical items are two post-positional morphemes; that is, the two particles which perennially cause acquisition problems for beginner students. We believe that a comparison of errors in the same syntactic area made by two ethnically disparate cohorts of learners, acquiring the language outside Japan, can bring forth some interesting findings that have significant implications for language teaching methodologies.

Particles are an extremely complex feature of the Japanese language. For the purpose of this investigation, the two particles examined are looked at from the point of view of the beginner learner; that is, in their primary role of marking the grammatical subject and direct object of basic sentences.

Having made the selection, the four sentences examined were translated by each student in the sample for errors in their usage. The frequency of errors was examined per text per student and subsequently per A and C cohorts against the total number of occurrences of the specific postpositional morphemes necessary to formulate grammatically-correct sentences. The errors found were categorized into the *interlingual*, *intralingual*, *developmental* and

[3] Mature-age entry is for people over the age of 21.

[4] The C cohort students are also formally educated in Mandarin Chinese.

induced types. A comparison of the frequencies of occurrence of each type in the A and C data was then made to establish whether the Chinese students had more difficulties in acquisition of these grammatical features than the students in the Australian cohort.

RESULTS

Subject marker *GA/WA*

The primary function of particle ***GA*** is to mark the grammatical subject of a sentence (Skoutarides & Machida, 1987). In examining the data for errors, the focus is on the marking of the subject with an acceptable particle without making fine distinctions between ***GA*** and ***WA***.

The errors are examined within two categories: usage of a wrong particle (WP) and omission of the particle (OP).

	WP		OP		Total Errors	
	Number	%	Number	%	Number	%
A	7/45	15.6%	5/45	11.1%	12/45	26.7%
C	6/45	13.3%	1/45	2.2%	7/45	15.6%

WP: Wrong Particle. OP: Omission of Particle

Table 3. Subject/topic marker (WA/GA) errors.

Four English sentences comprised the translation section.

1. Shall we have a barbecue on Sunday?
2. Please put this postcard into the mailbox.
3. Ann leaves the house at 6:30 and goes to work by bus.
4. Sue waited at the station for about three hours but the train did not come.

Three nouns in the above sentences required identification as grammatical subjects through marking with the ***GA/WA*** morpheme: **Ann** in sentence 3, and **Sue** and **train** in sentence 4. In the remaining sentences the subject was deleted in accordance with one of the characteristic feature of the Japanese language, that is, the application of zero anaphora to all contextually understood elements of a sentence or a longer body of discourse. This rule applies in particular to topicalised nouns.

Marking correctly two of the three grammatical subjects presented no problems. The majority of problems seem to have occurred due to the difficulties the students found in identifying the function of the **train.** All students, who used an incorrect particle to mark the train, opted for the direct object marker ***O***. This strongly supports the premise that they failed to recognise the compound structure of the sentence.

Whatever the causes of these errors, the *developmental* category seems to be the most appropriate classification at this stage.

Direct object marker *O*

	WP		OP		Total Errors	
	Number	%	Number	%	Number	%
A	13/45	28.8%	10/45	22.2%	23/45	51.0%
C	8/45	17.8%	9/45	20.0%	17/45	37.8%

WP: Wrong Particle. OP: Omission of Particle

Table 4. Direct object marker (O) errors.

In Japanese, similarly to the grammatical subject, the direct object has to be overtly marked with the postpositional morpheme ***O.*** Given the structural similarity of English and Mandarin Chinese transitive sentences, we postulated that acquisition of particle ***O*** would present the same level of difficulty to both groups of students. Three out of the four translation sentences required obligatory usage of particle ***O*** and these are discussed individually.

Sentence 1. Shall we have a **barbecue** on Sunday?

Sentence 1 produced relatively few errors. However, those that did occur are of some interest because they are, possibly, examples of *interlingual* interference. In the WP category of errors a small number of students in both groups used ***WA*** or ***GA*** instead of ***O*** which reflects an attempt at direct translation from English, that is **have a barbecue** which literally translated into Japanese would be ***baabekyuu GA arimasu***. This structure is unacceptable grammatically as the Japanese equivalent uses **N** ***O suru*** (to do***)*** structure which translates literally to "to **do**" a barbecue.

Omission of the particle occurred rarely but, as the direct object is not overtly marked in English or Mandarin Chinese, some possibility exists that these errors might also be an example of *interlingual* interference. On the other hand, the OP errors might also represent overgeneralisation of the function of the verb ***suru*** and therefore *intralingual* interference.

Sentence 2. Please put this **postcard** into the mail box.

Sentence 2 is structured as a request and includes the donatory form of the verb ***kudasaru*** (to give + honorific)**,** that is ***kudasai.*** The phrase **Noun** ***O kudasai*** was initially introduced in Lesson 2 as a part of a dialogue based on a shopping situation and practised extensively (Skoutarides & Machida, 1987, p. 45). Subsequently, the grammatical rules governing usage of the request form were explained in conjunction with the introduction of the function of particle ***O*** (Skoutarides & Machida, 1987, p. 131)

Particle ***O*** was used to mark the noun immediately preceding the donatory verbal structure without any consideration given to the meaning. It is interesting to note that despite the alleged shortcomings in English none of the C group confused the function of the two nouns in this sentence.

Sentence 3. Ann **leaves the house** at 6:30 and goes to work by bus.

In the Japanese version, the phrase **leaves the house** should be expressed as ***uchi O deru***. Perusal of the grammar textbooks used in the beginners' stream (Skoutarides and Machida 1987) showed no explanations or exemplifications pertaining to the transitive usage of ***deru***. Consequently these errors fall into the *induced* error category and do not reflect any significant lack in students' acquisition of the primary function of particle ***O*** as the direct object marker. On the contrary, the problem encountered with ***uchi O deru*** suggests a fairly good understanding of the function of particle ***O*** by both groups of students as evidenced by their reluctance to designate ***uchi*** as a direct object of an intransitive verb. It is interesting to note that, without exception, all students opted for particles ***NI*** or ***E*****,** which are generally used to mark the indirect object of intransitive "motion" verbs.

Sentence 4. Sue waited **at the station** for about three hours but the train.

Not all grammatical subjects presented a problem. Except for one Australian student who omitted the particle identifying the function of **Ann** (Sentence 3) as the subject/topic of the sentence, the remaining fourteen Australians and all the Chinese students marked **Ann** and **Sue** correctly with the topic marker ***WA.*** The majority of problems seem to have occurred due to the difficulties the students found in identifying the function of the **train.**

Whatever the causes of these errors, the *developmental* category seems to be the most appropriate classification at this stage. The data strongly suggest that identification of the function of **train** as the grammatical subject of the second sentence presented the main problem rather than interference from English or Chinese.

The preference for particle ***O*** (direct object marker) by both groups of students strongly supports the premise that they failed to recognise the compound structure of the sentence. The initially learned basic SOV transitive sentence pattern seems to have been applied here without any consideration given to the meaning.

CONCLUSION

Looking at the information discussed above, it can be seen that errors in the usage of the subject and the direct object markers are clustered at specific points of difficulty common to most students in both groups (e. g., inability to distinguish between simple and compound sentences, problems with **N** ***O kudasai***, etc.). There is some evidence for possible *interlingual* interference from English and/or Chinese,

particularly in the case of OP errors as corresponding grammatical subject and direct object marking morphemes do not exist in the two languages. In most cases, however, the errors found in data appear to be of the *developmental* type, arising more from the confusion as to which particle to use rather than lack of awareness that particles have to be used. The data also revealed an interesting example of an *induced* error caused by the lack of overt instruction in the functions of the verb ***deru***. There was a great deal of similarity in the type of errors made by the two groups of students, which suggests that irrespective of ethnic background and/or competence in English, Australian students and their Chinese peers experience acquisition problems in very similar areas and deal with the perennial learners' problem of correct particle usage in a very similar way.

In regard to the quantitative comparison between the two groups of students, the results of this very limited investigation suggest that the Chinese students experienced less difficulty than the Australian group in mastering at least usage of the grammatical subject and direct object particles. Bearing in mind the syntactic similarities between English and Mandarin Chinese, it can be assumed that the degree of difficulty in acquisition of these particles was the same for both groups of students. However, unlike their Australian peers, the Chinese students have had prior experience in learning a foreign language. It can be argued, therefore, that any disadvantage of learning Japanese through a medium of English is more than compensated for by other factors, such as, perhaps, better developed learning strategies or better study habits. This question will be the basis of further research.

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A TALE OF TWO UNIVERSITIES: THE LIBERAL TRADITION AND THE BUSINESS CASE IN AUSTRALIAN AND VENEZUELAN LIFELONG LEARNING

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ABSTRACT

This paper examines two universities as contrasting sites of lifelong learning: Central Queensland University as an Australian regional university; and the Universidad Central de Venezuela as that country's oldest university. The comparison reveals different but increasing pressures on both institutions, yet also identifies respective places of nourishment for lifelong learning.

INTRODUCTION

This paper explores the axiom that place makes a difference in education, by adding the qualifier that sometimes difference creates new places in lifelong learning. That is, despite the onrush of globalization and the associated risks of cultural homogenisation, an interrogation of national convergences and divergences in lifelong learning policy and provision highlights the multiple intersecting and disconnected contexts in which such policy and provision are located. This creates both challenges and opportunities for those committed to maximising the transformative potential of lifelong learning.

We illustrate this argument by reference to two universities as contrasting sites of lifelong learning. One site is Central Queensland University (CQU), an Australian multi-campus regional university which also has many international students at centres in Australian capital cities and overseas. CQU has large numbers of mature-age students and students from low socio-economic backgrounds, and it has specialised programs for "second chance" learners, Indigenous Australians, and women studying science and technology. At the same time, it is prey to government pressures to diversify its funding base and to demonstrate corporate accountability.

The other site is the Universidad Central de Venezuela (UCV), the oldest Venezuelan university, which is located in the national capital, Caracas. Its offerings can be considered "traditional", with emphasis on high status professions, and it is the centre and source of strong cultural capital. On the other hand, it has initiated a number of support programs, and it contributes to a long history of multiculturalism in Venezuela.

We use Bailey's (1999) useful distinction between "the liberal tradition" of education and "the business case" for education (pp. 10-11) as a frame for comparing policy and provision in the two universities in this tale of lifelong learning. We contend that the interplay between these two discourses is manifested differently in the two institutions, reflecting the influence of national and regional forces. Yet we assert also that in each institution there are places where the educational transformation promised by lifelong learning can be nourished.

LIFELONG LEARNING AND CENTRAL QUEENSLAND UNIVERSITY

The central features of Australia's 36 public and 2 private universities are diversity and autonomy. These institutions, like those in many other parts of the world, are responsible for the ongoing lifelong learning of pre-undergraduate, undergraduate and post-graduate students from a wide range of Indigenous backgrounds, nationalities, age groups, and socio-economic circumstances. They are deeply committed to research and scholarship, and to advising and commenting on national and international issues. Each university is particularly involved with its own local, regional, state, national, and global communities. They supply employment for a large number of people (both Australian and international), and they play an important vocational role in providing top-level employees for the workforce as students complete their degrees in a wide range of disciplines. Higher

education in Australia is older than Federation, commencing about 150 years ago, and it continues to grow and develop at a remarkable pace (Australian Vice-Chancellors' Committee [AV-CC] Publications, 2000).

Central Queensland University (CQU) was established in the regional city of Rockhampton as the Capricornia Institute of Advanced Education (CIAE) in 1967. Since its inception, CQU has undergone a number of significant changes in its journey from institute to autonomous university. There are four regional campuses apart from that in Rockhampton: Bundaberg, Emerald, Gladstone, and Mackay. While the Rockhampton campus remains the largest, the others have grown significantly in terms of student and staff numbers and infrastructure. CQU also has locations in other parts of Australia and overseas. In the years from 1990 to 2003 the total student population tripled, increasing from 5,956 to approximately 18,621 (Analysis and Planning Division of CQU, 2003; cited in Luck, Jones, McConachie, & Danaher, 2004, p. 4). This growth is remarkable when one considers that Rockhampton, the university's centre, has a relatively small population (65,000), is isolated (649 kilometres from Brisbane, the state capital) and can be regarded as conservative. Despite, or perhaps because of, these perceived limitations, CQU has demonstrated a strong commitment to lifelong learning.

The student population at CQU is remarkably diverse. Mature-age students have enrolled in increasing numbers, particularly as enabling courses have made university entry achievable for people who have not completed Year 12 of secondary studies. The numbers of Indigenous and international students have increased, despite the setbacks to international numbers caused by terrorism and the SARS epidemic. Distance education continues to play an important role, and students have the opportunity to opt for mixed modes of study, including online education. Lifelong learning, by its very nature, should embrace diversity, and CQU continues to support this axiom.

How can a university such as CQU retain its own identity while catering for such a diverse student population? Part of the answer to this question lies with access and equity. In Australia it is an accepted principle that each and every individual has the right to enjoy the benefits of lifelong learning. During the latter part of the 20th century and into the 21st century, government policies have supported this principle at federal and state levels. The Nelson Review (Commonwealth of Australia, 2003), for example, is an indication of the Commonwealth Government's recognition of the need for enabling programs as a means to enhancing access to tertiary education. CQU is committed to the acceptance of all students without discrimination, provided they have demonstrated the ability to complete a degree course. Thus accredited enabling courses exist for prospective students who might be considered marginalised by ethnicity or socio-economic circumstances. Complete wheelchair access to all buildings and levels is provided, and special equipment is available for students with seeing or hearing difficulties. In accordance with its policy of providing for a multiplicity of particular needs for all students, apart from the faculties, CQU also has a number of divisions to cater for a wide range of student requirements.

An equitable system of payment for the cost of undergraduate education (subsidised by the Commonwealth Government) is provided by the Higher Education Contribution Scheme (HECS) whereby students receive an interest-free loan; the amount varying according to the academic degree. These loans can be repaid once the graduating students begin earning income at a set level. Theoretically, therefore, every person in Australia has the opportunity to access a tertiary education. In a predominantly working-class city such as Rockhampton, this is an important factor.

As an autonomous body, each university in Australia has the right "to specify its own mission and purpose, modes of teaching and research, constitution of the student body and the range and content of educational programs" (Australian Vice-Chancellors' Committee [AV-CC] Publications, 2000, p. 1). However, higher education in the 21st century is undergoing a continuous process of social, cultural and economic transformation. CQU may seem to be fairly remote in terms of geographical perspective, but it too is exposed to a number of significant issues, including market forces. Bailey (1999) distinguishes between the liberal tradition of tertiary education and the growing emphasis on economic rationalism. Thus CQU strives to provide quality, not only in teaching and research, but also in community service and management. For example, the university includes an Institute of Sustainable Regional

Development and also hosts a number of research centres. CQU is simultaneously an institute of learning and a business organization, emphasising both the reproduction and the transformation of the traditions of lifelong learning.

Australian universities are subject to a process of quality assurance. The Dawkins Report of 1987 advocated the establishment of a Unified National System (UNS), combining the existing universities and colleges of advanced education. The purpose was to set up a system of mass higher education whereby public universities would remain autonomous and attract government funding (Candy & Maconachie, n.d.). At CQU many students have identified themselves as the first members of their families to attend university. As Australian universities have grown larger and more complex, a national quality assurance body has been established.

The aim of the Australian University Quality Assurance System is to oversee a self-assessment process whereby universities assess their processes and outcomes against their own goals. An audit body, made up of representatives from the universities, government, and the community will undertake eight audits a year over a five-year cycle. A report on each audit is made available to all interested parties, and each university receives accreditation based on the results of the report. CQU, therefore, has been accredited as a recognised autonomous university, eligible for government funding subject to quality assurance.

The tertiary institution now known as Central Queensland University has a relatively short history; less than 40 years. In that time a regional CAE (College of Advanced Education), established as a direct result of community interest and lobbying, has grown into a university of international status. As CQU has become more diverse the challenges have multiplied. However, as part of a convergent system of Australian advanced education, where divergent interests are recognised and celebrated, the university continues to empower its staff and students in their quests for lifelong learning.

LIFELONG LEARNING AND UNIVERSIDAD CENTRAL DE VENEZUELA

Like Australia, Venezuela (with a population of approximately 24 million) has both public and private universities, with the former being divided into autonomous and experimental universities. All Venezuelan universities are bound by the regulations of the National Council of Universities (CNU), created in 1946, and of its technical office, the Office of Planning of the University Sector (OPSU), established in 1972. Venezuelan universities provide degrees of at least five years full-time equivalent study in professions such as architecture, economics, education, engineering, and medicine, whereas university colleges provide three-year full-time awards that are similar to Australia's diplomas awarded by Colleges of Technical and Further Education (TAFE). Like the United Kingdom but unlike Australia, Venezuela has one university specialising in distance education provision, established in the 1970s, although other universities have recently provided distance education and online learning as well.

Also like Australia, Venezuela's universities reflect its colonial and post-colonial history. For example, the Universidad Central de Venezuela (UCV), Venezuela's oldest university, was founded by Royal Decree of King Felipe V of Spain on 22 December 1721 as the Royal and Pontifical University of Caracas. On 24 June 1827 Simón Bolivar, the Venezuelan Liberator, and a colleague renamed the University of Caracas the republican and secular Universidad Central de Venezuela. UCV has currently more than 50,000 undergraduate and post-graduate students, 6,000 academics and almost 8,000 non-academic employees in nine faculties in Caracas, two faculties in the regional city Maracy, five distance-education centres, and 12 experimental stations in different regions of Venezuela.

In many ways Venezuelan universities continue to reflect and encapsulate the diverse political and socio-economic tensions and opportunities in the broader society. For example, during the military dictatorship of the 1950s, the universities provided a focus for opposition to military control that led to the government's appointment of UCV's rector (its chief executive officer) in 1969, an unprecedented example of political control of a traditionally autonomous institution.

"Lifelong learning" would generally be equated with "continuous education" in Venezuela, reflecting a strong emphasis on formal rather than informal education as both the sites of and the vehicle for ongoing professional education. For example, the Instituto Tecnológical in UCV's Faculty of Engineering was established in 1964 and currently provides two kinds of courses to both UCV students and interested clients from outside the university: short courses ranging from eight to 40 hours' duration covering such topics as the transportation and distribution of natural gas, and the supervision of civil works; and accredited programs through licensed agreements with, for example, the World Meteorological Organization. Both the courses and the programs are designed to equip Venezuelan engineers to acquire and maintain professional currency and standing, and to contribute to the nation's overall capacity to develop technologically.

Venezuelan Indigenous students attend UCV, and they benefit from a specialised support program. Most Indigenous Venezuelans live in the Amazonas region and the Orinoco River Delta, where no university is located, so UCV developed provision for students from those areas. Likewise, it is possible for residents of the so-called "informal settlements" or *barrios* that surround Caracas (as they do in the case of most Latin American capital cities) to attend university, provided that they meet the entrance requirements. In 1996 UCV began the Samuel Robinson Program, named after the alias used by Simón Rodríguez, Simón Bolivar's teacher, a social intervention program directed at enhancing the prospects of admission of students from low socio-economic backgrounds, who are of sufficient merit to enter UCV, but whose secondary school experiences might otherwise prevent them from doing so.

Also like Australia, Venezuelan universities are responding to government pressure to diversify their funding sources. While government funding is still the principal source of income for UCV, its staff members are encouraged to be entrepreneurial as far as possible. For example, staff members of the Faculty of Engineering's Instituto Tecnológical broker services for external clients such as conducting mechanical separations and comparing meteorological data collected by conventional instruments and automatic weather stations in terms of the accuracy and utility of the results.

NATIONAL CONVERGENCES AND DIVERGENCES IN LIFELONG LEARNING

In comparing the conceptualisation and provision of lifelong learning at CQU and UCV, we are conscious of Dyson-Hudson's (1972) dictum that "Comparison to be useful must be quite specific, quite detailed and very controlled", and that it needs to avoid "the charge of merely re-shuffling pieces of information we already have, for aesthetic rather than illuminating purposes" (p. 23). Similarly, we are aware of Portin's (1998) assertion that "One of the problems of international comparisons is the rush to conclusions that are not based on careful comparative methodology" (pp. 296-297).

With these qualifications firmly in mind, we have selected Bailey's (1999) distinction between "the liberal tradition" of education and "the business case" for education (pp. 10-11) as the basis of our comparison. From that perspective, both CQU and UCV demonstrate their origins and their development in "the liberal tradition" of education, but that demonstration also signals their very different cultural, political, and socio-economic locations. UCV is Venezuela's oldest university, and its establishment reflected initially the Spanish Empire's and subsequently the liberated nation's assumptions about higher education as a formal process of enlightenment and of empire, and then nation, building. Although the distinction might be seen as largely semantic, this historical factor also links with Venezuela's use of "continuous education" rather than "lifelong learning" as a key contemporary educational discourse, suggesting a more formal and potentially homogeneous approach to the forms of education that follow an initial undergraduate degree.

By contrast, "the liberal tradition" of education for CQU constitutes something of a paradox. On the one hand, CQU's foundation campus in the Queensland regional city of Rockhampton has at times been positioned somewhat uncomfortably in a community with one of the lowest take-ups of higher education in Australia. This has meant that the university has had to take the lead in promoting the benefits and values of university provision to its local community. On the other hand, CQU's rapid expansion from a single-campus institute of advanced education to an integrated regional university with campuses in

five Central Queensland communities to a national and global higher education provider with international students in both Australian metropolitan cities and overseas centres reflects a capacity to innovate and, potentially, to transform the concept of "the liberal tradition" of education in diverse forms that in turn suggests at least some degree of overlap with increasingly heterogeneous forms of lifelong learning.

It might also be argued that CQU's rapid expansion outlined in the previous paragraph reflects the university's responses to increasingly urgent pressures to engage with "the business case" for education. The relatively low take-up of university education in Central Queensland has meant that CQU has seen the need to enter the global higher-education market as a means of consolidating and expanding its funding base. This has met with mixed success, with some ventures being considered more financially successful – as well as educationally sound – than others. The commercialisation and globalization of lifelong learning provision by CQU – as for most other providers – have not been as straightforward as initially hoped.

"The business case" for Australian higher education has been accelerated under the current politically conservative government, although it should be acknowledged that the previous Labor government initiated this process. The situation in Venezuela is rather more complex: the global reach of economic rationalism in university governance has encountered, and to some extent been countered by, the interventionist, left-wing government of President Hugo Chávez Frías. Many commentators have analysed this encounter in terms of an increasing polarisation and politicisation of Venezuelan university education. For UCV, this has meant delays in the provision of government funding and government ambivalence about the degree of political support provided by the nation's oldest and in many ways still the most prestigious university. Many UCV staff members have responded to this situation by combining what they see as their primary mission of conducting research and undergraduate and post-graduate teaching with community outreach interpreted in terms of entrepreneurial links with wealthy private clients (such as the Faculty of Education's strong associations with the crucial Venezuelan oil industry).

At the same time, both CQU and UCV have established what we argue are places where lifelong learning can and should be nourished. At CQU, CQU Connections is a program established to provide support in university access for students from low socio-economic backgrounds, while there are specially targeted pre-undergraduate programs for Indigenous Australian students, mature-age students, and female students who would otherwise be unlikely to attend university. At UCV, the Samuel Robinson Program has also proved effective at enhancing university admission for students who would not normally attend, and who would therefore have fewer lifelong learning options, if the program did not exist. In both institutions, these places are sites predicated on the assumptions that university education should be available as broadly as possible; that such education must increasingly take on 'lifelong' and 'lifewide' dimensions; and that the playing field is by no means at the same level for different groups and individuals within Australia and Venezuela.

More broadly, what this necessarily brief and selective comparison demonstrates is the circulation and impact of multiple discourses associated with "lifelong learning" in CQU/Australia and with "continuous education" in UCV/Venezuela. Some of these discourses reflect the universities' strong cultural capital in their roles of authorising sites of formal learning and of accrediting the forms taken by such learning, leading to varying degrees of accessibility and flexibility in the pathways among and between educational systems and employment sectors. Other discourses highlight lifelong learning as professional growth and development, again stressing the formal elements of such learning. Still other discourses have a utilitarian grounding, by emphasising lifelong learning as the capacity building and the skills acquisition necessary to survive and thrive in an increasingly mobile and volatile labour market. For us, among the most significant discourses attending lifelong learning are those associated with opening up diverse forms of such learning to as many different groups and individuals as possible, whereby "lifelong learning" and "continuous education" might be seen as linking with "access and equity" and with "social justice". We contend that these kinds of discourses can be discerned in the interplay between "the liberal tradition" of, and "the business case" for, education (Bailey, 1999, pp. 10-11) as experienced at CQU and UCV.

CONCLUSION

Perraton (2000) made the following statement about the impact of globalization on open and distance learning in the "developing world":

> …globalization's main effect has not been in the development of international policy for open and distance learning, or the establishment of specialised agencies, or the development of common courses, or in international enrolment but in accelerating and easing the diffusion of innovations.…National policies, and national perceptions of the strength and weakness of distance education, remain the major determinants of its shape. (pp. 175-176)

Perraton's statement encapsulates something of the ambivalence that we feel about national convergences and divergences in lifelong learning, as reflected in this paper's tale of two universities. On the one hand, at a broad level there are significant similarities in how the two institutions have grappled with the challenges of "the liberal tradition" of, and "the business case" for, education (Bailey, 1999, pp. 10-11). On the other hand, national differences in approach to conceptualising and valuing "lifelong learning" and "continuous education" have had a considerable impact on the manifestations of those phenomena at the two sites. As well, differences in these manifestations can be traced to locally constituted engagements with national and international forces.

What is the significance of this tale of two universities? Does it tell us anything new? Does it take us beyond existing knowledge and suggest anything about possible future forms of lifelong learning? We believe so. In particular, we contend that this comparison of lifelong learning at CQU and UCV can – in combination with other nationally and institutionally based comparisons – contribute productively to the ongoing interrogation of what one of us and a colleague identified as:

> one of the most vital of…recurring educational issues…[:] education's potential role in replicating existing socioeconomic inequities and/or in challenging such inequities and transforming them into more equitable relationships between knowledge producers and consumers. (Kwon & Danaher, 2000, p. 111)

That is, we argue that investigating national convergences and divergences in lifelong learning policies and provision must include a substantial focus on identifying and evaluating who the winners and the losers from such learning are, and the impact of lifelong learning on their lives and their life chances. We assert further that the approach adopted in this paper constitutes one among many potentially fruitful means of attaining such a focus, and more broadly of celebrating and valuing those places where equitable and meaningful lifelong learning can be nourished and can flourish.

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REDEFINING VET IN SCHOOLS – ADVANCING THE MIDDLE CLASSES?

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ABSTRACT

The narrowing of social gaps in educational outcomes has been a general theme of recent education policy. This paper will focus on a case study to draw on a deeper understanding of how reforms to Vocational Education and Training (VET) in schools in New South Wales (NSW) are impacting on class issues, and how families from different, or mixed, social-class groupings articulate with schooling.

INTRODUCTION

This paper will report on a three year Australian Research Council (ARC)-funded project into vocational education and equity in senior secondary schooling in New South Wales, which was completed in 2003 (Crump & Connell, 2003). The research explored the relationship between VET and young people's futures, by investigating the reforms to the NSW external Year 12 exam, (the Higher School Certificate [HSC] assessment process) in which VET courses gained a new and more challenging profile. The intent of the "Securing Their Future" reforms was to make secondary curriculum more socially inclusive and thus set up young people with broader options for lifelong learning and employment, also articulated in the NSW "Charter for Equity in Education and Training" NSW Department of Education and Training (1996). This was to be achieved by reducing distinctions between programs of study that tended to separate privileged students from others, mainly through matriculation status.

THEORETICAL AND METHODOLOGICAL FRAMEWORK

Recently, international studies of the middle class are re-emerging as explanatory accounts of the conceit of contemporary educational reforms. This paper will indicate how these reforms to matriculation in NSW only weakly counter a "poverty of expectations" about lifelong-learning options based largely on class lines. While accepting responsibility for improving educational options for young people over their lifetime, the state remains a poor distributor of those options. Policy intent is, to a large degree, defeated by the complexity of critical and pragmatic problem solving in educational provision, and the interplay of factors beyond schooling and within young people's lives.

In 2003, research into social class was restored to the education policy research agenda, now refreshingly looking out the middle classes and policy reforms such as the marketisation of education by Power, Edwards, Whitty, and Wigfall (2003) and Ball (2003). Power, et al. (2003, p. 1) deliberately mimicked work from the 1960s on working class families and disadvantage, this time "exploring the dynamics and dilemmas of 'expected' success and human situations of over 300 academically promising" young people. Power, et al. (2003, p. 151) also report that, despite the policy talk of 'standards being the key', structures continue to facilitate or hinder educational advantage, regenerating social divisions, limiting competition, and restricting access to the most desirable credentials. Ball (2003) focuses on particular "moments" in the policy cycle where parents, in a relationship with the state, attempt to exploit structure and rhetoric to the educational advantage of their child. Ball (2003, p. 5) argues

that the middle class is worth investigating because it is a major phenomenon, though cautions that it is a class beset with contradiction and uncertainties, and has been so throughout the modern age.

In this paper, expanding on the conceptual work of Power, et al., I look at the "paucity of expectations" of success or failure, through the eyes on one rural, mixed-class community. My researched "moment" is subject choice for, and the experience of, senior secondary schooling, within a participant matrix of all socio-economic status (SES) groups, race, gender, and ethnicity. Thus I also use Bernstein's (1996) classifications that ascribe certain educational identities to children, actively sought, and contrasting to those of other classes. Given this recent research overseas, it is likely that social class remains a key element in social and economic reproduction in Australia, with real and symbolic struggles occurring through the practice of these identities, often best expressed in matters such as school choice. It is my contention that similar struggles occur within vocational education and training in schools as part of a broader experience of preparing for lifelong learning.

METHODOLOGY

Kingston High School is situated in an outlying "industrial suburb", about six kilometres east of the main township (*note*, all names of people and places are pseudonyms). It is a "modern" school, with well-designed buildings, lots of space, and generally, good facilities. Currently, there are less than 800 students, with student numbers undergoing a steady decline from over 1,000 in the mid-1990s. This school was chosen on the project matrix as *Rural : Low VET : Medium SES* (the other 7 case studies being variations of this matrix). The only reason the project categorised the school as "low VET" was because of the comparatively small number of Industry Curriculum Frameworks (ICFs) undertaken in the first year of the new HSC and, as has been mentioned, this was a deliberate strategy of the school to do it right. Our initial measurement was not an accurate account quantitatively, let alone qualitatively!

The VET and general staff were very supportive of, and interested in, the project during our visits, though naturally it was only a small part of their thinking and day-to-day occupational concerns. Our visits were noted positively in the newsletter to parents, etc., and we became known and welcomed faces at the school reception area, staff room, and school grounds. Interviews were conducted with eight staff, twenty-one Year 11 students, eleven Year 12 students, and four parents (*note*, interviewing figures are lower than those for other site reports due to the lower number of VET-in-Schools [VETiS] Courses on offer at Kingston, especially in 2001). Site visits and interviewing were done in 2000 and 2001, with follow-up interviews in 2002. In 2002, 45 Year 11 students were doing a VET course (out of a cohort of 101); and 32 Year 12 students were doing a VET course (out of a cohort of 110). Both the Year 11 and the Year 12 groups are doing three ICFs taught at the school: "Hospitality Operations", "Building and Construction", and "Metals and Engineering". Other VET and TVET (VET for school students conducted at a College of Technical and Further Education [TAFE]) options were available to students at Kingston High.

The project began with the full support of the then principal who had spent some time building up VET options and resources in the school. This principal's support for VET was acknowledged throughout the school and made our access easier and our presence valued. Two of the project staff visited Kingston High School to conduct interviews, and on other occasions to observe and participate in other activities, e.g., the Year 10 Parent Information Night (for subject selection to Years 11/12), the school's courses and careers night, classroom observations, sitting in at staff meetings, and mixing with staff at morning tea. The project liaised through one staff member responsible for VET implementation but worked broadly across the school. The project team developed full analytical profiles of each of the eight case studies, which were then triangulated through a variety of presentations to academics, VET school coordinators, and education and curriculum bureaucrats.

CASE STUDY

Kingston provides cheap housing and a variety of traditional trade opportunities through employers buying up cheaper industrial land. Many of the VET students we interviewed were hopeful to get employment locally. One student, "He was a guy out of left field", found work in Wagga but, as Doug (Metals) told us, most are "thinking of work at the bottom of Kingston

Street. Anything to do with metal would be fine, except [job prospects] are not in the immediate proximity!". However, Kingston should not be characterised simply as a poor, outlying, disadvantaged area. Some people live in a new private housing estate. Most houses show pride of ownership, with gardens generally well-tended, and late model, or well-maintained, cars in most driveways, though undercurrents of the negative effects of poverty are there to be found.

Site visits and interviews suggested that most students were happy to be at school and were supported by their parents in the choices made about schooling. The playground was noisy but generally good-humoured and the VET classes, at least, were active and constructive places where teachers were able to teach, and do so with some satisfaction. However, the growing number of Indigenous families moving into the area, and filling Kingston's feeder schools, has contributed to "white flight" even though the nearest government high school does not have a stronger reputation for academic achievement than Kingston. The school generally hails its successes with Aboriginal students, and one of the most informative and insightful students interviewed was an Aboriginal student doing Hospitality (one of two for the first time in 2001). Poverty and race were not issues openly addressed, but lay beneath the surface in a number of topics during interviews and observations. Ethnicity was not an issue at all, at least in our data. Non-English-Speaking-Background (NESB) students were conspicuous by their absence in all our rural cases.

KINGSTON HIGH SCHOOL

Kingston High School was built at the end of the 1970s. The school's motto is "Truth, Courtesy, Co-operation" and it advertises itself as "A Languages High School". However, the school is known in the community as offering a sound and diverse senior curriculum, rather than any particular specialisation. The school brochure describes Kingston as seeking "excellence through a caring school with high academic standards and a wealth of cultural, sporting and social activities". The school has not tried to compete with the other local government secondary school, but rather to cooperate and share resources, curriculum options, and professional development. There is a degree of self-interest as well as idealism as both government high schools face very stiff competition from a high number and wide variety of non-government options in the region, from low-fee to high-fee Catholic, Anglican, and fundamentalist-Christian schools. Recently, the Catholic Education Commission has bought land just behind Kingston High School to build a second Catholic school for the area. Kingston's teachers see this as an aggressive action.

STUDENTS, FAMILIES AND CLASS

Students at Kingston come from a wide community perimeter, and school zoning does not appear to operate as rigidly as it does for comprehensive government schools in most metropolitan areas; and even in O'Connor (a town nearby of similar size to Kingston).

One teacher observed,

> When I first arrived it was. If you didn't live in Kingston you could not get a place here. But then we were over 1,000 students at that stage, and probably closer to 1,200. There just wasn't the room. It was a pretty popular place. Now there's just been a steady decline [in numbers, so zoning becomes irrelevant]. [Once] we could be picky but now I think we just need to try and keep the numbers up a bit, so we'll take them if they want to come. (Tony, Information Technology and Communication [ITC])

Zoning encouraged the mistaken belief that all government comprehensive schools were identical in their provision and opportunity. Parents and carers know this is not true, which partly explains why they are happy to shop around within the government system, or beyond if the government system is rigid and unresponsive. Parents and children know that geographical access is unequal, in Sydney and the Bush, so are willing to flout the zoning rules or step away from them by going to an alternative provider.

Students travel up to an hour, and up to 50 kilometres, to get to Kingston and this has an impact on the school day. It is very difficult to offer classes before or after school, as school buses from these country areas rule the timetable. The school organizes itself so that every Thursday afternoon students are free to do a long block of their VETiS, attend a TAFE, or go to a LinkUp course. Students are trusted to travel widely, and outside school hours. There are misadventures, and some students do not always make it to the TAFE; but these are

students known to teachers as being unresponsive to school-based education but as having enormous potential for lifelong learning if they are invigorated by the adult atmosphere of colleges of TAFE.

The level of academic achievement in the school has always been mixed. But now the mix has changed, and VET is seen as having "saved a lot of our kids". As one staff member noted,

> When you look at a student, behaviour-wise … often kids who hated school before [their] self esteem improves. [VET is] a positive thing for all kids. (Kath, Hospitality)

The school unobtrusively assists many students with costs for VET courses. While this "hides" poverty, it preserves people's dignity so it is not surprising the commitment of students to VET courses at Kingston has been strong. There is a significant allocation of resources to VET and students become committed and loyal to these courses (and their teachers). Parents seem to encourage and value what their students are learning in VET.

Many staff have been at the school for a long time. Kath (Hospitality), for example, has been there since 1980. However, one of the VET teachers has come from a trade and TAFE background. Both backgrounds work. While Kath was able to bring "20 years of teaching at this location" into making the new course work, Wally brought his knowledge of industry and his links with TAFE teachers and procedures. Both teachers brought additional opportunities to their students and were highly regarded for their dedication and care. VET staff feel valued and supported, as Kath explained,

> We are held in pretty high regard by most of the staff which is nice. Because I hear sometimes when I go into other schools that the [VET] teachers feel they count for nothing. We get a lot of support here because they see what we do is important, that helps a lot. It must be terrible to be seen by your colleagues as having the inferior course. Our principal really supports us. (Kath, Hospitality)

The mother of a Year 11 Hospitality student named Emily told us her daughter wanted to be a solicitor,

> [but] … she's probably worried about the situation of how to pay for it. [We're a] below-average income family. Then she thought "I'd love to teach health or aerobics" … She works at KFC and that's mainly because of our money problems … I can't provide her with a fairy-tale ending. That's the way it is.

Emily's ambition to be a solicitor was not unrealistic, given that her mother's background is traditional middle class, with one of the mother's brothers employed as a heart specialist and another as a computer scientist. But Emily's ambitions are unsustainable in her family situation. Deirdre, Emily's mother, told us that she married for love, "I wanted to get married and have children. That was my life's ambition. I didn't really care about anything else". Now Deirdre understands, with a degree of bitterness, that "My sister and I are nothing [laughs]. We're nothing, but yeah, you know".

This reflects the penalty women played in middle class families in Deirdre's generation, with gender roles segregated and life options for young middle class women restricted compared to those for men. Male career goals were seen as more important than those of daughters – whose goal was to "marry well"; that is, marry someone like their brother or male peers who did go on to higher education and to a well-paid job and raise a family. Deirdre did not "marry well". Deirdre's husband was raised very differently.

> … he was always told he was going to be nothing, and he often says to Emily when he's in a bad mood… "Oh, what are you worried about, you're going to be nothing but a check-out chick" …. Michael came from a very poor family, you know, 6 children. His mother had to go to work. No one was home. He had to raise his sisters. He's a good man, but he's got this attitude that I don't understand, and it reflects on the kids. I think he has done damage to my son, who's 21, and he hasn't become anything. (Dierdre, student mother)

While Deirdre sees her marital relationship based on love, class differences bring tensions to decisions about Emily's education. Despite all this, Deirdre sees Emily as different to herself; "I want her to stay that way. She's just great!"; and sees her as possibly Australia's first female prime minister (if she could get into Law).

Emily had a friend who obtained a traineeship in Hospitality and, according to her mother, Emily was very envious and said "She's so lucky, I would love that!". But her mother said "No, you're not leaving school yet. Maybe after Year 12"! This is a wonderful example of how a Kingston parent managed a difficult (though loved) daughter through a mix of humour and guidance.

Deirdre's family depicts a type at Kingston that finds VET attractive. They are professional or self-employed parents who have a lifestyle at or near Kingston that is different to the lifestyle and choices they would have made in a metropolitan area; that is, less than "middle class" in the sense that living at or near Kingston generates a different environment, and thus different life choices for them and their children, despite their class background. This raises the issue, already demonstrated for the UK, where middle class students can "take over" VET courses once they become more "academic" and mainstream, as in the new HSC. At Kingston, it was the case that the students doing VET courses came from families with some composition of middle-class background and values, but VET was not necessarily a second choice, filler, or "down time" subject.

Many other students doing VET were from families with at least one parent who had a professional or tertiary qualification. One of the biggest surprises to both interviewers (given the stereotypes and labelling we were operating on) was to find out that some of the parents of students we interviewed from farms, for example, were highly qualified and widely talented people who were mixing middle class occupations – and Sydney weekday jobs – with a rural lifestyle. Kingston's broad range of options and curricular program flexibility is being used to provide options and opportunities for students aimed at keeping them in education and training – thus providing a basis for improving students' life chances.

In the case of the mothers interviewed, tertiary qualifications had fallen into disuse, though the qualifications were there for use later on and as an example to their children. Most students at Kingston have part-time work to provide money to the family and themselves, and there is at least one example of a student operating a business. None of the students I interviewed felt that their friends saw them as "second-class" for taking VET classes. This may be a result of being a member of a small, close student body, but I believe that there are broader factors at work. It does not mean that the traditional divide between general and vocational education has been bridged at Kingston, but it suggests that there is an increasing individualisation, and consumerisation, of education whereby people's choices are seen as a personal matter, not a community or social event. Education in Australia is being conceptually challenged as a public good, and increasingly re-conceptualised as a market commodity. There is good and bad in this, but it is a difference of perception rather than a contradiction because there has always been an education market.

DISCUSSION

The failure to identify an acute academic-vocational divide in staff and student attitudes at Kingston suggests that, in this case study, the traditional hierarchy of courses is becoming less relevant to students making subject selections and, perhaps, less a marker of school and career choice status, and social class, as the mix of credentials and pathways to and through careers expands. Senior secondary "success" as traditionally defined (that is, by a high university admission score [UAI] that is rewarded by entry into a high-status degree program) thus loses power as a determinant of social standing, even while still in the senior school. Wanting to own a McDonalds' store, as one of the students, Anthea, hoped, offers personal, material, and career rewards unimaginable through traditional working-class education and training routes; no longer relying on school to achieve such an outcome. Retail traineeships at McDonald's, as elsewhere, can lead to Australian Qualifications Framework (AQF) qualifications, as well as management training up to an advanced diploma. Anthea experienced being treated like an adult and felt she had begun a structured process of lifelong learning that would bring personal and economic rewards.

As demonstrated by Ball, Maguire, and Macrae (2000), the educational pathways and credential building practices of young people in the 21st century follow obtuse, tangential, and sometimes improbable trajectories, aided and abetted by further and higher education sectors keen to enrol students, often outside the matriculation process. Students' talents are being increasingly recognised in contexts outside systemic educational institutions. VET students are using work to make sense of schooling, as well as to

further career goals in a way that traditional schools could never assist or enable. The VET staff at Kingston know this and are able to put that knowledge to use because the school's administration provides the flexibility and where-with-all to do this.

If VETiS leads to positive, rewarding, and properly remunerated employment, as it can (see te Riele and Crump, 2002), then being in a selective school – or "out-of-zone" in a government school in a privileged area, and thus attempting to "maximise your UAI" – may be seen as an acceptable choice for some, but not necessarily the best or only choice for all. This shift in perception, if more widely spread, could reaffirm the value of a community comprehensive secondary school, an ideal never fully expressed. VET at Kingston was a first, and positive, choice for most students, appearing to suit the practical and entrepreneurial qualities needed to live and work – or to simply "make do" – in a rural/regional setting. But a school's curriculum can create a perception of "choice" – even when that choice is narrow.

CONCLUSION

Any school's subject selection process shapes an apparition of a brighter future for young people, but this apparition masks powers and constraints shaped both by the education system (Crump, 1995), and the socio-economic and cultural milieu of that school's community. Social class and race is sharply defined in a regional setting like Kingston, with specific geographical boundaries for the town and what schools can do or offer. Kingston's work on creating a broader and more relevant senior school curriculum was a direct and explicit attempt to provoke a challenge to the non-government sector and provide a long-term future for its' students, largely through providing a base for lifelong learning and credential building (Crump, 2002). It is possible VET in the new HSC in NSW is a policy that evades the need for fundamental reform to schools, and lacks reflexivity within existing institutional structures, but at least it is not a rhetorical fallacy. The next question is will a debt-averse working class be able to pay for further and higher education now fees are the key to lifelong learning?

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PROVIDING ACCESS TO FURTHER AND HIGHER EDUCATION IN REGIONAL COMMUNITIES: THE CART OR THE HORSE?

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ABSTRACT

This paper explores lifelong learning through the provision of regional and rural education in relation to national and global trends. The paper draws on the experience of the Centre for Regional Education, Orange; this centre being a multi-sector initiative that focuses on improved access to further and higher education, especially for regional and rural students, through an expanded range of degree programs, curriculum pathways, and resources.

INTRODUCTION

The re-shaping of post-compulsory education has become an important agenda item for education policy in Australia. Transnational education, the impact of new information and communication technologies on education, and the definition of educational services as "cross-border trade" are examples of the way in which this issues can be located and conceptualised. Recent reports in this area include the UNESCO (2001) studies in higher education, *Transnational Education and the New Economy*, Mazzarol and Soutar's (2001) *The Global Market for Higher Education*, and Duke's (2002) *Managing the Learning University*. While worldwide contexts pose new challenges for educational policy and practice in Australia, they also provide new opportunities for better positioning Australian institutions in ad hoc and ill-formed competitive markets. One of the strategies that the dynamics of the marketplace have brought about in Australia is the reshaping of identity of educational institutions. One example is multi-campus, cross-sectoral partnerships and the question is whether these partnerships involve institutional shifts so that existing paradigms of delivery, pedagogy, and assessment are being altered in favour of better outcomes for previously disadvantaged students.

This paper will explore whether boundaries between education levels, sectors, and providers are being broken down through the formation of new institutional identities that propose better access to further and higher education in rural and regional communities. Of direct significance is a cumulative and extensive body of work from the U.K. on educational choice, "16+" options and trajectories, youth studies, and policy activism. This work is most recently portrayed in a study of access to higher education (Ball, Davies, David, & Reay, 2002) that investigated internal status differences through students' positive and negative choices in further and higher education. This work is based on well-founded theoretical precepts taken from Bourdieu's typology of "classification" and "judgement" (Ball et al., 2002). The findings suggest that choices are made through differently determined "opportunity structures" that relate to socio-economic and socio-cultural factors. Thus "choice" is now better understood as a meeting point for individual biographies and post-compulsory-education institutional identities, or disengagement and disappointment[1].

There is a close synergy between Ball's notion that choice in education is a form of extensive problem-solving (with respect to power and constraints) and the findings from cumulative "pragmatist" research in Australia on choice in primary and secondary school (Crump, 1997a), as well as vocational education and training (Crump & Anderson, 1998). The theoretical framework has been built around a set of premises that include acknowledgment that there are contradictory positions shaping policy, but that it is possible to unify various oppositions (because they are "false dualisms"); for example, contradictory positions between further- and higher-education institutions, governments (national and state), and

[1] Other work supporting this position has been undertaken by the same group of authors on internal marketing (Maguire, Ball, & Macrae, 2001a); the refusal of adulthood (Maguire, Ball, & Macrae, 2001b), choice, pathways, and transitions post-16 (Ball, Maguire, & Macrae, 2000); and parents, privilege, and the education market-place (Bowe, Ball, & Gewirtz, 1994).

communities or consumers. In particular, it is important to understand whether, and to what extent, multi-partner campuses achieve improved outcomes and to examine if they achieve them more efficiently than traditional institutional structures. Also, it is important to discover whether these new arrangements are available more broadly to the community, given the human and capital costs involved in establishing new ways of post-compulsory provision.

EDUCATIONAL BORDERS

The dramatic increase in retention to Year 12, from 35 percent in 1980 to 73 percent in 2001, has had important effects on post-compulsory education provision in Australia. The changing student population, and the changing purposes of senior secondary education, have led not only to diversity in curriculum and pedagogy within existing secondary schools, but also to diversity in institutional arrangements (see DETYA, 2000). One of the NSW Government's election commitments in 2003 was to break down barriers between schools, TAFE colleges, and universities in order to maximise cooperation across the public-education sector. This paper discusses prospects and problems of the relationship between senior-secondary education and other educational sectors, which traditionally have functioned separately. In recent years, senior-secondary education has been re-aligned; in some instances, with further education rather than with junior-secondary education. The increasing diversity of educational provision for young people is redefining post-compulsory education. This is experienced most clearly in multi-sector campuses and through inter-sectoral arrangements and has the potential to enrich learning cultures in rural and regional Australia.

There is very little evidence-based research on local choice and flexibility in post-compulsory education compared to the wealth of research about school choice undertaken worldwide over the 1990s. Generally, it is believed that, being non-compulsory, the option of choice beyond schooling is self-evident (Crump, 2000). Geographical, class, gender, race, and cultural variables at play in choosing post-compulsory education (Dwyer & Wyn, 1998) are well documented. Yet, there is this new phenomenon of multi-sector partnerships that is recasting these variables. In addition, there is a need for new types of document analysis and conceptualisation of this variation of a market ideology for education. For example, in the UK, (Ball et al., 2000) have shown how privileged students take more of the general education options whereas, disadvantaged students tend to take more of the VET (Vocational Education and Training) courses (see also Crump, 2004).

Historically, these have been segmented on class and gender lines. OECD (Organization for Economic Cooperation and Development) research shows that for increased job chances, the most significant stage is upper-secondary education; its graduates a third less likely to be unemployed in their early 20s than non-completers (OECD, 1998, p.8). For Australia, Anderson, Clemens and Seddon (1997) have shown that students in VET have different learning styles to those in higher education; a difference that may well exist earlier between senior high-school students. Institutional amalgamations in higher education have been researched earlier, (for example see Harman and Meek, 1988), with processes and outcomes in five countries being the basis of their study. While shaped by the 1981 reforms in Australia, this research had great relevance for the subsequent unification of higher education and colleges of advanced education after 1989. Experience from the Netherlands, for example, where 314 mostly mono-purpose institutions were merged into 51 large multi-purpose institutions, was crucial to the development of policy work in this area in Australia.

Such was the pace of development in Australia in the early 1990s, brought about by further and higher-education amalgamations, that the National Board of Employment, Education and Training (NBEET) provided a review of practices for credit transfer on behalf of the Commonwealth Government (NBEET, 1992). As early as this, the dual concerns of efficiency and equity were expressed, and principles were adopted by the Australian Vice-Chancellors' Committee. The general critique was that credit transfer had been conservative and ad hoc, and that this needed to change if post-compulsory education was going to be more flexible about accreditation, assessment, and qualification procedures, and thus provide broader choice options for potential students from all age groups and a wider community. However, most of this remains unsystematic and is undertaken on a student-by-student basis. More recent work was undertaken by Wheelahan (2000) who wrote a report for the National Centre for

Vocational Education and Research Ltd. on "bridging the divide" through developing the institutional structures that most effectively deliver cross-sectoral education and training. Her conclusions were significant in that they provided an overview of tertiary education in Australia, with a mapping of VET, and an exploration of the policy challenges facing "boundary spanners".

CROSS-SECTORAL VENTURES

One expression of this new milieu in education, helpful for explaining the broader picture, is the emergence of cross-sectoral partnerships involving secondary and other providers of post-compulsory education. The initial move – in Australia and worldwide – has been to take a small, regional, satellite campus of a university and reshape it into a multi-disciplinary, cross-sectoral campus. These satellite campuses are often the consequence of an earlier rationalisation of tertiary education (such as the Dawkins' 1989 "unified system" for Australia – a rationalisation influenced itself by rationalisations elsewhere, such as in Europe earlier in the 1980s). In these cases, the university typically initiates collaboration with senior secondary education and with technical and further education providers, though local factors conducive to such a move need to be present for any courting to be successful. Alternatively, the partnership arises from the search for an identity within a "new university", previously a college or polytechnic.

These reshaped identities are represented as a response to demands for greater choice and flexibility from clients – students, families, employers, and governments as well as broadening the client base to make these campuses more cost-efficient. While moves in this direction have been accelerating within existing institutions, they are now most visible in new cross-sector institutions. Though the reasons underlying the origins of new multi-sector identities are remarkably similar, the origins are quite varied – suggesting potential for conflicting outcomes, which need to be understood. This became more urgent given the Commonwealth's support for multi-partner campuses and educational precincts in the recent *Higher Education at the Crossroads* issues paper (DEST, May, 2002).

An exemplar of the former strategy is the restructuring of the Orange Agricultural College (OAC) by the University of Sydney (USyd). The University of Sydney's Orange campus is located on a 500 ha property just north of Orange in the Central Tablelands of New South Wales. Orange Agricultural College was opened in 1973 as a College of Advanced Education, and its foundation courses were in the area of farm management. The first enrolment comprised 30 students and enrolments grew consistently during the next 13 years to the peak enrolment of 1300 persons of whom approximately 1000 were enrolled for study by distance education.

The OAC was inherited by the University of Sydney from a failed "unification" with the University of New England, and in 1999 it was restructured into a single-faculty entity as "The University of Sydney, Orange" (UoSO). Initially, all college programs and staff were formed into a Faculty of Rural Management (FRM). In 2003, the FRM was complemented with new programs in the arts, sciences, information technology, and pharmacy, bringing 80 new students a year on to the UoSO. At the end of 1999 the operations at Orange were restructured and the Faculty of Rural Management replaced the former Orange Agricultural College. In 1999 The University of Sydney approached the NSW Department of Education and Training to discuss the possibility of establishing a joint educational facility at Orange. By early 2001 recommendations were made on specifications for a multi-sector educational facility, located on the UoSO campus site. The final mission statement, developed in 2003, is, "To create and provide greater learning flexibility through high-quality, accessible education via a cross-sectoral partnership."

Features of the Centre for Regional Education, Orange (CREO) include a significantly enhanced range of courses offered by USyd at the Orange campus. Faculties from the University of Sydney will develop an increasingly significant presence in Orange, in both an actual and virtual modes. This will be done via,

- a significant increase in curriculum cooperation between schools, Western Institute and USyd, including articulation of qualifications and embedding of WI curriculum items into USyd and UoSO programs;

- the creation, documentation, and marketing of learning pathways, from Year 11 to postgraduate degrees. This will be an ongoing process, ensuring that the CREO curriculum reflects community needs;
- an increase in the number of students accessing educational opportunities in Orange, and an increase in the retention of students;
- the developing use of technology to facilitate distance education and alternate delivery models. Videoconferencing and online delivery will be key technologies;
- a clearly defined partnership for the leadership and management of the CREO. A model for the CREO will include a commitment to growth that enhances and ensures appropriate and relevant integration of curriculum, personnel, and facilities;
- a commitment by all parties to the sharing of relevant resources and facilities;
- the relocation of some TAFE facilities to the Orange campus. As a second stage WI is also considering locating other facilities, relevant to the "site curriculum", on the Orange campus;
- the establishment of a senior high school on the Orange campus (the preferred option of the CREO partners). The school would cater for approximately 600 Year 11 and 12 students, and may grow;
- the enhancement of cooperative industry ventures.

While in 2002 there was a monoculture of agriculture students, from 2003 there were liberal studies and pharmacy students, and in 2004 there are arts, science, dentistry, and nursing students doing full or partial degree completion at Orange, as well as second-year pharmacy students. From 2005 there will be education students and, possibly, social-work students from 2006. Supported by a major capital-works program, these students from new disciplines are transforming the campus in size and make-up – adopting the best features found on a rural campus (hospitality, lifestyle, affordability) but driving adaptations towards a university culture that is not yet in evidence (research focus, scholarship, extramural activities) and a student body nearly as diverse as that found in most post-compulsory settings. The teaching of animal studies, veterinary science nursing, and equine studies by TAFE adds another dimension to the staff and student body that is having a profound effect[2].

THE CART OR THE HORSE?

Perhaps, it is timely to pause and ask what should come first in driving these changes, the cart or the horse? This paradox is worth unravelling as new research is required to determine whether organizational, management, and curriculum changes – in this instance through the formation of cross-sectoral, multi-level educational partnerships – impact on the traditional groupings of students in a distinct manner, and open up access to non-traditional clients for further and higher education. These phenomena can be observed at the intersections between social, economic, political, and cultural shifts currently being felt sharply across Australia and internationally in relation to changing needs and expectations. Such new expectations provided the springboard for the different sectoral partners to want to shape these initiatives. However, policy studies need to look at educational reform through organizational dynamics and institutional policy when researching cross-sectoral, multi-level partnerships.

This is an important problem as – until now – not enough time has elapsed for detailed higher-order evidence to be available for collection from these new forms of post-compulsory education. Earlier research has shaped a list of contradictions in the management of choice and a variety of factors related to the politicisation of education, changing educational demographics, less secure career structures, performance appraisal, and competencies and standards referencing for students. New studies are required to reassess these issues in new contexts. For example, the notion of flexibility has been the key to these contradictions, with the consequent opportunity for post-compulsory education to be more responsive to existing

[2] Two pertinent international predecessors, formerly agriculture colleges, are the University of California, Davis, and the University of Wageningen, Netherlands [WUR] – both now multi-discipline universities of high repute. Both maintain a rural focus in their courses and remain responsive to their local communities, but recognise and serve larger national and international purposes and clients. The University of Sydney's Orange campus shares these objectives and mirrors the WUR vision to provide "Multi-disciplinary education in an international setting".

actors in policy, as well as more accessible to a wider range of voices from the community and employers.

International research and theory has recognised how the institutional functioning of schools, the cultural content of curriculum, and the pattern of relations between families and schools, are important sources of educational outcomes (Connell, 1994). What is occurring now, though barely researched, is a reverse articulation of this process, made up of new flows of students between sectors to serve lifelong learning planning and provision, regardless of the structures and functions of the original institutions; something best understood through international comparisons. Also, in the last half of the 1990s, there arose, a need to revamp policy-analysis studies so that they were not just dealing with anachronistic policy contexts and providing rehearsed, deterministic responses (Crump and Ryan, 2001). Addressing gaps in policy research, in order to improve the quality and relevance in this field, should add further to the discipline knowledge base of policy scholarship as well as knowledge about the influence of international policy on the shape of post-compulsory education on Australia.

One of the primary aims of multi-sector institutions is to narrow the gap between success and failure by improving student retention and completion rates at all levels. While this is a matter of institutional self-interest, potentially, for a country as large and diversely populated as Australia, it has advantages for social cohesion and educational equity. Challenges for the future of further and higher education include the need to achieve outcomes and assessment practices that ensure development and learning for all students. This requires merging a competitive environment with a supportive and pastoral role so that institutions set high standards while protecting those who are vulnerable to failure through dislocation, poverty, or other at-risk factors. I would argue for a series of "warranted assumptions" worth exploring in relation to multi-sector institutions: first, there is a common "corridor of experience" between the proposed examples, and second, that policy knowledge and action are intimately associated with the active transformation of an environment in a way that is directed towards the resolution of problems regardless of how satisfactory this may be to the participants (Crump, 1992, 1995).

Factors contributing to successful amalgamations of universities with colleges of advanced education, following the "Dawkins' reforms" to higher education of the later 1980s included, it was voluntary in nature, it had clear goals, enough time was allowed for implementation, it established a firm timetable with realistic goals, it planned for real savings particularly with regard to administrative costs, and there were frequent evaluative and reflective meetings. Much the same list can be seen to apply to the formation, and success, of cross-sectoral partnerships that came about in the late 1990s. Whether these partnerships promote student learning through the different sectors, strategically respond to student needs and values about education, and serve the differing purposes of each of the sectors has not yet been established.

Investing in the education and skills-base of Australia's youth is a key strategy being employed to achieve the nation's economic objective and political vision of becoming an advanced knowledge-based economy capable of competing in the global market. While harnessing the talent and skills of rural and regional young people in ways that provide advantages to themselves, their community, and the nation is a complex and difficult task, multi-sector institutions appear to be well-suited to provide better-educated, more fruitfully-employed and more highly-skilled people. However, the policies and mechanisms to drive these initiatives have not always been compatible with existing practices (Crump, 1997b) and there is much to be learnt from international perspectives. Reforms in post-compulsory education have shaped incentives and stages that take students through education and/or training in a planned sequence of learning and assessment.

CONCLUSIONS

An increasing marketisation of education within a legislated framework and a regulated education economy are factors common to comparable situations in other countries (see Middleton, [2000] for the UK, and Redell, [2001] for Australia). Even though new institutional identities necessarily evolve, going back to the policy texts and oral history of "why" is crucial for understanding the real significance of the new flexibility and choice in post-compulsory education. There are disincentives for each of the partners in a new,

integrated campus or arrangement, despite suggested long-term benefits, that also call for explanation. In creating something new, there is the temptation for each partner to protect their institutional identity, structure, and functions while aiming to maximise institutional benefits (Shoemaker, Allison, Gum, Harmoni, Lindfield, & Nolan, 2000).

There is a chance that these new institutions will fail as they have taken a risk in facing a changed world openly and enthusiastically without clear guidelines or well-marked boundaries. Regulation is necessary to ensure accountability, yet new arrangements suggest that freedom in decision-making is necessary to ensure performance of education at a level congruent with institutional and national goals. Understanding the purposes of the multi-sector institutions and how to make sense of what they express about international policy perspectives is an important objective for future policy work in the context of lifelong learning. This should provide information for purposive decision-making – within governments and the institutions themselves – about future strategies for implementation and the extent to which the Australian approach has been progressive or regressive. Have we put the cart first instead of the horse?

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WEB-BASED INFORMATION SEARCHING: UNDERSTANDING STUDENT EXPERIENCES IN ORDER TO ENHANCE THE DEVELOPMENT OF THIS CRITICAL GRADUATE ATTRIBUTE

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ABSTRACT

Exploring essential differences between four categories of variation in student experiences of information searching, this paper outlines each category's structure of awareness. This structure reveals the way in which variation influences learning design to bring about the ways of experiencing searching we want students to engage in.

INTRODUCTION

Analysing the viewpoints and references provided by students in the papers they submit can be both rewarding and frustrating; rewarding if the student shows great promise and an obvious understanding of his or her work, and frustrating when it is clear that the student has totally misunderstood the subject matter and failed to recognise, or locate, relevant references. The latter situation causes questions to roll around in the teacher's brain, begging for answers to this puzzling phenomenon, while answers remain fleeting, vague, and even confusing. What is clear is that student experiences of web-based information searching are varied. Furthermore, their reference lists reveal that many students hold a basic ability to search for information, but an inability to perceive resources that are both relevant and significant.

This paper reports research findings that highlight how structural variations reveal the essential differences in student experiences of web-based information searching. The intention is to amplify a previous paper (Edwards & Bruce, 2002), which provided the focus and meaning of four categories of variation in student searching experiences. This paper will show how the identified structural variations can be used to design activities that may bring about the ways of experiencing searching we want students to engage in, so that, on graduation, they will be able to search more effectively. In order to understand this, variation theory will be outlined, explaining how to apply the theory in teaching. The implications for both assessment and curriculum design will be described, along with strategies that might be used to encourage students to increase their searching skills.

THEORETICAL FRAMEWORK

Today's tertiary-level students have grown up during the IT revolution. Exposed to popular media culture that suggests someone can "googlewhack" or "google" their problem to find an answer, students may have little comprehension of a world where searching for information does not involve a computer. Most believe searching is easy: find the search window, type in the desired topic, click the search button, scan the results list, and select. Does this simplistic perspective, however, contribute to a lack of understanding of the

information environment? We need to know how students approach their searching, in order to help them deal with the information resource environment in a more productive and professional manner.

Information Searching Research

Over the past four decades, there have been numerous research studies into the information searching characteristics of end-users. For this period the work of the most interest would be Kuhlthau's (1998) study that looked at student assignments and the students' experiences when using information in the library. This work led her, over the next few years, to eventually describe information literacy in terms of a "way of learning". Preliminary studies looking at information searching behaviours (Cole & Kuhlthau, 2000) have suggested that users make an attempt to define what they deem to be information in each individual context. That is, what to one person seems highly relevant, to someone else would appear useless as it does not suit his or her needs in their own work or study environment.

Information-science research is showing an emerging interest in applying educational research into the variety of ways needed to understand the searching process (Kuhlthau, 1988; Limberg, 2000a, 2000b). Limberg and Kuhlthau's work is particularly relevant to this study, in that they show that the variation in the users' experience of searching can highlight areas where a gap exists between the search process and the learning outcomes. Limberg's work goes further to suggest that information seeking is actually not content specific, but is a more general process. This process, however, cannot be described without relating it to the content of what is learnt. These latter studies confirm that human factors in web-based searching behaviour must not be ignored.

What is clear, is that the searching experience involves a combination of factors. We need to understand the variation in the experience of Internet searchers, and we should be looking at their "way of learning" (Kuhlthau, 1993). In doing so, we may identify why particular search behaviour is evident, and in understanding the underlying reasons for the approach, we may be able to build a framework to help individuals move into more satisfying search experiences.

METHODOLOGY

Based on the findings from previous researchers and teaching observations, this research had a series of broad aims. The specific research aims and the preliminary results from this research have already been reported (Edwards & Bruce, 2002). This paper amplifies the findings from the research and focuses on the variation in ways students search for information when using the Internet and library databases; it also recommends teaching and learning strategies for curriculum design based on managing students' experiences. Ethical clearance was obtained.

As the research aimed to make sense of the students' understandings of the information searching and retrieval concepts, the research was undertaken using phenomenography (Bowden & Walsh, 2000). Phenomenography looks at the different ways people experience or conceive a range of phenomenon (Marton, 1988). In simple terms it is a way to describe how things appear to people (Marton & Fai, 1999).

Variation theory

Central to understanding phenomenography is appreciating how the findings may apply in teaching. Teaching and learning research to date has found that ways of experiencing something are essential to the learning that takes place (Shulman, 1986). Marton & Booth (1997) contend that qualitatively changed ways of experiencing something is the most advanced form of learning. If we can describe learning as coming to experience something in a changed way, we should also acknowledge that experiencing something must require the ability to discern this new way of seeing the experience. Discernment then, is a significant attribute of learning (Runesson, 1999).

In order to discern a difference, however, we must have experienced a variation from our previous experience. To explain simply, if everything in the world was brown, then we would have no concept of what the word "brown" meant, nor what the word "colour" meant either (Bowden & Marton, 1998; Runesson, 1999). Once shown that apart from brown, there is also blue or green, then we have experienced a variation and discerned a difference in what we have previously experienced. Variation then is the primary factor needed for discernment, which will lead to

learning (Bowden & Marton, 1998). If at the same time we noticed that the object had a different colour and that it was smaller or larger, or of a different texture, then we have simultaneously discerned other aspects of this experience in terms of possible variations. To discern, then, it is necessary to experience the variation (Runesson, 1999).

Variation, therefore, is a primary factor in encouraging student learning, but in order to understand what variations to use in the classroom to encourage student learning, it is first necessary to understand the varying ways of experiencing something; in this case, information searching. Phenomenography aims to uncover the variations in an experience, and describes these variations as a finite set of categories. These categories reveal the "space" of the variation or, in this case, the varying ways of seeing information searching. Having found the variations, we can use them to identify ways to encourage students to discern another aspect of the information searching experience; an aspect they have previously not discerned. We can structure the learning environment to ensure students experience the variations of the information searching experience. By doing so, we may encourage learning.

Gathering and analysing the data

Using the phenomenographic method, the identified variations in the experience of information searching were found. As described in a previous paper (Edwards & Bruce, 2002) the participants were all third-year or postgraduate students from the Faculty of Information Technology. As the research progressed, the database was extended to encompass first-year, third-year, and postgraduate student perspectives. The participants were QUT (Queensland University of Technology) students from the faculties of IT (Information Technology), Science, and Creative Industries (i.e., dance students). Different cultures, ages, and genders were represented. From 43 interviews, the final transcripts comprise 31 first-round interviews and 12 second-round interviews. Both rounds of interviews were used to identify variation in information searching experiences. The second interview was analysed to reveal students' perceptions of influences on their learning.

Analysis of the data was undertaken according to traditional phenomenographic approaches. After the development of the categories of description of the phenomenon (Edwards & Bruce, 2002), the categories have been further analysed to distil the essential structural variations in which the phenomenon is experienced. In this way, we can clearly identify the variation found in each group's way of looking at the world.

Ways of experiencing information searching

A framework of four categories captures the variation in the students' different ways of searching and learning to search for information. It is important to note that the investigation with first-year students in various faculties has confirmed the categories previously reported (Edwards, 2004; Edwards & Bruce, 2002). These are as follows.

Category 1: Information searching is seen as looking for a needle in a haystack.
Category 2: Information searching is seen as finding a way through a maze.
Category 3: Information searching is seen as using the tools as a filter.
Category 4: Information searching is seen as panning for gold.

Edwards and Bruce (2002) provide a summary of each category and the different meanings assigned to each search experience. Using that work, we can now expand each category's awareness structure to illustrate the essential differences between them, showing that each may be characterized in terms of different foci; and in different ways of seeing the information environment and the information tool structure, and the students' awareness of the quality of information. Table 1 shows the structural variations of the categories and, following that, each awareness structure is further illustrated.

	Primary Focus	Internal Horizon Focus	External Horizon	Areas not attended too	Structure of Awareness Summary
Category 1	Search Topic	• Strong focus on search box. • Ask for help from a variety of people. • Revert to printed textbooks and dictionaries. • Use one or two favourite search engines.	• Little or no search strategy planning. • little/no use of other search engines (uses favourite). • Rarely considers searching tool structure • Confusion over meaning and use of synonyms or Boolean techniques.	• Unplanned attention to information environment. • Search tools structure is usually not considered. • Information quality seldom considered.	The student's focus is on the topic. The "haystack" (information environment and search tool formation) is without structure, so it is difficult for students to appreciate environment is designed to help. Often confusion between different tools evident and confusion over tool searching options.
Category 2	Topic & Search Process	• Strong focus on using the tools. • Basic search strategies. • Search tool favourites, still. • Library resources more important. • People a primary focus. • Boolean & synonym use understood & used occasionally.	• Little attention to the information environment. • Wildcard concept clearly understood / occasionally used. • Reflection encourages more refined search strategies.	• Barely consider information quality. • Search tool structure remains a mystery. • Public domain Internet databases (like NASA) occasionally used.	Growing emphasis on using the tools to find the topic. Thee planning of the search has become more important. Students begin to consider using advanced search features, and begin to speak about information quality aspects, though this is not considered in search strategy. There is a growing awareness of the rich variety of available search tools.
Category 3	Search Tool Structure	• Focus on search tools • Topic is secondary. • Structure of information environment clearly understood. • Refined search strategies used. • Search Tool structure understood & actively used in searching • Tools help refine the topic, and filter results.	• External horizon limits blurred. • Term analysis undertaken (thesauri). • Domain searching to limit results • Internet/library databases used as needed. • Use of advanced search features. • External public domain databases considered.	• Information quality not considered in search strategy, but Information quality important • Primary or secondary sources of information are not considered.	This category's structure of awareness reveals a clear understanding of the information environment, with virtually every aspect of the environment in focus. They have an ability to reflect over results to filter them into a more useable sized set using the search tool features, Boolean and wildcards, and so forth, as their instruments.
Category 4	Information Quality	• Information quality has surpassed all other aspects as the major focus. • Clearly, within the internal horizon is virtually every other searching aspect previously considered in the preceding category descriptions.	• The only aspects remaining in the external horizon limits are external database vendors, internet databases (like NASA), and term analysis. • It is not that these aspects are not considered important, they are simply brought into use when, and if, required.	Nil	Clearly, the focus on the character/quality of the information resource is the major difference from the previous categories. As only primary sources of information are important enough to be included in result sets, the search will be refined to limit results these sources only.

Table 1. Structure of awareness for each category: significant differences.

Figure 1 shows the pictorial interpretation of the structure of awareness in Category 1[1]. Imagine this image as a lens through which the student views the world. The structure of awareness is broken down into an internal and an external horizon. Within the internal horizon circle, the worldview is clear and in focus. The internal horizon shows us the primary focus of this experience. Here, the primary focus is the topic, with a strong focus on the search box or search window. There is also an emphasis on asking for help from a variety of people, or reverting to textbooks and dictionaries to help understand the topic before searching. Students tend to resort to one or two search engines only – their favourites – which they trust because that is what they have always used; and they are usually selected on the basis of recommendations from peers, teachers, or library staff.

[1] Due to conference paper limits, the structure of wareness figures for Categories 2, 3 and 4, have not been included. The visual structure of awareness modes for all categories will be displayed at the conference presentation of this paper.

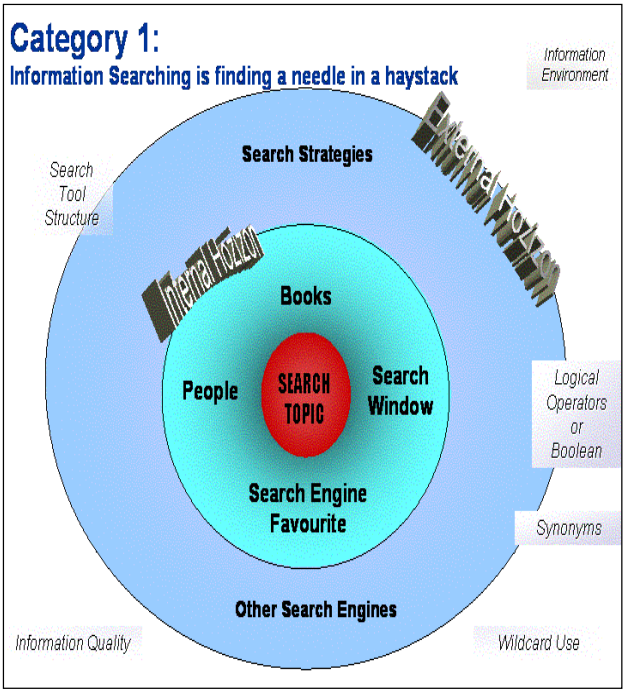

Figure 1. Category 1 structureof awareness.

Within the external horizon limits, the lens is not as clear, nor the items within it in focus. In this experience, the unfocused outer part of the lens shows us there is only ad hoc attention paid to planning a search strategy. Despite being aware of the multitude of search engines available, the student makes little or no use of more than one or two engines. Where the search tool structure has aspects designed to help with searching, they are rarely considered. In fact, numerous aspects of searching are not within the worldview of this experience. For example, Boolean searching techniques and synonym use are in some cases unknown, or they are blurred. They are almost outside the external horizon limits. Students may have heard the use of these terms in classes, but they have little or no understanding of how to use the associated techniques when searching.

Outside the external horizon are a number of searching aspects that are not in focus. This shows how little is attended too in this experience. There is only unplanned attention to aspects of the information environment, with little or no distinction between library catalogues and databases; and the search tools structure (including search options, advanced features, and help) is usually not considered. Aspects such as information quality and wildcard use are seldom considered.

Category 1 structure of awareness: finding a needle in a haystack.

To summarise then, the structure of awareness associated with this experience suggests that these particular students focus on the topic. Although they are aware of the information environment, they have no appreciation of the importance of the structure of that environment, nor of the structure of the tools that they use to find information. As the environment is a haystack without structure, it is difficult for students to appreciate that the environment may actually be designed to help them find information about their topic. In this category there is often confusion between different search tools evident, and confusion over tool searching options and search features.

Category 2 structure of awareness: finding your way through a maze.

The primary focus of this experience is the topic and the search process; with a growing emphasis on using the tools to find the topic material. The internal horizon limits of this experience include a basic search strategy formation, and a continuing strong preference for search tool favourites. Library resources are now considered

more important; students suggest using the catalogue to understand their topic. People remain a primary focus for this experience. Boolean and synonym use is occasionally considered more important, and these are now clearly understood but are likely to be used after some reflection has been made on the initial search results. The experience includes a much stronger focus on using the tools to find the information they require.

Within the external horizon limits, some attention, on an ad hoc basis, is paid to aspects of the information environment. More clearly in focus now is wildcard use, and this is occasionally used when searching. Reflection has begun, which encourages more refined search strategies, though little attention is given to aspects that may help students into a more productive search experience, such as information quality or using the search tool's advanced features in search strategies. In fact, the search tool structure remains a mystery to many in this experience. Other public-domain Internet databases (like NASA) are occasionally considered and used.

Category 2's structure of awareness shows us that the process, or the planning, of the search has become more important, with students beginning to use advanced search features, and to speak about aspects of the quality of the information they have found. They have a growing awareness of the rich variety of search tools available.

Category 3 structure of awareness: using the tools as a filter.

The structure of awareness associated with this experience, shows that the student's focus is, primarily on the tools, and the topic is almost of secondary importance. There is a strong awareness in this category of the structure of the information environment, and little or no confusion between the different search tools available. Refined search strategies are used, with students more aware of the structure of each of the search tools; even showing an ability to adapt their searching based on the search tool used. Primarily, search tools are used to help refine the topic, and to filter the results into a smaller set.

In this category, the external horizon limits show a blurring of the edges. That is, while aware of the quality of information, it does not factor into the searching strategy. Term analysis is undertaken when and if required. Domain searching to limit results is used when required. More specialised Internet and library databases are used when considered important. Students in this group are more likely to consider using the advanced search features and help buttons on the search tools in use. Public domain database providers may be more frequently considered, and, if accessible, commercial database vendors used.

Category 3's structure of awareness reveals a clear understanding of the information environment, with virtually every aspect of the environment in focus. Students have an ability to reflect over results and to filter them into a more useable sized set using the search tool features, such as searching options and advanced searching.

Category 4 structure of awareness: panning for gold.

The focus of this category remains firmly fixed on the quality of information. It has surpassed all other aspects as the major focus. Within the internal horizon is virtually every other searching aspect previously considered in the preceding category descriptions. The only aspects remaining in the external horizon limits are external database vendors, Internet databases (like NASA), and term analysis. It is not that these aspects are not considered important, they are simply brought into use when, and if, required. Clearly, the focus on the character and quality of the information resource is the major difference when compared to the previous categories. As only primary sources of information are important enough to be included in result sets, the search will be refined to limit results to these sources only. Most secondary sources of information will be filtered out.

DISCUSSION OF FINDINGS AND FURTHER DIRECTIONS

The detailed structure of awareness of the categories has revealed the variation in the experience of information searching. Students are, in some experiences, frozen in their ability to find information as they see a haystack or a maze when they attempt searching. This "lens" hampers their ability to use the information environment more effectively. Aspects of the search tool features and the information

environment are, to some, at best, a hazy image; and at worst, an aspect clearly misunderstood. When teaching information searching skills, then, what might be done? Clearly, we need to encourage students to discern another information searching experience. There are four areas which could be considered here; provide students with opportunities for reflection; improve assessment to make it both authentic and to encourage students to see the variation; use online tools to further enhance the learning experience; and finally, encourage staff development to enable understanding and application of the findings.

Of particular importance would be to encourage those students who see through a haystack lens that, in fact, the haystack has both structure and form. Students must be encouraged to reflect using exercises that support the development of search skills. The exercises they undertake should not be purely isolated experiences; an expectation on student reflection and ample time to reflect is required. Students need to see things happening differently to what they have previously experienced in order to discern a difference.

Assignments for these students should be authentic and encourage reflection across the variation of the experiences. Students should be expected to use the search tool features and to actively explore the information environment in assessment items. Having used them, they should be encouraged to reflect upon the information environment, and to reflect upon what happens when they use Boolean operators or wildcards. They should be asked to report on the features of search tools, explaining the significance of these features, and to explain why they would be useful when searching. Information quality needs to be both experienced by them, and reflected upon, so they can see the benefit of using quality information for assignments (Edwards & Bruce, 2004).

Online tools can be utilised to enhance learning. In an existing QUT IT subject unit, an interactive media section of has been developed and added to the unit's online site. This will be on trial in late Semester 1, 2004. The intention has been to develop a teaching tool for the students to use on their final assignment for the unit. The assignment and the site focuses on helping students learn to search web-based information resources through a variety of experiences, potentially opening for them a different worldview.

Finally, staff development should not be ignored. This research led to the development of a half-day, guided workshop for academic staff; although when first offered both academic *and* library staff attended. The workshop was designed to be both informative and participatory. All who attended were involved in the process of the developing potential teaching and learning resources, and the development of strategies that use assessment to encourage students to search more effectively for information resources.

CONCLUSION

Overall, there is a need to design exercises and assessment strategies that will lead students into the structure of the experience considered desirable. It is essential to allow students the time to reflect on and comprehend the variation in information searching experiences. Teachers and lecturers in relevant fields should consider their existing exercises and assessment items and ask themselves, does this assignment encourage the students to move into a higher level of information searching experience? Does it encourage the students to firstly experience something in a new way, and by so doing, encourage them to discern a variation in their information searching experience. If we can do this, we will move our students into a deeper understanding of the searching experience, we will provide them the opportunity to discern a variation in what they have previously experienced and, hopefully, we may encourage learning.

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LIFELONG LEARNING, THE KNOWLEDGE ECONOMY, AND PROFESSIONAL DEVELOPMENT

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ABSTRACT

There is increasing rhetoric surrounding the concepts of lifelong learning and the knowledge economy (Peters, 2001); specifically e-learning and web-based learning environments. This paper seeks to explore the journeys of two professionals from two separate disciplines and work environments located in one higher-education institution where there is an increasing push to develop learning materials using online and other e-learning technologies.

With the steady shift from traditional learning, online learning is now playing an integral part of course delivery at the Australian regional university where the authors work. A contextual analysis of online learning within the broader views of the institution provides examples of discourses relating to online environments, knowledge management, and the professional development of the participants.

This discussion draws on the concepts of lifelong learning (Crowley, 2002; Serim & Murray, 2003) and embeds them within an online learning environment. Exploration of the multiple workplace environments within the institution under review demonstrates one way in which educators can embrace and position themselves as they negotiate changing educational discourses.

INTRODUCTION

It has almost become redundant to argue that we are living in a global environment that is changing rapidly (Lankshear, Gee, Knobel, & Searle, 1997). New times and new learners are linked closely to the technological and information explosions (Green & Bigum, 1993; Kincheloe, 1998; Steinberg & Kincheloe, 1998; Buckingham, 2000; Walker-Gibbs, 2001, 2003). Arguably, a significant challenge facing the various educational sectors is that it is becoming necessary for more people from the general population to know how to manage, access, use, and manipulate information and knowledge in a variety of contexts. As Mackay, Maples, and Reynolds (2001) argued, a definition of the information society is that it is,

> … a loose umbrella term, used by various authors and commentators to refer to far-reaching social change that is underway. It encompasses a diversity of arguments, which all see information, and information technology, as somehow lying at the heart of the emerging social order. Greater volumes of information are being communicated by a fast-growing range of technologies with profound social consequences. (p. 1)

This paper outlines how two individuals negotiated the complexities of the various discourses and demands from a variety of sectors and contexts including the global shift to the knowledge/information society, the different higher-education divisions in which the authors' work, and the specific context of online learning. The following section of the paper outlines the global context that is impacting on the authors' institution generally and their workplace specifically.

GLOBAL CONTEXT OF LIFELONG LEARNING

As Morris (2000) stated: "Success in school, the workplace and everyday life now depends on knowing how to access and use information. Knowledge workers have been second only to management workers as the fastest growing occupation since the early 1970s" (p. 29). There is also increasing rhetoric in the research that links the global changes to the concepts of work and lifelong learning. As the Organization for Economic Cooperation and Development (2000) posit,

> … it is indeed the changing nature of *work* that now makes lifelong learning … so imperative. It is … expected that there will be a strong, and potentially unsatisfied, demand for highly skilled professional, technical, administrative and managerial staff …. The demands of this new knowledge economy mean that qualifications are becoming obsolete more quickly than ever. (p. 19)

For us, lifelong learning is about continually developing relationships, partnerships, and knowledge. It is also about engagement with new ideas and new technologies. On a more specific level, it is about personal and professional fulfilment, taking advantage of opportunities to learn, and making lifelong connections with our learning whilst continually engaging in reflective practices. From a global perspective we acknowledge that the move to online learning, combined with the information explosion, has meant that the way in which we manage knowledge also has to change.

As both authors work in the multimedia fields of development and education, our specific focus in this paper is on how information communication technologies (ICTs) can help to transform education. As Goodson, Knobel, Lankshear, & Mangan (2002), stated, "As we enter the twenty-first century, the familiar spaces of formal education are increasingly being invaded and transformed by new information and communication technologies (ICTs)" (p. 1). The changing nature of the world and access and availability of ICTs means that we have to acknowledge the changing nature of work (Mackay, Maples, & Reynolds, 2001) and the potential impact this will have on the more traditional educational structures and skills of the workplace.

Perceptions of being on the "cutting edge" of educational innovation are currently associated with computer use and the notion of the "smart" lecture hall where educational experiences are technologised experiences. We need to be aware that discourses around effective teaching emphasise, among other things, student satisfaction, retention, and flexibility, with many of the outcomes linked unproblematically to the use of technology. As Crowley (2002) argued,

> E-learning encompasses training, education, information, communication, collaboration, knowledge management and performance management. It addresses business issues such as reducing costs, providing greater access to information and accountability for learning and increasing employee competence and competitive agility. (p. 58)

The next section of this paper outlines this local context and the specifics of implementing an online course for the Education Faculty of one university which is taking these global ideas on board. The impact on the authors' work will also be discussed.

LOCAL CONTEXT OF LIFELONG LEARNING

As already stated, the two authors of this paper work in two different divisions of a regional, Queensland university. The university is rapidly expanding to what could be described as a "global" university with campuses situated locally, intrastate, interstate and internationally. In the context of a changing information society it could be argued that this university has moved from a teacher-centred to a "student/consumer" focus (Baillie & Moxham, 1998) where there is a requirement for academics to be computer literate (Ling & Ling, 1998).

As part of the knowledge economy, information society, technology explosion and "new work order", who will be responsible for ensuring that education responds to the challenges posed by these phenomena is a question that must be asked. As Goodson, Knobel, Lankshear, & Mangan (2002), stated,

> The logic of the new work order is that the roles and responsibilities of the middle will pass to the 'front-line workers' themselves (formerly the bottom of the hierarchy). Workers will be transformed into committed 'partners' who engage in meaningful work, fully understand and control their jobs, supervise themselves and actively seek to improve their performance through communicating clearly their knowledge and needs. (p. 85)

The position of "front-line workers" charged with being responsible for supporting and managing the transformation of teaching and learning from face-to-face to online is where the authors found themselves at the beginning of 2003. We turn firstly to the broader context of the university in which the first author (Julie) is situated.

Julie has a Bachelor of Multimedia, and a Postgraduate Certificate in Online Learning. It is the combination of these qualifications that allows Julie to support online curriculum design. Titled a Multimedia Producer, Julie maintains a currency of knowledge in new software, technologies, and educational trends to support academic teaching efforts within the university. She produces models for the design and development of online educational material, particularly within an online environment, and works hand-in-hand with academic staff to ensure educational practices best fit the types of modalities offered at the university.

The second author, (Bernadette) is a lecturer in the Faculty of Education and Creative Arts of this regional university and is responsible for two courses entitled *e-learning Manager* and *The Entrepreneurial Professional* that are part of the new education degree developed at this institution; namely the Bachelor of Learning Management. The course *The Entrepreneurial Professional* engages with the idea that "Using various approaches to future studies, students in this course will learn to identify, analyse, research and respond to contemporary organisational concerns in ways that demonstrate, also, an appreciation of future and possible developments of entrepreneurial discourses" (Faculty of Education & Creative Arts, 2003b). The links between the course, the teaching program, the schools, and the university and faculty were based on notions of future, directed, lifelong learning which responds to the global changes discussed earlier in the paper.

Drawing on our different experiences we have worked together to build up a contextual framework around developing these courses online. One of the first differences between the two authors to become apparent was that Julie, as a multimedia producer, is classified as a General staff member of the university, whilst Bernadette is classified as an Academic staff member. In recognition of the fact that within the information society and the new knowledge economy, no one person is able to be "the holder of all knowledge" it was essential for the two authors to enter into a continually negotiated partnership that positioned them as facilitators of learning. This is particularly important when a General staff member can be seen as holding a mostly administrative and supporting role in the process whilst the Academic staff member is seen as the facilitator of the teaching and learning.

Whilst we have diverse backgrounds, experiences, knowledge, and directives, our collaboration had at the core the common goal of helping Education students enrolled in these courses to experience effective online teaching and learning. We needed to view the partnership as an opportunity to begin breaking down some of the more traditional roles and move towards a

supportive partnership where both parties were responsible for developing and researching the best way of implementing these courses online.

There is much to be done in forging strong collaboration between academic and general staff. We tend to work in silos, whereas we should all work together. We need strategic plans, processes, and systems that support proactive, innovative, and effective practices; which in turn assist the teaching and learning processes through strengthening collaboration and coordination between academic and general staff via teamwork. The next section of this paper focuses on the course *The Entrepreneurial Professional* to illustrate how the authors went about trying to begin to achieve this goal.

THE ENTREPRENEURIAL PROFESSIONAL AND ONLINE LEARNING

The implementation of *The Entrepreneurial Professional* needed to complement the student internship (practicum teaching component). Because of the nature of these internships, students are not required to attend face-to-face lectures or tutorials.[1] This course was developed through the learning management system, Blackboard, which is new to the university. The course was developed as part of pilot project for second semester, 2003 delivery. Our aims were to encourage and facilitate collaborative learning without an information overload. It was anticipated that the course, *The Entrepreneurial Professional,* would be developed using a systematic ADDIE (analysis, design, development, implementation, and evaluation) instructional-design model (Kruse, 2002). This was to ensure an authentic online learning environment as suggested by Herrington, Oliver, & Reeves (2003) who argued,

> Instead of providing academic, decontextualised exercises that can be used primarily to practice a skill, there are many instances of courses where authentic tasks create the core of the online learning environment, and the completion of the tasks effectively comprises the entire student commitment for the course. (p. 59)

From the perspective of "authentic" online learning environments applied in this course, we delineated the following characteristics to be important,

- to provide opportunities to engage with students from different backgrounds,
- to collaborate and be able to learn from others but also examine others from a different perspective,
- to reflect on practice which will enable choices and decisions,
- to integrate life experiences into practice,
- to be able to sustain lifelong learning both individually and socially.

O'Reilley (2000) argued that there is a need to humanise online learning experiences by providing greater compassion, empathy, and a sense of open-mindedness. This is critical to the success of any new online learning environment with which our students engage. Support by way of tutor-lead facilitation should be provided in the initial stages of the course, which will enable students to feel comfortable and at ease. O'Reilley (2000) noted that "the learners engagement is paramount to their learning success."

Harasim, Hiltz, Teles, & Turoff (1995) suggested that the essentials required before making a commitment to an online learning environment include,

- learner interest and support,
- educational activity would be enhanced by online modality, and
- management support and recognition. (p. 145)

In this phase, information had been gathered about the target audience, selection of the appropriate technologies, identification of learning styles, and discussion of the aims with the subject matter expert. We discussed demographics, motivation for learning, and content knowledge, all of which assisted in developing this course to meet the intended aims and objectives.

The course engaged with the challenging, professional, online environment within which

[1] It should be noted that all courses within the Faculty's suite of learning management programs are delivered face-to-face. In the past some lecturers have provided supplementary material via online means such as websites or WebCT. This being the case, students have not necessarily been exposed to a fully online learning environment.

educators now work – with the focus on the skills necessary to position oneself as a leader in educational settings. Using various approaches, students would identify, analyse, research, and respond to contemporary educational organizational concerns in ways that demonstrate and appreciate the future of entrepreneurial discourses.

As Barker (2002) has pointed out, "Online tutors need to have a range of different technical and communication skills" (p. 7). It wasn't enough for us to determine what the students needs were; what we also had to ensure was that Bernadette's technical skills were sufficient for her to become an effective facilitator.

The next section of this paper discusses the fact that although there is increasing rhetoric about the need to move to a more global online environment, there are reasons for resistance to this change; with this resistance not only being to online learning but also to the underlying push to lifelong learning that is facilitating the perceived need for this change. At the same time we argue that there are also opportunities that should be considered that can help educators face the challenges head on.

RESISTANCE TO, AND OPPORTUNITIES FOR, LIFELONG LEARNING

What needs to be explicitly stated is that although there are rapid changes to the way we envisage learning taking place outside higher-education institutions, the same cannot be said for the inside of higher-education structures. As McCredie (2003) argued,

> Learning is a universal activity that is ripe for … strategic transformation …. The two main reasons this has not yet happened are probably (1) envisioning and then implementing innovative interactive learning environments that really work is clearly difficult to do, and (2) educational institutions resist change very effectively. (p. 20)

One of the reasons for this resistance is increasing workloads and decreasing funding in the Australian higher-education sector (Moore, 2003). Despite the fact that individuals understand the importance of embracing new technologies, as Lankshear, Snyder, & Green (2000) argued,

> Unfortunately, the incursion of new technologies into our educational lives coincides, by no means accidentally, with other things. These include an intensification of teachers' work, concerted attacks on teachers' conditions, and the openness with which interested groups conspire to undermine confidence in public schools by manufacturing successive 'crises' in school performance. (p xiv)

The development of this online course was an additional part of the authors' workload. For example, whilst developing the materials for this course Bernadette was also teaching the course face-to-face intensively with a separate cohort of students. As Ayers & Grisham (2003) have posited,

> "… the computer does not replace other work; it only adds to it. Whatever the network efficiencies we can gain in other aspects of the institutional operations, the introduction of IT into the classroom seems to soak up money and time rather than save them" (p. 45).

The increased workload was also due in part to the implementation within the faculty of a new degree that was devised to be "futures oriented" that was occurring at the same time, and therefore there was little time or opportunity to engage in sufficient staff development. As Bennett & Marsh (2002) argued, "The implementation of … (ICT) represents a significant challenge for all education institutions and teaching professionals and no one would question the need for effective programmes of staff development and training to support this significant culture change" (p. 14).

Although in this instance Bernadette's skills were such that she was able to meet the technical demands of implementing this course online, this is not always the case with other staff in similar situations. As Coaldrake & Stedman, (1999) quite rightly point out, " At the individual level, within our universities there is great variation in skills and attitudes towards technology" (p. 6). It could be argued that the resistance to engage with online learning is also linked to the limited technical skills of the generalist educator.

Despite these significant barriers and points of resistance it should also be recognised that the embracing of change, and effective, futures-oriented, teaching practice also presents the educator and students with numerous opportunities. As Barker (2002) stated,

> "… in the majority of situations, using e-learning technologies implies that it is possible to provide more widespread access to education for larger groups of people. This, in turn, is likely to mean that 'consumers' will have a wide range of abilities and prior experience" (p. 3).

What this means is that by providing an effective online teaching and learning environment we are equipping students with the technical and attitudinal skills that will help them participate more fully in a global knowledge economy (Crowley, 2002; Morris, 2000). This in turn opens up opportunities for students to engage with learning in a lifelong perspective. As Morris (2000) argued, lifelong learning is desirable in order to,

> … ensure all individuals have the opportunity to participate in society to the fullest extent. Those who do not build good learning foundations or miss continuous learning opportunities risk exclusion. Without an increased emphasis on lifelong learning, the earnings gap between levels of educational attainment may continue to widen. (p. 29)

As educators our goal is always to facilitate learning for as many students as possible. Online learning, structured effectively and creatively, can provide opportunities for us to achieve these goals. As Thompson & Randall (2001) stated,

> In order for it to deliver on its promises, e-learning needs to be carefully crafted, of high quality and expertly executed. It needs to tap the very highest practitioners of conventional teaching and learning. Its success will also hinge on the ability of teachers to maximize the web's potential. And, last but not least, it will need risk taking educationalists prepared to experiment with new teaching methods – and at times fail while trying – in the search for the method(s) which will deliver. (p. 291)

The opportunity to take risks and engage in supportive networks and partnerships can help educators maximise online teaching and learning potential.

CONCLUSION

This paper sought to illustrate a particular journey of two people whose goal was to provide an effective online learning environment to a particular group of students. Along the way the two participants had to navigate their way through the various institutional and knowledge-economy discourses. By engaging in a supportive partnership that transcended traditional structures the participants were able to enhance their professional development, with this succeeding in making inroads into their personal lifelong journies.

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MAKING THE WEB SUITABLE FOR LEARNING

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ABSTRACT

This paper provides an analysis of learner engagement in online learning environments (within an overarching framework of lifelong learning) and looks at the supporting role to be played by educational technology. The paper explores new design principles that will facilitate learner engagement, thereby creating a fertile environment for meaningful lifelong learning.

INTRODUCTION

Kearsley and Shneiderman (1999, p.1) believe that "the fundamental idea underlying engagement theory is that students must be meaningfully engaged in learning activities through interaction with others and worthwhile tasks." Furthermore, they believe engagement theory to be an effective conceptual framework for technology-based teaching and learning (private communication with Greg Kearsley on March 24, 2003).

When online learning became a scaleable possibility in the early 1990s educators sought to experiment and adapt the underlying technology to their teaching. Because distance education was perceived to be a methodology that would best fit with the online features, educators adjusted their distance materials to this new technology. Subsequent evaluations of these online courses showed results that were equivalent to those from courses based on distance-education and classroom models (Russell, 1999; Twigg, 2001). The ease with which print materials could be "smashed into an HTML template" allowed the dominant educational paradigm to remain even though the learning technology, with its characteristics and capabilities, had changed significantly. This approach became known as "shovelware" (Kilian, 2000), and while simple to achieve, it failed to exploit the features of the technology. Since the early shovelware approaches, educators have experimented with online technology to find more effective strategies. What follows is a synopsis of what is now known from the online learning research that has taken place to date.

In terms of a theoretical framework, the authors will compare and contrast the capabilities of online learning, and examine its associations with the construct of lifelong learning.

THEORETICAL FRAMEWORK

Kearns, McDonald, Candy, Knights and Papadopoulos (1999) define the concept of lifelong learning as follows:

> A continuously supportive process which stimulates and empowers individuals to acquire all the knowledge, values, skills and understanding they will require throughout their lifetimes and to apply them with confidence, creativity and enjoyment in all roles, circumstances and environments. (p. viii)

Key aspects of this definition are the stimulation, empowerment and enjoyment of learning. These aspects don't just come from learners who are information literate, but are derived from people who are engaged in the process – and through this engagement, develop a love of learning. So how does this apply to online learning?

The underlying instructional design for online educational learning environments is a holistic process and should provide media and learning opportunities that cater for individual differences in learning (Riding, 1999; McVay Lynch, 2002).

Gunawardena and Zittle (1996) list social presence, interaction, cognitive strategies, collaborative learning, and learner-centeredness as critical aspects of online learning. So it is important to consider the holistic design of online learning environments in the context of the elements described below. The critical elements described by Gunawardena and Zittle (1996) should not be considered in isolation. These (and other) elements are interdependent and affect students to varying degrees depending on a range of variables that can include learning

and other cognitive styles, cultural background, age, gender, educational background, disabilities, emotional states, and prior experience.

Social Presence

Social presence or teacher immediacy (Richardson, 2003), is the trust to engage with other learners and facilitators in a way that promotes lifelong learning and personalises the learning space via a continuously supportive process. Social presence provides the main distinction between the traditional view of distance education and effective, modern, online education. Harasim (2000) asserts that many online courses are more social and convivial than even face-to-face courses. Harasim goes on to say that collaboration is the key to engaging and motivating learners.

Gunawardena and Zittle (1997) found that social presence was affected by the media technology used and by the strategies employed by facilitators that "cultured" interaction.

Interaction

Interaction is initiated by the learning activities that spawn vigorous content and personal interaction; promoting lifelong learning. This interaction is facilitated both at peer and tutor levels, but also involves interaction within the online environment itself.

Kearsley (2000) suggests that to learn effectively, learning needs to be active, and that collaborative learning achieves this end. Interaction can also involve individual activities embedded in the design of the learning activities (Paulsen, 1995). Harasim (2000) also suggests that learning activities should be designed to include high levels of content and human interaction. Learning activities that require small-group participation are an excellent way of ensuring peer-to-peer social interaction.

Cognitive strategies

Cognitive strategies, embedded within the learning tasks, should provide the mental processing required to effectively learn and integrate a body of knowledge. This then empowers learners to acquire knowledge; thereby facilitating lifelong learning.

The links between affective and empirical knowledge provide an important clue for those developing cognitive strategies, since the strength of the cognitive structures developed depend on the intensity of the experience – specifically, how real the experience is perceived to be by the learner (Taylor, 1994). This can apply to both social and content related aspects of the learning activities. The more real the experience, the stronger the cognitive structure that is developed, and the greater the learning.

Collaborative learning

Collaborative learning allows learners to articulate and re-conceptualise their current conceptions of learning, based on their collective knowledge and experiences. Collaboration is an essential ingredient in the recipe to create an "effective learning environment" as it provides learners with the opportunity to discuss, argue, negotiate, and reflect upon existing beliefs and knowledge. The learner is "involved in constructing knowledge through a process of discussion and interaction with learning peers and experts." Harasim (1989, p. 51).

Learner-centredness

This concept encourages learners to take control of their own learning by a negotiated process that stimulates and encourages learning. The literature attributes a wide variety of meaning to the term "learner-centred". There is debate about some aspects of what constitutes a learner-centred learning environment. However, there are some constant themes that carry through the literature. Firstly, there is the need to provide learning opportunities regardless of the learners' circumstances and learning preferences. Secondly, the learners need room to explore, discover, and assimilate knowledge at a speed that suits their abilities and circumstances. Lastly, the learning environment must be perceived as safe and open exploration; allowing learners to experiment and to make mistakes free of adverse consequences.

Critical elements summary

The critical elements outlined above are crucial when developing within an online community. These elements link together to create a community of learners who engage and

contribute to each other's learning, which is an essential element for lifelong learning.

Implication for change in roles and practices in online education

Lifelong learners seek skills and knowledge that will equip them for the new jobs that are now required in the Information Age; and while certification is important for entrance into a particular profession, the knowledge skills and values gained from the program of study have, arguably, a broader significance.

In a study to establish the suitability of Australian university undergraduate programs for lifelong learners, Candy, Crebert, and O'Leary (1994) found that few undergraduate programs met the needs of this growing cohort of learners. They did, however, suggest the following list of teaching methods that were found to support lifelong learning:

1. Peer-assisted and self directed learning.
2. Experiential and real-world learning.
3. Resource-based and problem-based learning.
4. Open learning and alternative delivery mechanisms.
5. Methods that encourage reflective practice and critical self-awareness. (Candy et al., 199, p.128)

The study also suggested that assessment should be built into the learning activities and involve peer and self assessment, and recommended that there should be more emphasis on "what is learnt" rather than measuring the quanta of learning. While the study did not examine online education (there were very few programs offered in this mode prior to 1995), its recommendations are particularly relevant to this growing area, and its findings are supported by this paper. For the changes suggested by Candy et al. (1994) to occur, the roles of teachers, students, and institutional managers need to change, and change radically.

Role of teachers

The literature the authors examined in both lifelong learning and online learning would seem to suggest that the teacher/lecturer should be a,

- facilitator of learning rather the font of all knowledge,
- negotiator of individual learning outcomes,
- co-learner,
- learning coach and/or mentor,
- co-constructor of knowledge,
- designer of real-world learning tasks and assessment items.

A major part of the facilitator role is to provide feedback to students in a timely manner. Authentic learning relies on the use of meaningful contexts. Reushle, Dorman, Evans, Kirkwood, McDonald, & Worden (1999) suggest while online learning environments should be learner-centred and encourage active exploration and involvement, students need to be motivated and to gain confidence through positive encouragement and success. This is paramount in producing learner-centred approaches to lifelong learning and to the success of the learning environment. In order for this to occur, the facilitator must extend supportive collaborative environments and encourage students to work as members of a team. McFadzean and McKenzie (2001) talk about the changing nature of the teacher from his or her role in a traditional classroom to that of a facilitator in an online environment. A facilitator does not instruct but offers advice and support and builds well-rounded relationships. Perhaps the biggest shift needed for teachers to adopt the above changes relate to their willingness to delegate some of their control to students.

Role of students

The transition to a more learner-centred learning environment is not just the responsibility of the teacher. Learners must also adopt a new and sometimes challenging role. The literature examined for this paper suggests that successful online learners should,

- adopt an active rather than a passive learning approach to their studies – this is quite difficult for some students, particularly with those who have been used to performing well in a passive learning environment;
- be prepared to explore further than the stated curriculum – rather than ask "what do I need to do to pass?" students should ask, "What can I learn from this experience?"
- be prepared to work together in small groups – this is what graduates will experience in the majority of workplaces;

- be prepared to actively contribute to an online discussion and to defend points of view they offer;
- be prepared to accept the responsibility for learning that the teacher has helped them to gain.

Much of the change in student role can be facilitated by the design of the learning activities – teachers also have a role to play with how they "culture" the required interaction.

Role of administrators

The receptivity of academic staff in higher education to technology-based initiatives depends on whether their institution provides meaningful involvement, professional rewards, and other forms of support (Beaudoin, 1998). This level of institutional support, in the authors' experiences, does not appear to exist in the majority of Australian universities. The model discussed in this paper could be considered unconventional and a change from the types of traditional approaches pursued in the past, and as such, implies a need for substantial second-order organizational change (Levy, 1986).

Students also need to be treated as responsible learners. The Pygmalion effect (Rosenthal, 1973) will invariably result if this is not the case. The way in which the institution behaves towards its students will have an effect on how much responsibility the students are prepared to accept. The tone used in correspondence and the level of customer service offered all contribute towards how the students view their role in the organization.

Increasing learning engagement

In response to the changing needs of the learner, facilitator, and institution (brought about by the convergence of information-technology communications and the need to develop lifelong learners), the learning theory adopted plays an important role in fostering and promoting a conducive online learning environment. The authors have already mentioned the underlying idea behind the use of engagement theory (Kearsley, 2003). Embedded within this pedagogical framework is the idea of situating the online setting within the context of an authentic learning environment. This approach has the capacity to promote effective teaching and learning by motivating and engaging the learner. The principles are dynamic in nature and are based on the premise that to learn is to make meaning from experience.

By integrating assessment within the course learning tasks, and by clarifying the important roles of learner and facilitator, teachers/facilitators can promote active learning and increase the effectiveness of the learning model.

Salmon's five step model (Salmon, 2000) suggests that learners should be led gradually through a structured development cycle, to develop the required expertise. She believes this develops the necessary skills for mastery of performance by motivating learners with the use of appropriate "e-tivities". Salmon notes that learners work through this cycle as many times as required in order to expand and explore knowledge.

O'Connor (2000, as cited in Brennan, 2003) views effective engagement as a continuum of development with implied pedagogical practices. This too is in line with Salmon's model, but with a focus more on the environment.

Oliver (2000, as cited in Herrington, Oliver, & Reeves, 2003) suggests that,

> Instead of providing academic, decontextualised exercises that can be used primarily to practice a skill, there are many instances of courses where authentic tasks create the core of the online learning environment, and the completion of the tasks effectively comprises the entire student commitment for the course. (p. 59)

The authors propose that an authentic learning environment may include,

- an opportunity to engage with students from different backgrounds;
- collaboration and co-learning which can foster new perspectives;
- reflection on practice which will enable choices and decisions;
- the integration of life experiences into practice;
- the ability to sustain both individually and socially, lifelong learning.

O'Reilley (2000) believes there is a need to humanise online learning experiences by providing greater compassion, empathy, and a sense of open-mindedness. He suggests that this is critical to the success of any new online learning environment in which our students engage. Support by way of tutor-led facilitation should be provided in the initial stages of the course, which will enable students to feel comfortable and at ease.

When developing an authentic learning environment, we need to encourage active learning and growth towards self-directed learning. This means allowing students to define their own learning topics, facilitating group learning, promoting research and communication skills, ensuring knowledge is transferred, and that students take ownership of their learning. With the multiple purposes of this approach, it is important to consider a variety of evaluation techniques.

James, McInnis, & Devlin (2002) noted there is an imperative to review and renew assessment practices. This new attention to developing creative ways to measure student learning is closely aligned with assessment activity, particularly in online environments. They note,

> Universities are recognising and responding to the changing nature of student lives and priorities. From the perspective of students with busy and complex lives, poorly planned continuous assessment …can be just as tyrannous as the ...final examination. For academics, the new realities of student lives have prompted a search for imaginative assessment practices which do not in any way compromise the integrity and rigour of academic requirements. (pp. 1-2)

Herrington et al. (2002) propose that authentic contexts are best designed around real life scenarios so that knowledge can be transferred and reapplied. The authors have participated in an authentic learning environment via an online role-play simulation. Students took on the roles of fictitious characters within the setting of a regional Australian university. Each character had individual tasks, hidden agendas, responsibilities, and outcomes. The role-play had assessment activities integrated into the scenario posed and the students were free to experiment and explore in a safe environment. The facilitator's role was to support the students and to respond to technical issues.

SUMMARY

Online learning has changed the higher education landscape. Slowly but surely we've found that this "learning space" was different and required a different approach in order to be used successfully. The shovelware or content approach doesn't work, and the absence of a face-to-face learning experience needs to be compensated for by the ability of the learning environment to engage the learners.

Lifelong learning is about learning the skills of learning. The model offered in this paper is consistent with this aim and proposes a clear way forward for educators engaged in online or e-learning.

The roles of educators, administrators, and students need to change, and the learning needs to be authentic in nature. The assessment process should be seamlessly integrated into the learning tasks so that it is part of the learning process. It should be recognized by educators that the online media is the learning environment of the students, and that for them to be engaged in their learning they need to feel that they own the learning environment and that they can assume a role.

Herrington (2002) suggests that learners in authentic learning environments need to "suspend disbelief" in order to be able to engage in the learning process. Perhaps the ease with which this can be achieved differs between the online and physical learning environments? This offers an interesting subject for further research.

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PEER COLLABORATIVE LEARNING AS A DELIVERY MECHANISM FOR DISTANCE EDUCATION IN SOUTHERN AFRICA

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ABSTRACT

Lifelong learners require ongoing support to develop their potentials. Peer collaborative learning (PCL) in distance education can enhance learning and teaching experiences, empower learners and peer leaders, and provide learner support. PCL can build the community culture of lifelong learning that is required to support national capacity building in South Africa.

INTRODUCTION

Central to the revised South African education system (implemented with the new democratic government in 1994) is the emphasis that education in South Africa ensures access to "lifelong education and training opportunities", which will in turn contribute towards improving quality of life and building a democratic society (Asmal, 2002).

This emphasis also includes people being able to apply learning in a variety of situations and circumstances and to grow, educationally, throughout their lives. The South African Qualifications Authority (SAQA) determined critical outcomes (generic outcomes) which inform all teaching and learning. The SAQA Act (1995) developed the integrated National Qualifications Framework (NQF), which embodies all registered unit standards, credits, and qualifications. A fundamental goal of the NQF is to create a mechanism to enable and to promote lifelong learning through the establishment and maintenance of a record of prior learning for each learner.

In terms of open distance learning (ODL) in South Africa, the "Criteria for Quality Distance Education in South Africa" refers to the criteria for academic support –particularly learner support – as "'communities of learning' in which the individual learner thinks and solves problems with others engaged in similar tasks. This is facilitated through a range of learner support mechanisms – peer support sessions…" (Department of Education, 1998).

What is PCL's contribution to lifelong learning? Knapper and Cropley (2000) are of the opinion that "deliberate learning" is essential in order to achieve lifelong learning. The characteristics of such 'deliberate learning' include that it should be intentional and reflect specific goals (which is also the reason for engaging in learning), and that acquired knowledge be retained and applied.

How is PCL linked to lifelong learning? PCL is a methodology for learner support, and an educational approach. It is not a remedial action, but rather a mechanism or delivery tool to assist learners, through a process, with cognitive and social-development objectives to acquire skills towards lifelong learning. According to Arendale (1994), a fundamental ethos of supplementary instruction (SI) (the earliest peer-type program) is that it targets "high-risk" courses rather than high-risk learners.

THEORETICAL FRAMEWORK

The literature indicates that peer-type learning has a long history in some countries. SI in the USA began as early as 1973. Similar "peer learns from peer" programs were introduced and gained popularity in United Kingdom universities during the 1990s (Donelan, 1995; Bidgood, 1994). In all instances, the literature (Donelan, 1999; Coe, McDougall & McKeown, 1999) indicates that this learner-centred learning approach has been beneficial and worthwhile for both the learners who voluntarily attended and the leaders who managed and facilitated the sessions. In both the US and the UK, the initial, small, pilot programs have been expanded to include other high-risk subjects, other faculties and other institutions. Even a cursory reading of peer-learning research indicates that the benefits of peer projects (both for learners and leaders) have been considerable. This is not to say, however, that programs have always run smoothly or without problems.

PCL could become a revolutionary approach that can support the objectives of the National Plan for Higher Education (Department of Education, 2001) as well as the Skills Development Act (1998) in South Africa. In this country, distance education is fast becoming one of the most popular choices for tertiary training and study. Distance education is more affordable and flexible, and is an option for already-employed learners. The National Plan for Higher Education (NPHE) in South Africa states that institutions have a "moral and educational responsibility to ensure that they have effective programs (learner support) in place to meet the … learning needs of the students" (Department of Education, 2001, p. 27-31). The document continues to state that learner support should include a "variety of delivery mechanisms". The mission statement of the former Technikon SA itself states that the provision of effective, decentralised learner support is a central component of its service provision. It is clear from these national directives and this mission statement that a variety of delivery mechanisms should be available to learners. Peer collaborative learning is one such practical mechanism that is being introduced to advance education towards lifelong learning that is flexible, accessible, and reflective in nature.

In line with world trends, South African institutions have now to cope with a new and constantly changing education environment. They are being pressured by government, business, and learners themselves to provide easily accessible, cost-effective, wide-ranging education to ensure job readiness and competitiveness to meet the demands of an increasingly technological economy. Society now demands a skilled workforce that may need continuous re-training of its members if they are to find employment. It is for this reason that the concept of the lifelong learner has become so crucial. Equally, learners' demands have also changed. They now require of their institution convenient, cost-effective, and flexible training and retraining opportunities that are delivered in a professional, service-oriented manner (Jacobs, 2002).

The University of Southern Africa (UNISA) (newly merged), as the largest distance education institution in South Africa, provides access and flexibility to lifelong learners as well as lifelong learning opportunities. With 24 UNISA (former Technikon SA) learner-support offices scattered throughout South Africa as regions, it is seen as an ideal infrastructure for delivery of learning, and it is alligned with the NPHE (2001) directive, "Developing a national network of learning centres, which would facilitate access and co-ordinate learner support systems." These decentralised offices (learning centres) provide access to various learner support services and technological equipment and are utilised for the PCL program. The face-to-face contact eliminates the feeling of isolation associated with distance learning. The PCL process of collaboration is highly interactive and participative. Interaction with fellow learners (peers) has always been regarded as a source of learning. Peer interaction is an important contributor to cognitive and social development.

METHODOLOGY

In Gauteng, South Africa, we have implemented a peer collaborative learning program as a learning strategy aimed at supplementing other types of learner support (such as print material, tutor network, and contact sessions). PCL involves learners learning from one another. For this program, specific, high-risk (i.e., high-failure rate) subjects have been identified and targeted. Senior learners, who have already passed these subjects, are selected to become leaders, and once the leader has been trained in basic facilitation skills and group dynamics, sessions can commence. Sessions are facilitated by the leader, who directs and guides the various group members towards comprehension, understanding, and learning. These trained peer leaders regularly meet groups of learners and facilitate discussion and learning.

Leader training is structured and delivered according to a PCL training manual that has been developed. The manual was compiled, based largely on international best practice for supplemental instruction. Training was contextualised for the South African distance-education environment, with it being divided into theory and application; the training includes sections of facilitation skills development, techniques to handle groups and personalities (group dynamics), and practical group exercises and activities.

Sessions are structured according to the Standard Operating Procedures manual (SOP), to ensure standardisation for multi-regional delivery. Every lesson comprises components of long-term exam planning, generic learner

support, subject-specific objectives and material, and homework and revision exercises. Evaluation and reflection forms (as well as claims and reports) have to be completed by PCL leaders and submitted after each session.

Initially, the progress of the group and the performance of the leader require careful monitoring. The subject content (concepts, areas of difficulty, etc.) covered by the leaders is determined by the relevant academics of those subjects. Leaders begin the two-hour sessions by introducing learners to items of a generic nature; for instance, the requirements of studying by distance education, time management, and study skills. Thereafter, sessions focus on the specific subject matter (guided by academic input). A variety of group exercises to encourage discussion and participation are used. Sessions are concluded with a homework assignment, which is to be completed for the following meeting. Fifteen structured sessions are scheduled throughout the academic cycle according to the critical phases of the academic year.

Attendance by the learners is voluntary, but erratic attendance is discouraged and their commitment to the total number of sessions (15) is requested, as is their participation in all activities and the completion of self-study, homework exercises. For conducting each two-hour training session, leaders receive a small remuneration of one hundred Rand. This is paid to cover expenses.

The following elements are prerequisites for a structured PCL session.

- Positive interdependence – learners in the small group (maximum of seven) share mutual goals and understand the concept of collaboration in order to achieve objectives rather than competitiveness for individual success.
- Face-to-face interaction – classroom layout should promote collaborative learning, interaction, and participation by sharing information, and by assisting and encouraging each other's efforts.

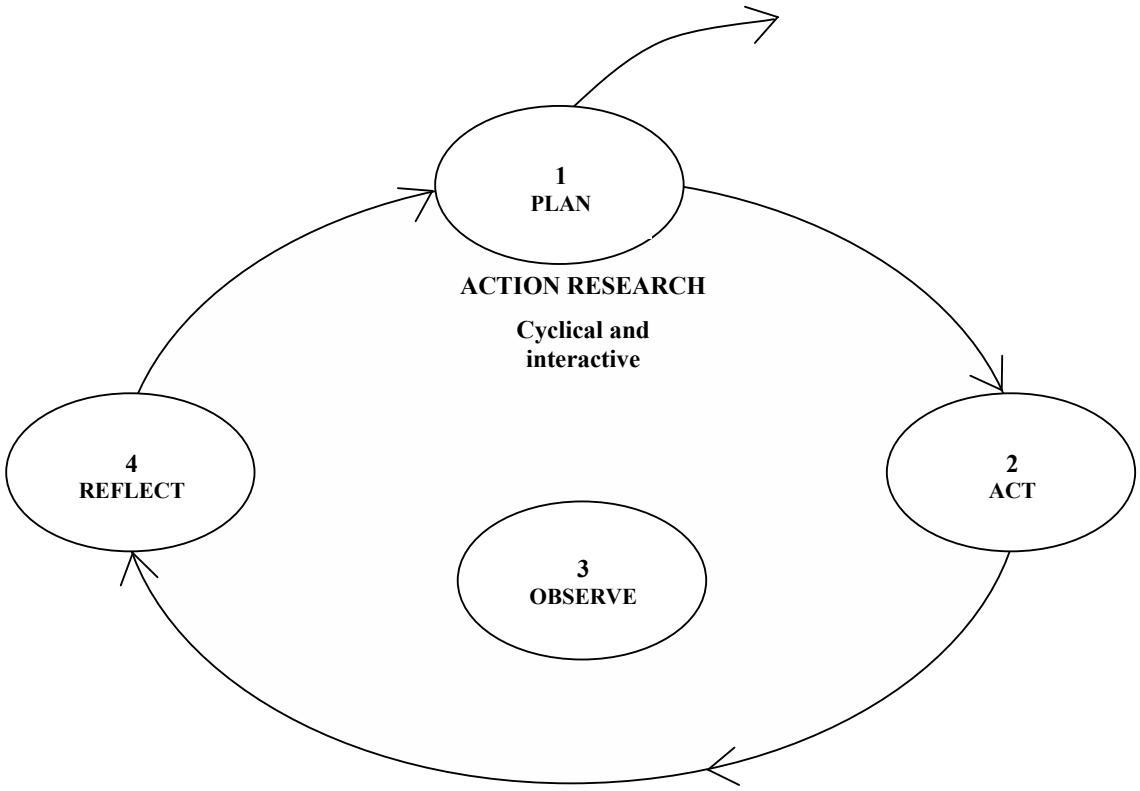

Figure 1. Cyclic process of lifelong learning.[1]

[1] From "The holistic clinic model: ALAR the key ingredients to change and development.," by G. Lyttle 2003, *Action Learning and Action Research Journal*, 8(1), p. 5. Copyright 2003 ALAR Journal. Reprinted with Permission.

- Individual and group accountability – the group is responsible for achieving results and goals and each member must be accountable for contributing his or her share of the work.
- Interpersonal and small group skills are enhanced; learners are required to learn academic subject matter as well as the small-group skills required to function as part of a group (teamwork).
- Group processing – this is structured by assigning activities and tasks to achieve academic acquisition and development. PCL leaders also monitor groups and give feedback on how well groups work together (Johnson, Johnson, & Holubec, 1998).

PCL is being run as an action-research project in Gauteng, the most densely populated province in South Africa. As the project continues, it is simultaneously being evaluated. Zuber-Skerritt (1992) explains how action research is emancipatory in that it "aims at changing the system itself or those conditions which impede desired improvement…." Action research "emphasizes process over a specific content. It recognizes change as a continuous, cyclical, lifelong learning process, rather than a series of programs. It is based on team collaboration, coordination, double-loop learning in order to effect real change and emancipation" (Zuber-Skerritt as cited in Lyttle, 2003). Figure 1 illustrates the action-research process.

The objective of such research is to constantly evaluate data as they become available, with a view to correcting or improving the program and/or its procedures. Learning is not a static event – it is a process. While the project is running, data are continually being collected and analysed in order to evaluate the success of and benefits for learners that participate, and the benefits (if any) for the leaders, and to identify any recurrent problem areas or trends that might indicate the need for modification. This has meant close adherence by all participating offices (four at present) to the same training manual (for leaders), and the submission of standardised report and feedback documents, to ensure reliable data collection.

The PCL intervention was designed and developed around critical phases for learners in an academic year (see figure 2). The PCL intervention sessions were proactively scheduled to prepare learners in advance for academic challenges in each subject and to assist them towards optimum progress. With such an approach, the academic institution could benefit with improved pass rates, throughput rates, and retention. Learners are empowered to complete and submit assignments on time, which allows them examination admission (acquisition of academic knowledge).

THE CRITICAL PHASE INTERVENTION STRATEGY

The critical phase intervention strategy was determined by the following factors: One of the strategic goals of the institution states that student retention and improved throughput rates are of primary importance. The successful continued (financial) viability of the institution is endangered by the high drop-out rate of learners. Consequently, proactive support strategies, which aim at retaining the learner in the system, are essential.

Secondly, the institution has an open-access policy. Anyone, who has achieved a matric (school-leavers certificate), regardless of grades obtained, can apply and be accepted into tertiary study. The result is a learner body of widely differing levels of ability. Weaker learners are often the first to drop out. Any learner support that provides assistance to such learners will assist them to continue to study (and prevent further dropping out).

As a result of South Africa's historical situation, many students have experienced an inferior quality of schooling (both inferior teachers and teaching). Research has shown that the former Technikon SA predominantly draws learners who achieve results of between 33-50 percent in their school leavers certificate (Dr. F. Dresselhaus – personal communication). This means that learners could be categorized as "weak" and in urgent need of additional assistance if they are not to become contributors to the drop-out statistics.

The majority of learners who enter tertiary distance education studies are second or even third language speakers of English. Yet the language of education is English. This immediately places them at a disadvantage. Although they may be reasonably fluent in verbal communication, they do not have the necessary CALP (cognitive academic language proficiency) to cope with academic reading material and to sufficiently understand, process, and make sense of academic writing.

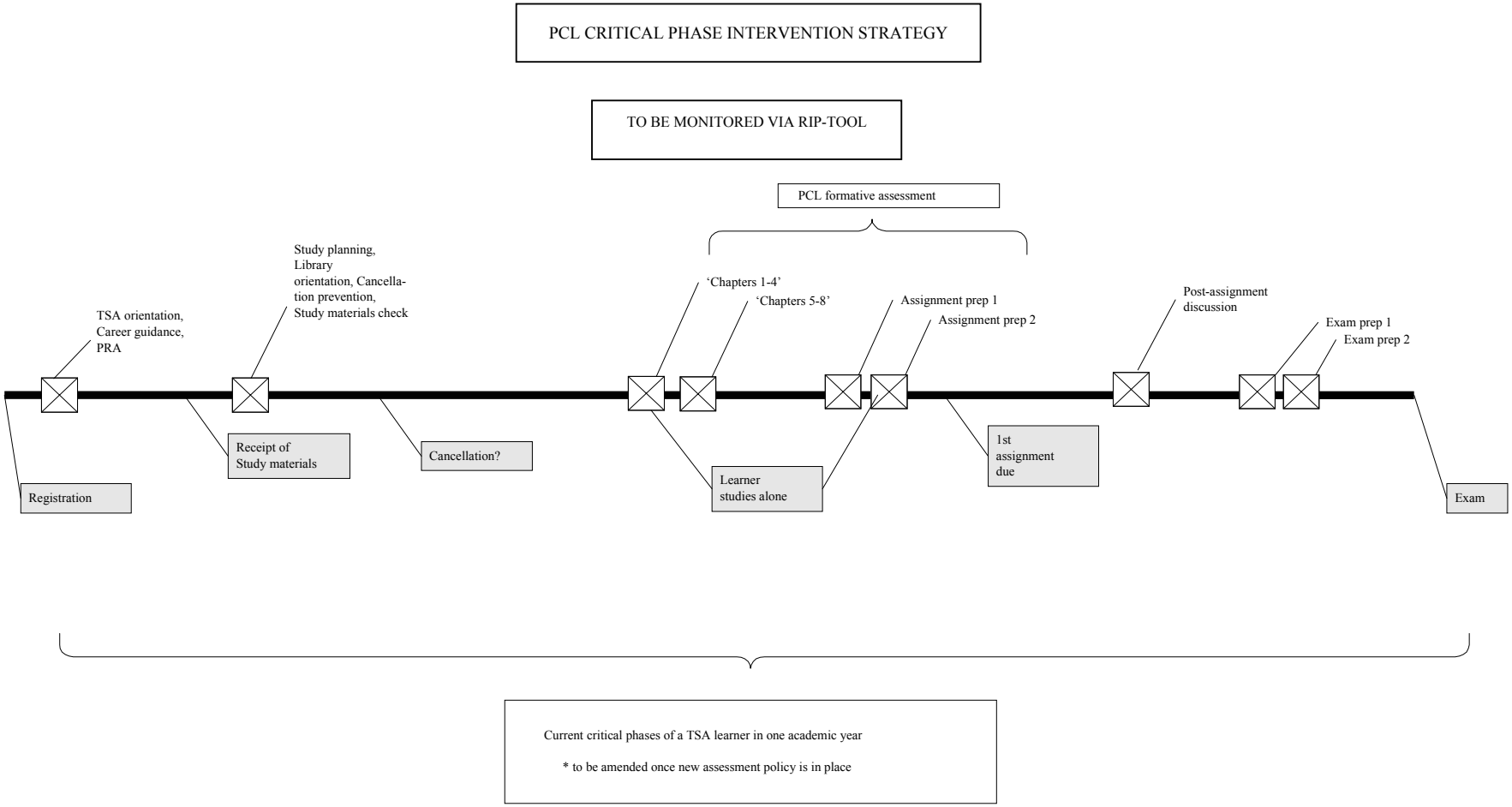

Figure 2. PCL critical phase intervention strategy.

Finally, financial considerations are often the primary reason why people select distance education. The result is that many students are not truly the self-directed learners that are required to achieve success with self-study. In addition, the present curriculum on offer to learners does not have at its core the fundamental philosophy of interactive participation. This could only be provided by learner-support intervention strategies.

All the above factors contribute to the reality that many of our learners urgently need learner support initiatives and interventions, if they are to succeed with tertiary education. PCL is an attempt to pilot one such support initiative.

The "critical phases" were determined by a survey of data , collected over the past few years that indicated, at what stage during the academic year (between registration and successful completion of exams) learners were most likely make the decision to discontinue with their studies. An examination of figure 2 will make this clear. There are certain peak points, such as after receipt of an assignment and failure to attain exam entrance, when learner drop-out is particularly high. Sessions were scheduled to proactively attend to the progress of learners.

PCL project participants will be writing exams during May / June 2004 and learners are preparing for exams during the last sessions. Preliminary feedback consists of negative and positive remarks. Positive feedback includes positive remarks from students who regularly attended sessions, to negative feedback of erratic attendees and lack of commitment by some learners.

Regional academic managers are responsible for the implementation of PCL according to the Standard Operating Procedures, to monitor the project on site, and to execute quality audits. The source documentation (attendance lists, lesson plans, evaluation documents) are sent to the Academic Development Centre (ADC) where the project leader will record and analyse data to determine the impact of the project. Project results will be published after the availability of the exam results.

CONCLUSION

Learning is enhanced through the processes of interaction and collaboration. The culture of collaboration among peers is critical to a culture of lifelong learning. This PCL project is one such delivery mechanism of learner support to facilitate lifelong learning. PCL as an educational tool can compensate for inadequate learner support structures in the distance-learning context.

The advantage for distance education in South Africa, where learners are scattered over considerable geographical distances, is that groups can meet anywhere and at any time (access and flexibility). Using computer and communication technology, academic input and monitoring of a leader from the nearest regional office would enable a national "roll-out" to regional centres in decentralised areas.

PCL can be applied and implemented in a range of ways, and it is currently piloted, promoted, and recommended to first-year students. Student participants, PCL leaders, and staff involved with the project are benefiting in various ways from the PCL project participation. Finally, the fundamental philosophy of engagement enables a cooperative approach to learning that enhances understanding and thinking skills and in the process enhances the total learning experience of learners.

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MEDIA AND MEDIATION: INFORMATION LITERACY AND THE CONSTRUCTION OF LGBTQ CULTURAL LITERACY

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ABSTRACT

In this essay I discuss using information literacy to build LGBTQ cultural literacy so the needs of LGBTQ Canadians, especially teachers and students, can be met. I link this work to lifelong learning and I use the Alberta Teachers' Association's *Sexual Orientation and Gender Identity* website as an example of how this work can be done.

INTRODUCTION

My political and pedagogical project, which guides my teaching, community service, and research, is focused on rearticulating education for citizenship in Canada within the context of a contemporary multicultural society where LGBTQ (lesbian, gay, bisexual, transgender, and queer) citizens have become increasingly visible in our cultural mosaic while still being denied the rights and privileges of full citizenship. My ongoing research, which is funded by the Social Sciences and Humanities Research Council of Canada, has this primary purpose: to study welfare-and-work issues for LGBTQ teachers in Canada's provinces and territories. In keeping with my political and pedagogical project, this study investigates the need for *every* Canadian to further question identity, difference, pluralism, equity, diversity, and inclusion as integral sociocultural dimensions of Canadian citizenship. These aspects of civility affect life, learning, and work. In schools as teachers' workplaces, teachers work at the intersection of the moral and the political. In this milieu LGBTQ teachers have had to separate the personal (the sex-and-gendered self) from the professional (the educator acting *in loco parentis*). This is still the case for most teachers because, as my research indicates, significant efforts in Canadian law and legislation to advance the rights and privileges of LGBTQ Canadians have not translated into full accommodation for us in education and culture. Thus, with the support of a Centre for Research on Literacy Research Fellowship from my university, I have incorporated the following focus into my research: to use information literacy to build cultural literacy around LGBTQ citizens and their issues.

I begin this essay by discussing the importance of information literacy as an enabler of lifelong learning. I discuss using information literacy to build LGBTQ cultural literacy so the needs of LGBTQ Canadians, especially teachers and students, can be met. I use the Alberta Teachers' Association's *Sexual Orientation and Gender Identity* website as an example of how this work can be done.

THE IMPORTANCE OF INFORMATION LITERACY AS AN ENABLER OF LIFELONG LEARNING

Tuijnman and Boudard (2001) declare that learning improves literacy outcomes if it includes "schools, homes, workplaces and whole communities;" that is, learning is better when it is "life-wide" as well as "life-long" (p. 9). From a civil perspective, they maintain that lifelong learning is also better when it includes emphasis on "strengthening social cohesion and active citizenship" (p. 9). As a vehicle for social education, lifelong learning can benefit citizen learners by assisting their personal, social, and cultural development through participation in diverse learning activities in formal settings such as schools, colleges, and universities; in non-formal settings such as workplaces, churches, and community venues; and in informal settings such as media, websites, and public awareness campaigns (Boshier, 2000). In this focus on citizen learners and democratic citizenship, lifelong learning can attend to matters of context, disposition (attitudes, values, beliefs, and motivations), and relationships of power that predispose learners to have positions and take stands on social and cultural issues. In the final report of the American Library Association (ALA)(1998) Presidential Committee on Information Literacy, the importance of information literacy is linked to democratic citizenship:

> Citizenship in a modern democracy involves more than knowledge of how to access vital information. It also involves a capacity to recognize propaganda, distortion, and other misuses and abuses of information. … To say that information literacy is crucial to effective citizenship is simply to say it is central to the practice of democracy. Any society committed to individual freedom and democratic government must ensure the free flow of information to all its citizens in order to protect personal liberties and to guard its future. (ALA, n. d., p. 4)

When lifelong learning is a socially focused engagement, it can assist citizen learners to build the knowledge and understanding necessary for building communities of difference where change can be mediated and the civil unrest and destructiveness wrought by ignorance and fear can be overcome. In these communities, new balances across social and cultural differences and new ways of communicating, connecting, and living together are emphasized. It is here that lifelong learning has to be innovative, adjusting to the social and cultural milieu that demands it help foster cultural literacy and social cohesion. Information literacy can help lifelong learning achieve these civil goals since, in general, "literacy has long been valued [for] … the capacity [it provides learners] to participate fully in society" (Canadian National Literacy Secretariat, n. d., p. 4).

"Information Literacy is the set of skills needed to find, retrieve, analyze, and use information" (ALA, n. d., p. 1). It is necessary for lifelong learning which is focused on enhancing the quality of learning for life and work, and for building a functional democracy (ALA, n. d.). It is necessary to position people as arbitrators of information:

> Ultimately, information literate people are those who have learned how to learn. They know how to learn because they know how knowledge is organized, how to find information, and how to use information in such a way that others can learn from them. They are people prepared for lifelong learning, because they can always find the information needed for any task or decision at hand. (ALA Presidential Committee on Information Literacy, 1989, as cited in ALA, n. d., p. 1)

This suggests that information-literate people are thinkers (with critical capacity) and doers (with technical capacity). In the process of information retrieval, as Laverty (1997) emphasizes, "Analysis of an information need, knowledge of resource types, evaluation of access tools, and interpretation of results … [all involve critical thinking]" (p. 1). Thus information literacy plays an important role in holistic lifelong learning; it "is a means to express personal ideas, develop arguments, refute the opinions of others, learn new things, or simply identify the truth or factual evidence about a topic" (p. 1). From this perspective, information literacy is about knowing how to learn, and it is the freedom to learn – cognizant of both the *how* and the *why*. The information literate learner is self-reliant, critically involved, not subservient to the expert, able to provide an evaluative account of information surveyed, and in control of a learning process where knowing how and why helps mediate what David Shenk

(ALA, n. d.) calls *data smog* in the search for small truths.

USING INFORMATION LITERACY TO BUILD LGBTQ CULTURAL LITERACY

There is an increasing volume of Canadian and international research documenting the marginalization and abuses of LGBTQ teachers and students in education, culture, and society (Grace & Benson, 2000; Quinlivan & Town, 1999). There is extensive complementary research indicating that heterosexism, homophobia, and sexism, in conjunction with racism and other abuses of power, function in schools to sustain and reproduce specific power and privilege structures that abet heteronormativity in maintaining the social and cultural status quo (Pinar, 1998). In Canadian K-12 education, tolerated hatred of LGBTQ teachers and students is normalized in school settings (Canadian Teachaers' Federation [CTF], 2003). Constant risks exist to the professional security of LGBTQ teachers and to the personal safety of LGBTQ teachers and students (Grace & Benson, 2000; Grace & Wells, 2001). The danger and damage to LGBTQ students (and to students perceived to be LGBTQ) is immeasurable (D'Augelli, 1998). It is exacerbated by a pervasive contemporary phenomenon: queer youth are acknowledging and embracing their sex-and-gender differences at younger ages, asserting their identities and, in some cases, becoming more confrontational. This increases possibilities of retaliatory dangers (D'Augelli, 1998).

In this environment of exclusion and risk, the need for LGBTQ cultural literacy has never been greater. We need a cadre of culturally-literate individuals, groups, and agencies knowledgeable about LGBTQ issues in education and in the larger culture and society. Parents, administrators, school district personnel, teachers, support staff, teacher unions and associations, governmental departments of education, and community organizations need to be culturally informed and critically aware so they can exercise influence and leadership to create safe, caring, and inclusive schools. Perhaps most importantly, youth need to be culturally informed and critically aware. One danger of cyberspace is that youth may rely solely on the high-tech world for interaction, thus losing social connectedness. Youth can learn to defame, defile, dismiss, deride, reject, and hate while sitting in front of a computer. They can become cyber-Nazis through haphazard informal learning. This possibility has generated the moral panic that has resulted in demands, often from computer-illiterate politicians, for more control, censorship, and surveillance of communication on the Internet (Kellner, 1998). A better response would be to teach youth to become information literate so they can become culturally literate and, hopefully, responsive and responsible citizens.

In Canada there have been progressive moves in law, legislation, education, and health that support LGBTQ human and civil rights. This progress has significantly advanced knowledge. Information literacy, which is an encompassing concept and process that includes building computer, library, media, network, and visual literacies, can enable the exchange, distribution, and evaluation of this knowledge. To be information literate today, Partridge (2000) asserts that one must have "the capacity to seek, retrieve, organise, analyse, synthesise, and present information using a variety of sources and formats" (p. 209). Senn Breivik (2000) accentuates the importance of information literacy, asserting that today's citizens need to be able to access, evaluate, and productively use information to address issues and solve problems in their personal, civic, and work lives. She believes that an information-literate citizenry with universal access and quality information can become a knowledgeable and empowered people able to act on difficult issues.

Using information literacy to build LGBTQ cultural literacy can fortify the development and implementation of an LGBTQ inclusive pedagogy. To build LGBTQ cultural literacy an individual needs to,

- increase awareness of self and others as a study of similarities and differences;
- understand LGBTQ politics, motivations, dispositions, and cultural practices;
- understand how hegemony works to include or exclude LGBTQ persons across different ways of being, becoming, belonging, and acting;
- remember that cultural and other forms of knowledge are socially constructed, so some forms of knowledge are not connected to truths about cultures;
- debunk myths and reject stereotypes that debase LGBTQ persons; and

- understand the inextricable ways that culture, history, language, knowledge, and power interconnect.

An engagement with LGBTQ inclusive pedagogy as a public pedagogy is intended to advance social cohesion, cultural democracy, and larger public interests focused on social justice in education and society. This pedagogy aims to supplant ignorance, fear, exclusion, and violence with knowledge, understanding, respect, and accommodation. When other citizens are LGBTQ culturally literate, this helps deconstruct the outsider status given LGBTQ citizens due to their sex-and-gender differences. This deconstruction is vital so that LGBT persons can obtain respect and be accommodated. Knowing and knowing about LGBTQ persons helps others to overcome their ignorance and fears, which in turn helps LGBTQ persons to achieve the rights and privileges of full citizenship.

THE ALBERTA TEACHERS' ASSOCIATION'S *SEXUAL ORIENTATION AND GENDER IDENTITY* WEBSITE

In mainstream education there is this perception: "Ideas from nonmainstream races, cultures, or other microcultural groups are exotic, strange, unnecessary, or possibly immoral or evil" (Laughlin, Martine, & Sleeter, 2001, p. 93). Vandergrift (1995) asserts that literacies are socially constructed in terms of their acceptability, appropriateness, and usefulness in particular contexts and cultures. Formal education assists in this exclusionary work that disenfranchises particular differences. "Curriculum, as a selection from possible cultures and literacies, marginalizes or omits alternative cultures and exercises social and political control over participants in schooling" (p. 42). As an alternative, "cultural literacy ought to be a literacy of inclusion, one that transforms as well as conserves the heritage so people can recognize themselves in the artifacts of our world. Such transformation does not negate our heritage; it enlarges and enriches it (Vandergrift, 1995, p. 44). Of course, some fear inclusion as an assault on tradition and "core" culture. The fear of LGBTQ inclusion is probably greatest for those with dispositions constructed at the intersection of conservative politics and morals. As they imagine what would happen if schools were LGBTQ inclusive, they recede to the realm of myths and stereotypes. For example, they might envision gay teachers as pedophiles lurking in elementary schools. They might picture gay boys with feather boas lisping dialogue from Oscar Wilde's *The Importance of Being Earnest.* In ignorance and out of fear they would castigate LGBTQ teachers and students and exclude them from the realm of the accepted and acceptable.

Amid such myths and stereotypes, LGBTQ cultural literacy is necessary to achieve these educational and cultural goals: to respect and accommodate sex-and-gender differences and to create inclusive communities that promote personal and social wellbeing. In today's multimedia learning environment information literacy is required to build LGBTQ cultural literacy. Individuals need to be discerning as they surf the Internet. They need to interrogate and evaluate the information about sexual orientation and gender identity that is available on numerous websites that have numerous intentions. Information literacy helps the user of websites to investigate the educational utility, effectiveness, and quality of these cyber-sources of information. This involves careful scrutiny of a particular website, noting its purpose, design, content, pedagogy, intended audience, communication strategies, and the interests at work.

An example of a cyber-source of information that I have investigated in terms of its educational utility and effectiveness is the *Sexual Orientation and Gender Identity* website developed under the auspices of the Diversity, Equity, and Human Rights Committee of the Alberta Teachers' Association. Kristopher Wells, a former schoolteacher and current doctoral student in educational policy studies at the University of Alberta, constructed the website. Kris intended the site to be a source of information to help teachers, parents, students, school administrators, counselors, and the general public build LGBTQ cultural literacy so schools might support LGBTQ students and teachers who deserve to be safe and secure in inclusive environments where they are respected and accommodated. He also intended the website to be a resource to inform educational policy-making and program development. In this regard the critical role of educators in providing a safe and caring learning environment for LGBTQ students is emphasized.

> This website has been designed to assist educators in their legal, professional and ethical responsibilities to protect *all*

> students and to maintain a safe, caring and inclusive learning environment. Addressing homophobia is an important part of that obligation. This website provides Alberta teachers with information, contacts and resources that can assist them in creating safe, caring and inclusive learning environments for LGBT students and staff. (ATA, n.d., p. 1)

As a source of information, the website is encompassing. It addresses a set of reflective FAQs (frequently asked questions) to give ontological, epistemological, social, and cultural perspectives on sex-and-gender differences. In answering questions, ideas are suggested for enhancing LGBTQ-inclusive education. The answers provide supportive, practical information and refer readers to related links as appropriate. The website also lists the following practical actions to help teachers create a safe learning environment.

- Develop knowledge and awareness.
- Examine the language you use.
- Take a close look at your classroom.
- Challenge homophobic jokes or remarks.
- Develop inclusive material.
- Advocate directly for LGBT youth.
- Develop a support network.
- If you are a gay, lesbian, bisexual or transgender teacher, consider coming out. (FAQs: What can one teacher do?)

The website also outlines practical steps to improve the overall learning environment:

- Create and specify clear policies and rules of conduct.
- Assess the existing school climate.
- Adapt curriculum.
- Provide staff training.
- Provide workshops.
- Involve community partners.
- Support student human rights groups. (FAQs: How can one create safe, caring and inclusive educational environmens for LGBT students and teachers?)

In addition, the website supplies information and links to help teachers understand their ethical and legal responsibilities. There is a detailed listing of publications and local contacts. As well, since there are many Catholic school boards in Alberta, the website provides information to help teachers support Catholic LGBTQ youth. While the Catholic Church acknowledges that homosexuality is a generally unchangeable individual trait, sadly it holds the tenuous position that homosexual acts are acts of grave depravity.

As a concluding perspective, I leave you with Mark Holcroft's evaluation of the website. Mark is a gay undergraduate student in teacher education in the final semester of his program in elementary education. He critically reflects,

> This is the first time that I have worked my way through the entire *Sexual Orientation and Gender Identity* website. As a regular user of the Internet, I was impressed with the format, the content, and the usefulness of the site. I really liked the comprehensive resource listing. As a gay teacher, I felt empowered because there were tools to help me deal confidently with my own fears and hesitations as I gathered practical information to help make my school an LGBTQ-positive space. The site also provided me with educators' ideas and with resources and cautions to help me deal with what still is a potentially explosive topic in most schools.
>
> As an educator reviewing this website, I saw three themes explored. First, there is the theme of *ethical obligation.* The website made it clear that teachers must protect *all* students and provide a safe-and-caring learning environment. This duty is highlighted by a link to the *Code of Ethics* of the Alberta Teachers' Association. Second, there is the theme of *relevant and necessary responsibility.* The website appeals to the teacher as a caring individual. It emphasizes the educator's responsibility in addressing homophobic/heterosexist attitudes. The third theme is *supporting and enabling.* The website supplies practical information regarding steps a school, a community, and a teacher might take to help create a safe learning environment. It also provides information to assist teachers with their personal worries and fears around working on LGBTQ issues.

CONCLUDING PERSPECTIVE: APPRECIATING LGBTQ

Information literacy can enable the building of cultural literacy as a medium to advance social cohesion, cultural democracy, and larger public interests focused on social justice in education and society. Kellner (1998) offers the following perspective on cultural literacy.

> New forms of social interaction and cultural awareness are needed that appreciate differences, multiplicity and diversity. Therefore, expanded social and cultural literacy is needed that appreciates the cultural heritage, histories, and contributions of a diversity of groups. … We also need to become culturally literate in cultures that have been hitherto invisible. (p. 119)

LGBTQ persons have had to be invisible to survive in the mainstream intersection of the moral and the political. As citizens, we want more. Building cultural literacy is part of the journey toward full citizenship.

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MEDIATING LIFELONG LEARNING IN CANADA IN INCLUSIVE CONTEXTS

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ABSTRACT

This essay explores the conceptualization and parameters of contemporary lifelong learning in Canada. It considers the learning-and-work crisis of Canadian youth, and government strategies to address the crisis. It suggests that lifelong learning is not always a cure for dislocation in life and work.

INTRODUCTION

I begin this essay with a focus on the conceptualization and parameters of contemporary lifelong learning in Canada. I explore the contested nature of this versatile concept that deeply impacts learner-workers negotiating the complexities of learning for life and work today. Next, to indicate the challenges and complications of lifelong learning, I explore the learning-and-work crisis of Canadian youth. I consider government strategies designed to meet the needs of youth, and I examine the disposition of youth toward cyclical lifelong learning as a medium for learner-worker development. I conclude with a perspective that suggests lifelong learning is not always a remedy for dislocation.

THE VERSATILE AND CONTESTED CONCEPT OF LIFELONG LEARNING

Shifting life-and-work prospects, as well as varying perspectives on adult learning and participation, have reconfigured the forms and functions of lifelong learning over time. Moreover, different ideologies as well as the social, cultural, economic, and political permutations at play in different decades have also shaped its direction, priorities, and outcomes (Cruikshank, 2002; Grace, 2000; Rubenson, 2002). Today we live with an OECD (Organization for Economic Cooperation and Development) concept of lifelong learning that specifically focuses learning on worker performativity in a global economy in which knowledge is commodified and information literacy is valued (Cruikshank, 2001; OCED, 2000). In critical terms, this education – tied to productivity and marketability – is often reactive, spawning a lifelong-learning formation that limits learning for life in the rush to expand learning for work.

In Canada, which has one of the best educated workforces in the world, the employed, unemployed, and underemployed are all constantly told that they need more and better education in order to have a place in the new economy (Cruikshank, 2002). Cruikshank (2003a, 2003b) argues that lifelong learning in Canada has been transformed from a broad-based learning paradigm with applicability to learning for life and work, to an economistic process of skill acquisition disconnected from civic and social concerns. Thus, instead of providing the way out in a change culture of crisis and challenge, lifelong learning may prove to be little more than a time reprieve or a band-aid in addressing the uncertainties of life and work. Indeed, for many citizen workers, lifelong learning may be no way out because there is less quality work out there. While more than half a million jobs were created in Canada in 2002, the vast majority were low-paying, service-sectors jobs, and 57 percent of them were categorized as part-time and self-employment (Cruikshank, 2003a). In this milieu, many citizen workers constitute the entrepreneurial, contingent, and flexible, subsisting in an economic limbo as governments and employers maneuver to thrive and unions struggle to survive (Cruikshank 2003a; Grace, 2002a, 2002b). And when things don't work out, apparently only the learner-worker investing in lifelong learning is to blame (Boshier, 2000; Cruikshank, 2003b; Rubenson, 2002).

This focus on individual accountability and responsibility is a pressure point for learner-workers involved in contemporary lifelong learning. For example, Human Resources Development Canada (HRDC) (1998) asserts it will assist "Canadians to manage transitions in their lives by encouraging them to become self-reliant, invest in themselves and become more adaptable" (p. 1). To this individualistic end HRDC frames lifelong learning as a

"preventative measure" (p. 2) to produce a skill-competent and information-literate citizenry who will contribute to the prosperity of a knowledge-based economy and society. While there is not adequate research to support its accentuation, individual training and development, in which the individual is increasingly held responsible for participation and payment of costs, is seen as a way to achieve this prosperity (Edwards et al., 2002). According to HRDC (2000), if lifelong learning as an individual project is successful, then local communities and Canadian society as a whole will benefit. However, the agency fails to consider the complexity of the social aspect of this process, ignoring the impact of disposition, context, and relationship on possible lifelong-learning outcomes. Indeed Rubenson (2002) sees a distinct danger in promoting lifelong learning as an individual project, arguing that social needs are left behind in the rush to individualize lifelong learning:

> The obvious danger in regarding lifelong learning as fundamentally an individual project is that as the public good aspect of lifelong learning is pushed to the side, the moral imperative of social needs is being sacrificed on the altar of individual choice. Lifelong learning for active citizenship and democracy cannot be reduced to an individual project. Instead civil society refers to how and when the basic values, conduct, and competencies of democracy are developed among citizens and puts focus, not on the individual but on the relationships between individuals, as well as collective aspirations to create a better society. (p. 245)

If HRDC (2000) is to fulfill its mission, which is "to enable Canadians *to participate fully* in the workplace *and* in the community" (p. 1, italics added), then it will have to engender and support forms of lifelong learning that move beyond a myopic individualism to address the instrumental, social, *and* cultural needs of citizen workers. These forms of lifelong learning, complementary in enabling citizens to participate fully in life and work, are all vital when citizen workers are displaced so that full participation can be re-established. However, any notion of full participation dissipates when lifelong learning is simply used as a stopgap measure to address the work-related needs of an alienated contingent of functionally unemployable Canadians. For example, when a moratorium on cod fishing took away the livelihood of many fishers in the Canadian province of Newfoundland and Labrador in the early 1990s, these dislocated workers were pressured by government to engage in lifelong learning in order to receive social assistance. Not to participate in order to prepare for new work would have, in a real sense, been tantamount to an erosion of their citizenship since being a full and contributing citizen of a nation is usually considered synonymous with being employed and paid. Many fishers participated in learning for work; however, they were not consulted in decisions regarding the form, utility, or practicality of their learning. As a result, these fishers often received knowledge-and-skills training that exacerbated their life-and-work crises. Dislocation from the fishery was often compounded by dislocation from family and community when displaced fishers received knowledge-and-skills training that required them to move, often to another province, in order to find work. The effects of the cod moratorium, coupled with other socioeconomic upheavals in what has always been one of Canada's "have-not" provinces, have been profound. For example, according to national census data, the population of Newfoundland and Labrador dropped by 5.7 percent between 1991 and 2002, and it is the only Canadian province to show a declining population every year since 1998 (Statistics Canada, 1991 & 2002).

CYCLICAL LIFELONG LEARNING AND THE PLIGHT OF CANADA'S TROUBLED YOUTH

Many Canadian youth – considered to be 15 to 30 year olds in the current federal context – have trouble negotiating the intersections of life, learning, and work in the quest to lead happy, fulfilled, and productive lives. This predicament has sorry individual and social consequences. This is amply demonstrated, for example, by the sad scenario discouraging and disenfranchising youth in the province of Newfoundland and Labrador. It is not only the province's cod that have been decimated for more than a decade, but also its future – its youth. The province's current youth population is 103,845 (Newfoundland and Labrador Statistics Agency [NLSA], 2003). It is expected to decline to 88,607 by 2010 and even further to 77,761 by 2016 (Government of Newfoundland and Labrador, Department of Finance, 2002). During 2000-01, 93.8 percent of

the province's out-migrants were youth (Statistics Canada/NLSA, 2002). During 2001-02, the provincial youth unemployment rate ranged from a low of 17.9 percent to a high of 27.5 percent (Statistics Canada, 2003). Furthermore, the majority of employed youth are not engaged in quality work. They are generally employed in retail sales (34 percent), restaurant and fast-food services (20 percent), the service industry (12 percent), and general labor (11 percent) (Government of Newfoundland and Labrador, 2003). These youth are part of a cadre of workers whose social misery and exploitation are hidden behind titles like "sales associate" that belie the poor wages and the lack of worker benefits that come with such contemporary labels. Many exemplify Bauman's (1996) postmodern workers: they toil in an unstable work world where trades and jobs are often unprotected, appearing and disappearing without warning. Time to acquire skills can exceed the period such skills are in demand. In this work milieu, rationalization is the code word for justifying instability. Vocation loses meaning as postmodern workers are left to run on training treadmills that always seem to require quicker steps, different steps. Workers are reduced to techno-vagrants wandering from job to job and workplace to workplace.

Exacerbating the instability of work for youth is the difficulty and frequent impossibility of finding quality work close to home. In 2003 the Royal Commission that focused on strengthening Newfoundland and Labrador's place in Canada reported that the vast majority of the province's youth felt "a regretful lack of choice" in their pursuit of career opportunities close to their home communities or within the province (Young, et al., 2003). The Commission blamed the crisis of youth employment and retention on a lack of supports for youth such as adequate career development services (Young, et. al., 2003). Here, in assigning blame, the Commission hums the federal mantra of support for cyclical lifelong learning and individual learner-worker development. The Commission's emphasis on the need for career development services illustrates that Canadian lifelong learning and workforce enhancement have conjoined in a sustained consultative and collaborative process of career development (Canadian Career Development Foundation [CCDF], 2003). Indeed the CCDF (2003) portrays career development services as "portals for learning and work across the lifespan" (p. 4). To drive career development, the foundation situates lifelong learning as a strategic process for worker renewal and upgrading. This is viewed to be in Canada's interest because adult worker participation in adult education and training stagnated through the 1990s, creating a tremendous need for workers to continuously renew and upgrade to keep the nation's economy globally competitive (CCDF, 2003).

While more Canadian youth appear to be staying in school due to a difficult labor market and the perception that a better education helps realize a better future, many others are not disposed to cyclical participation in lifelong learning (HRDC, 2002a). Despite the pervasive perspective that cyclical lifelong learning enhances the lives of citizen learners and workers, some youth chose not to participate at all because they see lifelong learning as a vicious cycle (HRDC, 2002a). But what is the new lifelong learning movement doing for youth? In particular, how is government performing as it abets lifelong learning? In Canada, federal agencies and councils assuming responsibility for lifelong learning have been promoting strategies that value cyclical lifelong learning and individual responsibility for learning plans. For example, HRDC and CMEC (Council of Ministers of Education, Canada) have jointly focused on developing a Canadian model of school-to-work transitions designed to provide multiple and flexible pathways to youth, as well as opportunities to return to school and change direction via a range of career choices (CMEC, 1998; HRDC 2002a, 2002b). The term *school-to-work transitions* refers to "the various ways that young people move among and within the worlds of education, training, and work" (HRDC, 2002b, p. 1). Youth are expected to engage in economistic lifelong learning to adapt to these transitions:

> It is possible to blend good features from both the market and institutional approaches. Indeed, many examples of school-to-work programs (such as cooperative education, youth internships, and business-education partnerships) can be found in Canada. (HRDC, 2002b, p. 3)

Youth seem stuck in perennial transitions as they mediate a fundamentally changing work world where part-time, temporary, and contract work are pervasive. Such is life and work in a new economy impacted by globalization, knowledge work and the information revolution, and economic restructuring.

Despite foci on cyclical lifelong learning and individual learner-worker development as ways to enhance the economic and the social aspects of life, many youth across Canada continue to experience difficulties in becoming part of an educated, skilled, and flexible national workforce. HRDC (2002c) acknowledges their plight:

> The [Canadian] youth unemployment rate has consistently exceeded that of the adult population and has been more affected by the business cycle. Historically the youth unemployment rate has been about twice the rate of the adult population. Young workers are often the 'last hired and first fired' because of their relative lack of seniority and experience. As a result, they have a higher turnover rate and, therefore, a higher unemployment rate than their older counterparts. (p. 2)

Consequentially, many youth face social misery as a chameleon that takes many forms in its assault on their integrity. Too many of them swell the ranks of the poor, the underemployed or jobless, and the homeless. They are far from being part of the Tommy Hillfiger set, enjoying the benefits of CLUBtommy membership (CLUBtommy, 2000).

The plight of Canadian youth has become particularly apparent in larger urban areas like Toronto and Vancouver, which have become hollow endpoints for youth migration toward the ethereal good life. Many youth are stigmatized as social outcasts and misfit kids. Some are illiterate, unskilled and/or unemployed because education and government, often promoting programs that provide more education for the already educated, have failed to include them. A small but increasing number of young adults are avoiding lifelong learning and dropping out of the labor force, perhaps to be left behind as socioeconomic outcasts in the new economy (HRDC, 2002a) and, more importantly, in life. When cyclical lifelong learning is not for all, there is cause for concern because a new classism that leaves certain citizens behind becomes increasingly apparent. Perceived as unskilled, unqualified and uneducated, this "lesser class" of citizens is outcast in the new economy. However, they should not be shunted aside. Indeed their dislocation ought to trouble providers of cyclical lifelong learning, as it raises a key question: How might educators address issues of access, accommodation, disposition, context, and relationships of power via lifelong learning so that the unskilled, unqualified, and uneducated are not dismissed from full participation in work and culture? In other words, how do we realize *lifelong learning for all* in a socially responsible and responsive manner?

It is no wonder that youth want and demand more. As learner-workers at the beginning of their work lives, work-life balance is already ethereal. Increased stress, decreased job satisfaction, and increased roles are often associated with work, when they have it (CCDF, 2003). In this milieu, youth offers this challenge to those involved in assisting them with career development: to replace a crisis delivery model of lifelong learning with culturally-relevant, career-development services that help youth to develop prowess in decision-making (CCDF, 2003). In their message to government policymakers and employers preparing for the November 2003 Pan-Canadian Symposium on Career Development, Lifelong Learning, and Workplace Development; Canadian youth emphasized, "We need

- to feel we are learning with a purpose,
- [to have] mentorship in educational and workplace settings,
- to have guidance and networks to access meaningful work, [and]
- to have teachers and counsellors who are not stretched to the limit." (CCDF, 2003, p. 5)

In this needs assessment, youth are not asking for the sky, just their piece of the Canadian pie to which they are entitled as citizen learner-workers. Those of us engaged in lifelong learning in this country have a responsibility to respond, to help them get it.

CONCLUDING PERSPECTIVE: LIFELONG LEARNING IS NOT ALWAYS A CURE FOR DISLOCATION

There is a general consensus that we ought to participate explicitly in inclusive, holistic forms of lifelong learning (Edwards, 2000). This participation is deemed necessary so that "we are able to engage with the forms of dislocation associated with economic, social and cultural change" (Edwards, 2000, p. 23). It would apparently help us avoid the implicit risk of social and economic exclusion that nonparticipation threatens. Of course, as

Edwards (2000) underscores, the underlying assumption is that lifelong learning is a cure for dislocation. However, his answer to the question "Do all lifelong-learning practices benefit learners?" is "No." Certainly, those Canadian youth choosing to avoid lifelong learning are, in effect, providing the same answer. Taking a similar stance to Edward's, Field (2000) asserts, "Lifelong learning has itself become one key dimension in the process of social exclusion and inequality – not only in the sphere of employment and earnings, but also in such fields as consumption, individual well-being, health and citizenship" (p. 133). In this light, lifelong learning only contributes to dislocation.

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BUILDING AND SUSTAINING LEARNING COMMUNITIES: THE CASE OF BUILDING SOCIAL CAPITAL

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ABSTRACT

This paper will posit that it is through social interactive processes that learning outcomes accrue to a community. Case studies of learning communities will be explored to show how building capital through trust, cooperation, and collective participatory action for achieving common good, helps to explain economic growth.

INTRODUCTION

The concept of capital has expanded markedly since Adam Smith (1776/ 1976 pp. 110, 286-7) elaborated upon the fixed and circulating "capital stock of a society" and how "the expense of maintaining the fixed capital, must evidently be excluded from the neat revenue of a society". This basic approach was reiterated in the mid-20th century by the economist J. R. Hicks (1960) stating that, "in economics the capital of a community consists in the stock of goods of all sorts possessed by the community … at a particular moment in time" (p. 36). Since then, despite objections from leading economists, including Arrow and Solow, to an expanded usage of the term capital to include other kinds of capital (e.g., social capital), on the grounds that it does not have the characteristics of capital as traditionally understood (Edwards, 1999, p. 3), the concept now encompasses cultural, functional, human, intellectual, linguistic, organizational, personal, political, professional, social, and symbolic capital.

Contributing to lifelong learning, these new kinds of capital can be reduced to three distinct forms:

- *Human capital*, that is knowledge, skills and experience of employees or community members;
- *Social capital*, that is relationships an organization or community has with members and stakeholders – networks, values, trust, and commitment;
- *Organizational capital* – the systems, tools, and operating philosophy that speed the flow of knowledge through the organization or community; all of which can lead to regional economic growth and lifelong learning.

This paper is structured as follows. First is a brief discussion of the term social capital. The next section explores the theoretical framework, followed by a methodology section. A discussion of two Indian case studies on joint forest management, and the self-employed

women's association (SEWA), then precedes the conclusions.

DEFINITION OF SOCIAL CAPITAL

The focus in this paper is on lifelong learning through social capital with respect to sustainable social and economic development. The key factors in this context are families, communities, firms, civil society, the public sector, ethnicity, and social networks of women (World Bank, 1999, p. 1). Various definitions of social capital have been developed across the social sciences (Adler & Kwon 1999; Hediger, 2000; O'Hara, 1999; Woolcock, 1998). Adler and Kwon (1999) offer a neutral definition of social capital as "a resource for individual and collective actors located in the network of their more or less durable social relations" (p. 3). Broadly speaking, social capital can be defined as "encompassing the norms and networks facilitating collective action for mutual benefit" (Woolcock, 1998, p. 155). However, since our concern is with the social capital underpinning communities in developing countries, Hediger's (2000) notion of "critical social capital" referring to the socio-cultural system is most relevant:

> In general terms, social capital (socio-cultural capital, cultural capital) refers to a society's capability to deal with social, economic and environmental problems and be active in shaping the development of the overall system. It consists of socio-cultural values and norms, learned preferences, human capital and labour force, local knowledge of the environment, social competence and institutions, human health and life expectancy as well as cultural and social integrity and social cohesion (p. 484).

Against a background in which development and growth specialists are uncovering the importance of social cohesion for societies to prosper economically and for development to be sustainable, this paper examines the question of the nature of social interactive processes that occur in three lifelong learning communities in India.

THEORETICAL FRAMEWORK

There is considerable interest in the ways in which individuals, enterprises, industries, communities, and society as a whole can be encouraged to learn and to be responsive and adaptable in the face of a wide range of opportunities and threats. Recent research suggests that the concept of investment in human capital, and of people's knowledge and skills as capital, works best in conjunction with social capital, where social capital is the networks, norms or values, and trust or commitment that is present in a group, community, or society (Schuller & Field, 1998). Other research on organizations as knowledge systems suggests social capital is the primary mechanism by which knowledge exchange and combination occur (Quinn, Anderson & Finkelstein, 1996).

Social capital creates local economic prosperity (Dantwala, Sethi, & Visaria, 1998; Edwards, 1999; Putnam, 1993); "lending legitimacy to what those involved in community economic development have known intuitively for years: the level of inter-personal trust, civic engagement and organizational capability in a community counts" (Wilson, 1997, p. 745).

Better socio-economic outcomes result when people learn by using their knowledge and skills along with the knowledge and skills of others, through interactions that use networks, shared egalitarian values, and the commitment and collaboration of others to and with the group (Putnam, 1993). Temple and Johnson (1998) developed an index of social development that demonstrated considerable predictive power, and indicated the importance of "social capability" for economic growth with evidence that "fast growth is partly the outcome of favourable social arrangements" (p. 965).

Putnam's (1993) research reveals that social capital increases a community's productive potential in several ways: it promotes business networking; shared leads, equipment, and services; joint ventures; faster information flows; and more agile transactions. Social capital therefore not only produces an atmosphere conducive to economic activity, it provides the cultural will to solve community problems collaboratively in a learning environment.

In this context, two types of social capital may be distinguished: localised social capital (internal linkages), found among people who live in the same or adjacent communities; and bridging capital (external linkages), which

extends to individuals and communities that are more removed (Adler & Kwon, 1999). Developing communities need such internal linkages generating high solidarity as a substitute for their low levels of physical and human capital, and also high *external* linkages to combat isolation and maximise the potential for sustainable economic development through integration at the macro level (Adler & Kwon, 1999, p. 16).

Poor communities may have access to a learning infrastructure through close-knit ties, but they may not always be able to develop the bridging (external) type of social capital needed for their uplifting from poverty, as is shown in the two case studies which follow.

METHODOLOGY

Broadly speaking, the purpose of this research was to address the issue of the social interactive processes through which lifelong learning outcomes accrue to a community. The nature and scope of those interactions were analysed to show how they build social capital. This approach is therefore based on the grounded theory perspective (Strauss & Corbin, 1995). The methodological approach used to achieve this outcome was essentially a selective review of the case-study and related literature concerning initiatives for communal property resource management in India, as well as the now renown Self Employed Women's Association (SEWA) initiative, supplemented by the authors' personal knowledge of women's self-help savings and other schemes operating in the city of Pune, India.

CASE STUDY 1

India is a low income, poor, developing country, in which about 75 percent of the population is rural based, and dependent upon a biomass subsistence economy for their livelihood. This dependency includes a reliance on communal property resources (CPRs), such as village commons and forests, for about 12 percent of their total income. Most of the resources for this portion of the population are gathered and used by women and children, but their resources are shrinking and over-stressed, giving a reduced yield (Beck & Nesmith, 2001; Dasgupta & Maler, 1995). Unfortunately, there has been continuity of a top-down, "ecological imperialist", colonial and post-colonial forestry policy in India, entrenching "the right of the state to exclusive control over forest protection, production and management" (Hannam, 1999, p. 223).

Despite a 1952 target of 100 million hectares of tree cover, by the mid-1980s, total forest cover was reduced to about 65 million hectares (Kumar, Saxena, Alagh, & Mitra, 2000, pp. 7-9). This prompted a radical policy reversal in 1988 with the adoption of a new forest policy under which the forests were first to be treated as an ecological necessity; and second, as a source of products by tribals and other local communities; and third, as a source of products for industries and other local uses. Joint forest management (JFM) was to occur between the Forest Service and local communities, with NGOs acting as an interface (Kumar et al. 2000; Moosvi, 2001) – a form of bridging capital.

Some village communities have developed good forest management systems with little help (Chatterji, 1999), through localised social capital. In addition, through voluntary participation in general land-rehabilitation and poverty-elimination programs run by local and foreign non government organizations (NGOs), with limited input from government agencies, local and bridging social capital has been dramatically enhanced (Human & Pattanaik, 2000; IFAD, 2001). Effective CPR management requires cooperation in local communities such as those in the state of Orissa, and Karidongri (discussed next) – including reliance on their existing social capital, networks, and norms of reciprocity – to ensure lifelong learning and the long-term sustainability of these natural resources.

Joint forest management in the state of Orissa

Community initiatives for JFM have occurred in response to both depletion of forests and forest products that provide a vital part of some communities' livelihoods. These communities have learned through experience that such depletion is not sustainable. In the poor, backward, east Indian state of Orissa, villages had the necessary characteristics of social capital; such as unity, trust, cooperation, organization, and other favourable conditions needed to protect forests through community participation. This was because villages were already looking after the management of CPRs such as ponds, land, parks, and places of worship. Villages had developed both formal

organizations (youth clubs, voluntary organizations, grass roots level organizations) and informal ones (elders, village forest-protection committees) to protect forest patches in their area. Village Forest Protection Committees (VFPCs), along with their youth clubs, play a key role in the management of their CPRs. Funds are generated from the sale of forest resources to villagers, besides fines collected as a result of violation of rules by people from outside the village. Villagers employ a watchman or volunteer to patrol the forest patches, and rules are formulated by the communities to regulate their use (Mishra & Bajpai, 2001). It is through the shared experiences and the lifelong learning of the villagers that the current system of forest management has evolved.

Developing localised social capital in villages in Orissa has therefore taken the form of a strong, community-based forest management system. In this instance, localised social capital is significant as it enables rural communities to effectively manage CPRs through the social relationships, cooperation, and trust upon which rules and monitoring can be based, and which ensure the long-term sustainability of forest resources for the benefit of the community – thus facilitating the further enhancement of social capital.

Joint forest management in a Madhya Pradesh village

In 1995, Karidongri, a forest village in the state of Madhya Pradesh, had 57 families of which 15 were landless while others had non-irrigated land. All families were dependent on forest resources for their livelihood. Together with government officials, these 57 families formed a Forest Protection and Management Committee to manage the development of village and forest resources, build environmental awareness, and establish social-capital linkages and convergence between different government projects. After several meetings the committee agreed to build basic local water infrastructure, level land for agriculture, and construct a local store using funds from government and NGOs. Thus, over time the villagers were able to diversify their livelihoods away from sole reliance on CPRs to income-generating activities including irrigated agriculture, raising fish, making bricks, and a general store. To be successful, these cooperative activities required an active lifelong learning perspective which built upon the community's stores of human, social, and organizational capital.

In a further cooperative venture, villagers have established a grain bank to provide themselves with basic food security in case of adverse climatic conditions and market prices. Through extensive utilisation of their localised and bridging social capital – cooperation, trust, and a local network – Karidongri villagers have also protected their forest resources from fire, illegal felling, grazing, and encroachment, and have registered a number of forest offences cases. Besides protecting existing forests, villagers have undertaken an extensive afforestation program – planting 60 acres in a forest area – as well as replanting trees in nonforest areas to establish a fuelwood plantation for their future household and domestic needs (IFAD, 2001, Chapter 6). These activities have further established a culture of lifelong learning within the village.

Similar positive outcomes for CPRs are being achieved India-wide (Kumar et al. 2000; Mishra & Bajpai, 2001). A range of initiatives for participatory development at the village level, that are heavily reliant on existing social capital and lifelong learning, are progressively being implemented. Such initiatives collectively secure existing CPRs as well as livelihood diversification, besides generating further social capital through local area networks, trust, cooperation, and norms of reciprocity. It is estimated that in the state of Orissa alone, there are 10,000 community forest management village groups protecting about 2 million hectares of forest area (Human & Pattanaik, 2000, Chapter 2).

CASE STUDY 2: Self-Employed Women's Association (SEWA)

The SEWA of India is a leading example of micro-credit enterprises serving the needs of poor women. SEWA was formed as a union for the self-employed in 1972, reaching out to poor, illiterate, self-employed women from the informal sector who were economically active. Its main goals are, "(a) full employment and (b) self reliance for all its members" (Bhatt, 1998, p. 147). It develops women's economic potential through the formation of cooperatives, by making its members independent economically, and by empowering them to make independent business and personal decisions. There are over 65 cooperatives in rural and urban areas for self-

employed, uneducated women, including vegetable and fruit vendors, traders, semi-skilled workers, and home-based skilled workers. These women rely heavily on learning new skills and activities over a long period, while relying on the cooperatives for human capital, social capital and organizational capital.

SEWA's Credit Cooperative/Bank was formed in 1974 by 4000 members; each contributing 10 Rupees as share capital. It helps self-employed poor women by providing basic education, training, banking, financial services, and micro-credit facilities. SEWA women save and make deposits, and take loans for small business investments. SEWA's lending operations include providing credit to highly indebted women at a lower interest rate than the local moneylender. This credit can be used to start an income-generating micro-business, allowing them to repay these loans and build up working capital. The period of repayment is three years. Around 10 per cent of women have difficulty in repaying their loans.

SEWA has realised that it is particularly important to provide financial and advisory support to these women during difficult times, and have subsequently rescheduled their loan instalment repayments. This further strengthens the bank's position as a guide and a friend of poor women – resulting in a better overall loan repayment rate – rather than an organization that resorts to threats and legal proceedings. SEWA members are therefore able to improve their social and economic well-being besides giving them economic independence and opportunities to play a role in the formal economy through lifelong learning. SEWA now has over 220,000 members, 362 producer groups, and 72 cooperatives (Srinivas, 1998, p. 95).

SEWA women meet for mutual support and friendship, and share information about their families, children, health, cooking, and businesses, etc.; building social and organizational capital via support networks through mutual trust and cooperation. In this way, social capital is built up between SEWA and the network of self-employed, poor women. This occurs through, trust, respect and reciprocity, cooperation, networks, and backward and forward linkages in the economy. These operate as a self-insurance mechanism to alleviate poverty and contribute to women's long-term economic and social development by providing credit for income-generating, home-based activities, and creating assets for them. This is vital for the short-term survival of self-employed, poor women during critical times; empowering them and maintaining their bargaining power within the household, society, and market place as active participants in economic development through new learning. It enables the poor to become linked to additional resources and networks, thus creating bridging social capital (Putnam, 1995) through networks, trust, cooperation, and better engagement via backward and forward linkages in the economy.

Long-term solutions to the problem of access and inadequate resources and social exclusion require connecting the poor to mainstream resources and services (bridging social capital). SEWA is an example of an organization that has promoted lifelong learning and provided bridging social capital – both of which have improved living standards of poor women by providing links to additional financial capital and networks, empowering them through mobilising their resources, promoting equality and equity, and making their voices heard by those in power. Thus SEWA exemplifies a development initiative that has drawn on the social capital of poor women by mobilising them, by providing micro-finance, and by improving their well-being so they are less dependent on their husbands or male family members (Sen, 2000).

CONCLUSION

This paper has sought to address, describe, and explain the issue of the social interactive processes through which learning outcomes and developmental gains accrue to several learning communities. These interactive processes have been shown to build and utilise lifelong learning through localised and bridging social capital as they draw on the human and organizational capital resources available in the community. Gender-inclusive, participatory, or self-help development has important ramifications for development-theory policy because it is only by accessing increased resources that poor people will be able to lift themselves out of poverty. The paper has shown that lifelong learning accrues through social capital which comprises social relationships, cooperation, and trust, established at the village level for both community property resources management and livelihood diversification. This ensures the long-run sustainability of forest resources to the benefit of those communities, and, in the case of

SEWA, to build localised social and bridging capital, alleviate poverty, and empower women through its micro-finance facility to set up small businesses or micro-enterprises. SEWA has helped to build both types of social capital in helping poor women to organize for development and to perform developmental tasks like planning, evaluation, management and mobilisation of resources, establishment of trust and cooperation, and communication and coordinating activities. All these activities are for the mutual benefit of all poor women in related networks, and therefore they contribute to general economic growth and development.

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THE "EXTENDED INITIAL EDUCATION" DIMENSION OF POSTCOMPULSORY PATHWAYS IN A QUEENSLAND REGIONAL COMMUNITY

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ABSTRACT

This paper examines current vocational education delivery and school-to-industry links in a Queensland regional community as a framework for interrogating the Queensland Government's (2002) *Education and training reforms for the future* agenda. The paper also identifies the responsibilities of multiple stakeholders if this agenda is to fulfil its lifelong-learning promise.

INTRODUCTION

Gorard's (2002) "model of the 'two dimensions of time'" distinguishes usefully between "extended initial education" ("initial schooling and consecutive near-continuous episodes of post-compulsory education or training") and "later learning" ("episodes of education or training taken after a break from continuous education and training following school-leaving age"). Gorard contends that British lifelong learning is currently "robbing Peter to pay Paul", by devoting attention and resources to "extended initial education" and neglecting the educational opportunities of participants in "later learning".

This paper applies Gorard's model to the findings of a study conducted in the first half of 2003 in a Queensland regional community (Harreveld, Kenny, & Danaher, 2003). Specifically, we examine the "extended initial education" dimension of postcompulsory pathways towards lifelong learning, as manifested in the current delivery of vocational education and training (VET) and school-to-industry links in that community. We argue that VET delivery in schools and industry highlights both difficulties and opportunities that must be recognised and addressed if not only the economic value of learning is considered, but also the equally important social value of learning in its own right is to be realised.

We illustrate this argument by referring to the possibilities and problems associated with the implementation of the Queensland Government's (2002) *Education and training reforms for the future* (ETRF), currently being trialled in the regional community cited above. On the one hand, ETRF is posited on the creation and extension of postcompulsory pathways towards lifelong learning, whereby school leavers will be "earning" or "learning". On the other hand, structural "roadblocks" and dissonant attitudes and expectations might derail this ambitious "extended initial education" initiative. There are significant responsibilities and contributions required of and from multiple stakeholders if such an outcome is to be averted.

Our juxtaposition of the notions of lifelong learning and a compulsory senior secondary phase of learning under the umbrella of "extended initial education" (Gorard, 2002) is a tactical decision that enables us to investigate the relationships between these nations. On the one hand, we can argue that each embodies the material means and methods by which young people are constructed as part of a wider, market-oriented, entrepreneurial education corporation. On the other hand, we could claim that both notions work together to contest a socio-historical hegemony of university learning in the postcompulsory years. An emerging critique of the ETRF agenda implementation processes is its lack of a holistic view of the senior years of schooling. There is a perceived preoccupation with uncoordinated, piecemeal funding allocations for short-term projects that are targeted towards specific categories of young people who are framed as deficit in either motivation and/or ability to participate in the learning and earning pathways being made available to them. Through the lens of our recent research into VET initiatives in the senior secondary phase of learning (Harreveld, Kenny, & Danaher, 2003), this binary is useful for our purposes in the following section where we

briefly examine the forces impacting on teachers and administrators of secondary schools who are charged with the implementation of a government's political agenda.

LIFELONG LEARNING AND THE EDUCATION AND TRAINING REFORMS FOR THE FUTURE AGENDA

The notion of postcompulsory pathways for lifelong learning takes it's meaning from its binary opposite – compulsory pathways. Fundamental to changes enacted through the Queensland Government's (2002) ETRF agenda is a conceptual shift from the notion of "compulsory schooling" to a notion of "compulsory learning in a senior phase of schooling". Significantly, it is the learning under the auspices of a school, not the location of that learning in a school, that is compulsory.

This shift has been achieved through:

1. reviews of senior secondary schooling and of VET with accompanying reports, e.g., *The senior certificate: A new deal* (Pitman, 2002), *The review of pathways articulation through the post-compulsory years of school to further education, training and labour market participation* (Gardner, 2002);
2. the passing of legislation (*Youth participation in education and training bill*, 2003);
3. the ongoing articulation of national and state policy positions, e.g., *VET for school students in Queensland: A draft policy statement* (Queensland Department of Employment and Training, 2003);
4. pilot projects trialling two major aspects of the ETRF –
   a) the development of Senior Education and Training Plans (SETPs) with Year 10 students, and
   b) the development and implementation of District Youth Achievement Plans (DYAPs) (Reay, 2003).

The focus of these changes is (initially) young people between 15 and 17 years of age. The legislation defines a young person's "compulsory participation phase" as starting "when the person stops being of compulsory school age" (i.e., the chronological age of 15 years) and as ending when the person,

(i) gains a senior certificate or Certificate III, or
(ii) has participated in eligible options[1] for two years after the person stopped being of compulsory school age, or
(iii) turns 17.
(Queensland Government, 2002, p. 13)

This means not only that the period of initial education is extended for a minimum of two years, but also that young people *must* be either "earning" (option (ii) above) or "learning" (option (i) above) or a combination of both (options (i) and (ii) above). From this compulsory senior secondary phase of learning, young people would proceed to avail themselves of the postcompulsory pathways available via the articulation processes among the higher-education and VET sectors and their institutionalised systems.

These initiatives represent a political and policy "shop-front" that could lead the casual observer to think that nothing had been happening in the nation or the state of Queensland with respect to postcompulsory pathways until this century. The truth is quite the contrary; changes to educational pathways provision linked to lifelong learning opportunities have been implemented in Australia via the politics and policies of governments of the day since the fundamental changes to the economy and workforce organization of the 1980s and 1990s (Australian National Training Authority, 1998; Finn, 1991). Consequent pedagogical changes were initially wrought via enforced implementation of a particular curriculum orientation (competency-based education) and specifically sanctioned industry partnerships, plus multimodal delivery platforms for teaching and learning which celebrated the notion of "flexible" learning (Australian National Training Authority, 2000).

Predicated as it was upon a fundamental belief that VET's primary purpose is to contribute to the economic health of business enterprises, that is in turn allied to exponentially-increasing industrial and technological capacities, this VET system of the early 21st century has had a most visible impact on changes in the senior phases of learning in secondary schools. It could be argued that this has happened because the VET system was established and ready to step into a breach that, at that time, the university had no

[1] "eligible options" is a term used to encompass all the various forms of full-time work that a 15 to 17 year-old may find.

imperative to recognise, much less to engage with[2]. Historically, a non-compulsory senior phase of school learning occurred between the chronological ages of 15 to 17 and had one purpose and one purpose only – the preparation of a small, select number of students for entry into university or postcompulsory educational institutions such as teachers' colleges and/or institutes of technology.

In the meantime, multidimensional, complex and yet interconnected processes of globalization were at work in all systems of what has become an educational marketplace in which learning is brokered as a commodity (Harreveld, 2004). The VET system has given a brand name to an equivalency of qualifications for the senior phase of learning that previously did not exist. Statistical evidence from the Australian Council for Educational Research's longitudinal surveys of young people over the two decades of the 1980s and the 1990s has found that,

> The percentage of students remaining to the final year of schooling rose from 35 per cent in 1980 to just over 73 per cent in 2001. Those who obtain a Year 12 qualification or its vocational equivalent are more likely to continue their involvement in education and training, gain employment-related skills and generally fare better in the labour market compared to those who do not complete Year 12 or its equivalent. (Fullarton, Walker, Ainley, & Hillman, 2003, p. vii)

Hence young people were perceived to be staying at school longer either because they did not have anything better to do (as low paid, manual labouring jobs decreased) and they received government allowances to stay studying; or because they were responding to societal expectations (including those of parents) that a senior certificate was indispensable for both employment and postcompulsory educational pathways. Yet not all young people were found to be buying into this new deal. Findings from the same series of longitudinal surveys commissioned by the Australian Council for Educational Research (McMillan & Marks, 2003) suggest that young people with the following characteristics were less likely than other young people to complete the final year of secondary school (Year 12 in Queensland):

> …males, indigenous Australians, those from low socio-economic status family backgrounds, from non-English-speaking backgrounds, those from non-metropolitan areas, from government schools, and with lower levels of literacy and numeracy. (p. ix)

Accordingly, the ETRF agenda could be viewed as a government's response to the numbers of "disengaged" youth who, for whatever reasons, are neither earning nor learning, with consequent perceptions that they are not participating in the civic life of a democratically-ordered society. Alternatively, disparities and inequalities of power and wealth distribution within our society could be viewed as contributing to the exclusions and distortions that these statistics represent.

This somewhat sceptical ambivalence can be applied to the VET system's claim that it is an "extended initial education" pathway of choice for young people. The Australian National Centre for Vocational Education Research noted that "one in four people aged 15 to 19 undertook …VET…in 2002", with the statistics showing that "a growing number of young people choose VET as the first step towards their career" (National Centre for Vocational Education Research, 2003, Cover & Tables 1 and 2, p. 3). In the context of VET in schools (VETIS), this statistically-based claim has to be interpreted within an understanding that VET in schools refers to programs that are undertaken by school students as part of their senior secondary studies and that have the potential to lead to the award of a nationally-recognised VET qualification within the Australian Qualifications Framework (AQF) (Australian Qualifications Framework Advisory Board, 1998). Furthermore, the Australian National Training Authority (ANTA) (2003) found that,

> Over 95 percent of Australia's secondary schools offering senior secondary programs now offer…VET…to their senior students. This means students can gain practical work skills and nationally recognised VET qualifications as part of their school education. (n.p.)

[2] The current and emerging role of the university and its relationship/s with other educational institutions is a "sleeper" issue in this whole ETRF agenda and will be examined through our continued research endeavours in this area.

This section has synthesised the political and policy dimension of "extended initial education" at a systemic level in Queensland. We turn now to present our research-based findings of how such "extended initial education" has been implemented at a local and regional level in five secondary schools. In doing so, we consider the implications for the practice of lifelong learning in this phase of educational provision, including the multiple responsibilities and contributions of stakeholders.

LIFELONG LEARNING AND THE PRACTICES OF "EXTENDED INITIAL EDUCATION"

Our research into the current postcompulsory pathways, constituted by vocational education delivery and school-to-industry links, focused on five government secondary schools in a Queensland regional community in the first half of 2003 (Harreveld, Kenny, & Danaher, 2003). The significance of the research findings was maximised by the fact that the district where the schools are located is a trial district for the implementation of the ETRF initiative (Queensland Government, 2002). Data included statistical information provided by the schools and the researchers' semi-structured interviews (yielding nearly 100,000 words of transcript) with 20 individuals in ten sites (the five schools, the District Office of Education Queensland and the workplaces of the four employer representatives who were interviewed). A major research finding was the complexity and diversity of school- and workplace-based offerings available to students, reflecting a genuine commitment to enhancing postcompulsory pathways for those students. This complexity and diversity were illustrated by the interconnected web of spheres of influence and relationships that schools have to negotiate and broker if the postcompulsory pathways are to survive, let alone flourish, as reflected in Figure 1.

What is striking about these sets of spheres of influence and relationships is the multiplicity of expectations and priorities that they represent. Students themselves, their parents and guardians and their peers might be assumed to have largely consonant goals, although this is not always the case. Small, medium, and large businesses are concerned primarily with maximising profits, although many also identify the training of the next generation of employees as important. Government and other funding agencies must

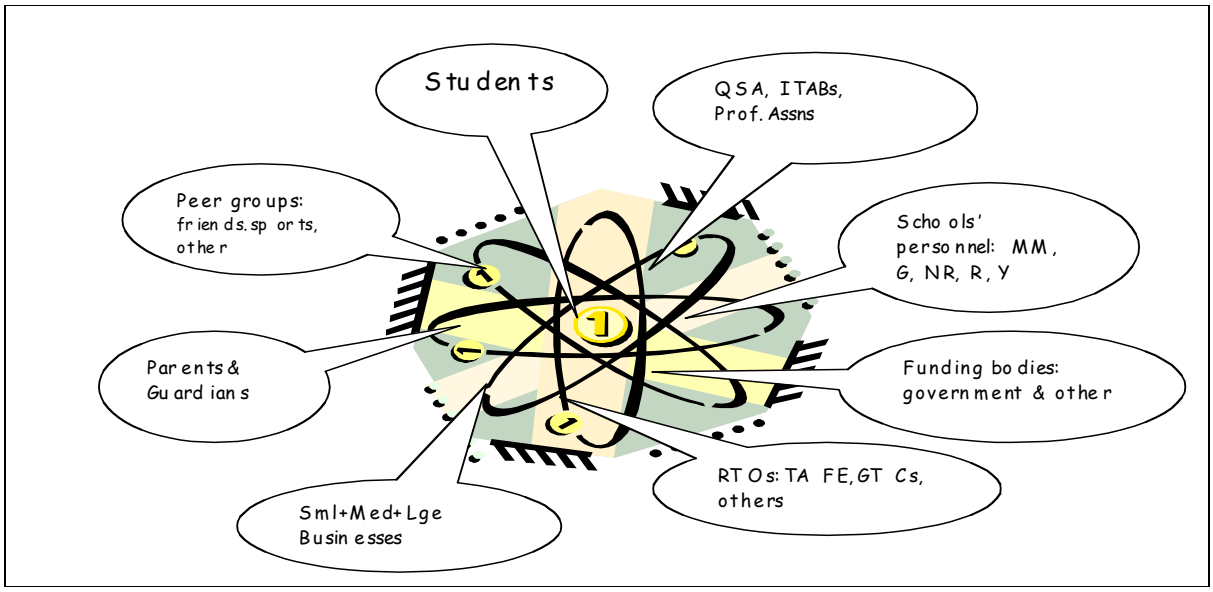

Figure 1. Spheres of influence and relationships in postcompulsory pathways. (Harreveld, Kenny, & Danaher, 2003, p. 37)[3]

[3] From "Bridges, roadblocks and degrees of 'fit': Final report in a situational analysis of senior secondary schooling – industry links and learning pathways among five 'VET cluster' state high schools in the Rockhampton District,' by R. E. Harreveld, M. D. Kenny, and P. A. Danaher, 2003. Copyright 2003 by Education Queensland Secondary School Principals, Rockhampton District, and Faculty of Education and Ceative Arts, Central Queensland University. Reprinted with permission.

allocate scarce financial resources as effectively and efficiently as possible. The Queensland Studies Authority (QSA), Industry Training Advisory Boards (ITABs) and professional associations sometimes have difficulty reconciling very different expectations of schools and students. The same applies to Technical and Further Education (TAFE) Colleges, Group Training Companies (GTCs) and other Registered Training Organizations (RTOs). In many respects school personnel have the most arduous responsibilities in this situation. They are responsible for ensuring that students fulfil employer requirements in workplace placements without being exploited; that an appropriate balance between the utilitarian dimension of vocational education and other, less tangible elements of education is struck; and that all of this takes place in a context of scarce resources, particularly time. In combination, this means that it is impossible to identify particular stakeholders as being more powerful than others, although it is likely that at least some stakeholders perceive others exercising more influence than they have.

Gorard (2002) argued that, in Great Britain at least, "it remains the case that initial education has shown significant changes for the better" (p. 124), on the basis of the 20th century's "considerable improvements in social inclusion and opportunities by gender, ethnicity, and class" (p. 124). Our research provides cautious endorsement of the application of this claim to Australia and, specifically, to Central Queensland. Nevertheless, as we contended in the conclusion to our research report, a crucial element of maximising the effectiveness of the "extended initial education" that we studied is the multiple and intersecting responsibilities of the diverse stakeholders who constitute this particular educational community.

> What pathways are available for young people in the Rockhampton District [in regional Queensland] known as senior secondary school students in this twenty-first century? They are the people currently attending any one of the five state high schools, or the two affiliated 'full service schools'. Some of them are working part-time while studying full-time; others are working and learning via formalised traineeships or apprenticeships. Some are doing a combination of OP–eligible [leading to university entrance] and VET embedded or stand–alone VET [leading to vocational qualifications]. The pathways for young people have been cleared via legislation and policy frameworks that have removed many roadblocks. Curriculum frameworks are there in principle, but still need concerted effort in practice if they are to be meaningful bridges for students to access. The potential for students still to 'fall through the cracks' in any bridge to their future, or to be unable to surmount the roadblocks they encounter along the way, is all too apparent. We have found a complex mosaic of senior secondary school pathways which is not readily or easily understood by those charged with its implementation (such as teachers and administrators), much less by those intended to use it as students, parents/guardians, employers and other members of the community. (Harreveld, Kenny, & Danaher, 2003, p. 40)

This analysis suggests that the responsibilities and contributions of stakeholders required for this particular case of lifelong learning to be successful are as multiple, dynamic, and subject to ongoing change and challenge as are the spheres of influence and relationships that underpin and support them. This is no easy situation, and our research revealed several sources and sites of stress as individuals and groups sometimes found it difficult to adjust to this complex scenario. Nevertheless, there is no effective alternative; as one school VET coordinator pointed out, there is a fundamental need for understanding and acceptance of this form of "extended initial education":

> So I think that's important – the perspective has to change. So that I think teachers have to see that this is a part of the kids' schooling, and when they leave school it's something that's going to give them an added advantage...

This quotation signifies the grounded and material implications of such a change to "the perspective" on postcompulsory pathways. Just as the policy parameters of this phase of learning have had to change, so too the practices of what has become "extended initial education" have had to alter dramatically and fundamentally. By extension, this could mean that the maturational impact of the postcompulsory phase of learning is broader and deeper than the purely economic facets of the programs involved and that that

impact is crucial to successful further participation in lifelong-learning opportunities in any sense of this term.

CONCLUSION

Is there a space for reclaiming pedagogical encounters in which people – adults and adolescents – are lauded and rewarded for learning with and from one another? Based upon the findings from our research to date, we would respond in the affirmative, with a cautionary note that the political engagements reported here are necessary to generate spaces that respond to and express the challenges experienced by all participants in this endeavour – young people who are positioned as students, their teachers, employers, families, and significant others in their lives.

Clearly the Queensland Government's (2002) *Education and training reforms for the future* agenda has much to recommend it, particularly in terms of maximising the diversity and utility of postcompulsory pathways by means of enhancing VET delivery and school-to-industry links. At the same time, there are three possible pitfalls that have been documented in this paper: (i) the positioning of the senior phase of learning as subservient to the knowledge economy of the business world; (ii) a political agenda that seeks to "other" or make visible via their differences, only certain categories of young people; (iii) the financial, intellectual, and emotional costs of establishing and maintaining interconnecting spheres of influence and relationships to make postcompulsory pathways happen for young people. Our research (Harreveld, Kenny & Danaher, 2003) has identified the complex and multiple responsibilities to be discharged by all stakeholders if the ETRF agenda's transformative potential is to be realised.

Underpinning our analysis has been the deployment of Gorard's (2002) conceptualisation of "extended initial education". While we lack the space to take up his charge that "extended initial education" has been supported at the cost of "later learning" (something that we hope to develop in a separate paper), we conclude this account by noting and endorsing his "vision of lifelong learning which is valuable for its own sake and which may have benefits but whose raison d'être is…not primarily economic in nature". The complex and multiple responsibilities of stakeholders if such a vision is to be realised are as challenging as they are crucial in rendering lifelong learning meaningful for all.

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DEVELOPING NURSING IDENTITIES THROUGH CURRICULUM CHANGE: SKILLING FOR THE FUTURE

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ABSTRACT

Over the last ten years, nursing has become an increasingly diverse profession. The role and scope of practice for nurses is changing and being challenged, where nurses are no longer "just nurses". This paper explores the multiple identities of nurses, and how generic skills need to be explicit in curricula. This is essential for the profession to respond in a dynamic and rapidly evolving health-care industry.

CRISES IN HEALTH AND, MORE SPECIFICALLY, NURSING

Like most professions, nursing has become increasingly diverse in a rapidly changing work environment. Currently, a gap exists between what nurses can do and what they are employed to do; between the education nurses obtain and the needs of the health environment in which nurses work. Nursing now deals with higher levels of illness acuity than ever before in both hospital and community settings. Historically, people would have died from certain illnesses but they are now being kept alive through advances in drugs, medical and surgical procedures, and technology. Despite these trends in morbidity and diverse differences in the education of nurses, 60 percent of nurses in the US today are employed in hospitals (Ward & Berkowitz, 2002). A similar trend is currently occurring in Australia (Australian Institute of Health and Welfare, 2002). This means that the future trends of more home-care based health and discipline segmentation are not directly addressed in curricula because of rigid structures and forces within the government, profession, and industry. The current diverse state of the nursing profession reflects powerful and synergistic forces that affect family and work life, politics, education, economics, and the system of health care. Yet these increasing levels of complexity and discipline segmentation require beginning nurses to be sound problems solvers, knowledge managers, critical thinkers, and skilled in generic nursing practices. Diversification is inevitable, and from this arises a crisis of identity in nursing and its practice. As a consequence, nursing reviews across the world have been commissioned to highlight the current state of the profession.

THE LITERATURE

Within the Australian nursing scene and across the world – more specifically, the United Kingdom and New Zealand – there has been a

thorough investigation of nursing and its practices; this being a result of the acute shortages of nursing staff. There are further concerns about structural changes and reforms being slow to occur. The literature clearly illustrates the problems of trying to unravel the issues within nursing and, the health-care system in general. It highlights the crisis in nursing in relation to innovation, skilling for the future, and a lack of professional identity (Nursing Council of New Zealand, 2000; United Kingdom University Faculties of Nursing, Midwifery and Health Visiting, 1998).

In Australia, a senate committee commissioned a nursing inquiry report (Commonwealth Department of Health, 2002) because of concerns about the number of recent nursing investigations resulting in limited outcomes. The inquiry report titled "The Patient Profession: Time for Action" was a smartly-coined double entendre to soothe the sentiments of the profession whilst linking care with its principle stakeholder, the patient. The strength of the inquiry document is that the views sought were widespread and reflected systemic and continued unrest within nursing in the areas of work practices, recognition, education, research, management, and occupational health and safety issues. It also recognized the profession's confusion, diversity, and transformation within a changing and complex health environment; and nurses' lack of power and voice in the planning and public-policy domains. Less obviously stated was the competing duality of responsibilities and policy directions between health and education. To the benefit of members of the inquiry, the senate recommended to parliament a national review of nursing education be undertaken. This review was commenced in April 2002 after eleven other exhaustive investigations into nursing from 1996 to 2001. It focused on the broad, systemic areas of concern (including labour market shortages, working conditions, discipline segmentation, and gaps in knowledge) that are difficult to resolve in the short and long term. Moreover, implicit throughout the inquiry report was the notion that professional identity was a known and generally agreed-upon concept; this notion was not even interrogated or questioned. This is one of the report's hidden flaws.

In Australia, the National Review of Nursing Education 2002 (DEST, 2002) released its comprehensive findings reflecting the sentiments of the senate inquiry. Underpinning the review there was an examination of the current arrangements in health, and changes in labour markets. Interestingly, in the "Purposes" section of the review it outlined similar issues to the senate inquiry but with one notable clause:

> Its role (the Review team) is not to define 'nursing' nor to enter into debates about the discipline or profession of nursing. It is for nurses themselves to resolve their concepts of professionalism and to develop their discipline (DEST, 2002, from the section headed 'Purpose of the Review….')

This statement claims that any discussion about nursing and any issues of a professional nature are not the domain of the review. Yet how can discussion of such issues be carried out in isolation and apart from the other facets of nursing as identified in the review – its culture, its role, relationships of nurses with others, and policy and funding frameworks? The absence of discussions about the profession is obviously part of the problem that prompted the numerous reviews and inquiries in this country. The other absence noted in the review is the perceived lack of any relationship between curriculum and professionalism (identity, socialisation, culture, values, and so on). Again, there appears to be an accepted assumption that could be part of an answer to the complex problems occurring. Others overseas are also experiencing similar issues (Nursing Council of New Zealand, 2000; Royal College of Nursing Great Britain, 2002).

From an international perspective, reviews from the Organization for Economic Cooperation and Development (OECD) (2003), the International Council of Nurses (2002), and the World Health Organization (WHO) (1999) also reveal that the only investigations into nursing (more generally, health) were in the areas mentioned by the senate inquiry and the national review, and that there was a lack of innovation within the health systems globally. These problems, it would seem, are not the sole responsibility of the nursing profession. Yet, neither the senate inquiry nor overseas references identified any recommendation for interdisciplinary, multidisciplinary, or transdisciplinary measures that would alleviate tension or find solutions to problems. They did not propose radical adjustments or even investigations into the critical concerns identified. Rather, they suggested only small changes to current problems or, more realistically, implicitly

advocated that we wait until issues become insurmountable and too difficult to resolve before making changes. Within these references current and future needs were inadequately examined because any future visions of the profession were not articulated clearly.

Interestingly, the United Kingdom (UK) underwent an inquiry into nursing and recommended similar actions. Little in this document highlighted professional identity. From the European perspective, the Council of Deans and Heads of UK University Faculties of Nursing, Midwifery and Health Visiting (1998) identified the usual system-wide issues but also made an insightful comment about curricula content and lack of innovation:

> It is regrettable that a large part of the curriculum supporting the initial preparation of Nurses and Midwives is 'content' driven and shaped, for example, by European Community requirements. Education providers complain that their capacity for innovation is stifled and new curricula shaped by clinical decision making and the acquisition of clinical skills are hard to establish because of these 'content drivers' (p. 4).

One can interpret from these words that curricula are open to external tensions that do not reflect where the profession might want to be.

In 2000, the Nursing Council of New Zealand commissioned a consulting company to undertake a strategic review of nursing education. The consultants identified three dominant forces that will impact on nursing in the future. These forces include information technology and interconnectedness, consumerism, and scientific developments. It was found in this study that the notion of professionalism and one's ability to be flexible and innovative would be imperative in the future. Unfortunately, the report did not expand on the notion of professionalism; it only alluded to the notion of strengthening the identity so that professionals will be able to meet future challenges. However, it informed the stakeholders quite specifically about curricula issues and proposed educational models that could be implemented. In comparison to the Australian and UK reports, this review was far more specific and action- and futures-oriented.

One must not forget the other sector involved in this process – the education system. The two competing demands on government resources, health, and education, led the Minister for Education, Science and Training to announce a review of higher education, with the release of an overview paper, *Higher education at the crossroads,* in April, 2002. In the preface to the paper, Nelson (2002) proposed that there should be consideration and debate to reform universities. Within this reform process it was reported there needs to a greater collaboration between stakeholders within and outside both systems in order meets the needs of a changing workforce. Therefore, the policies, decision-making, financial, and planning frameworks of both systems impact on how professionals are being prepared for the workplace. How much influence external stakeholders have on the opposing systems is fraught with issues that are neither new nor easy to resolve. This was identified more clearly in 2003 when the Commonwealth Government minister announced extra nursing positions for higher education to cope with the increasing crises within the healthcare system. However, "front-ending" by increasing numbers in health does not stop the issue of why so many nurses are leaving the profession or why the current nursing workforce is aging (Cowin, 2001). The average age of nurses in Australia is now 45years (Australian Institute of Health and Welfare, 2002); that is, the profession is attracting and keeping older individuals. Exploring the essence or identity of nursing is one way forward for the future.

WHAT IS A NURSING IDENTITY?

Nursing identity is a blurred concept, neither well articulated nor clear to all who are involved. Nurses are no longer "just nurses". They have a role that has diversified and become more complex as health care and practices continue to specialise. Therefore, what is required is a different set of meanings and interpretations about the distinctiveness of being a nurse. Nurses need new identities, ones that more accurately describe what they do and who they are; identities that can be articulated to potential nurses, politicians, policy makers, and the general public.

In recent decades nurses have searched for a distinctive identity and a new significance for nursing through a succession of symbols. The starched, pristine, maidenly uniform and cap

were abandoned for the lab coat or blue jeans or business suit. The modest bandage scissors tucked in the pocket were visually exchanged for the bold stethoscope dangling conveniently and conspicuously around the neck. The lamp was replaced by telemetry. The chart, for some, gave way to the clipboard, which in turn has yielded to the computer (Styles, 1987). In nursing education, the hospital receded as the university campus became the norm. However, none of these modern physical symbols belong solely to nursing as many other professions struggle to find meaning in the constantly-changing and diversified system of health (Styles, 1987). The words that reflect a lot of what nurses do, and nursing which can be seen through media stereotypes, is "high-tech/low-touch". This expresses not only the breadth and demands of practice but also an internal tension within the body of nursing. All these symbols are not mirages – they rightfully and accurately reflect changes in nursing and nurses. They also reflect the drive for a cognitive, intellectual, high-status image. Even though the cognitive skills are required in day-to-day practice, public images continue to reflect an arduous swim for the mainstream of respectability. So identity becomes an important feature when dealing with changes and skilling for the future.

Nursing has been described both as an art and a science. When one searches the literature, the embodiment of nursing is described in convoluted and nebulous ways. Nursing is tied to issues of history, tradition, ritual, power relationships, and gender to name a few. The concept "nurse" is complex in definition. Practice and parameters are interpreted in many different ways. Descriptions of this concept have changed and become differentiated over time because of social, market, economic, and political factors. Although nursing is a rich and diverse discipline that provides opportunities to work in a broad range of settings, the majority of novice nurses still choose the hospital as the site for their initial work experience. Possibly this is because the identity of nursing is still commonly associated with acute care, and that many novice nurses equate nursing with caring for individuals at the bedside rather than caring in communities.

As a term, nursing identity does not exist in the dictionary. What is a nurse? Nursing is a highly regulated and protected profession because public protection and safety are integral to its core identity, given the intimate and personal nature of much of the work.

According to the Royal College of Nursing, Australia (RCNA) and Australian Nursing Council (1999), there are two registrable categories of nurse, registered and enrolled. The premise by which nurses are permitted to these titles is that they are appropriately educated to provide nursing services to the Australian community. Both categories are entitled under state and territory legislation to be called "Nurse". The International Council of Nurses (ICN) is an organization that deals with worldwide nursing issues and the maintenance of core definitions of nursing and practice. The ICN (1998) goes further to say that the title of "Nurse" is regulated and protected by law to practice within certain legally-established boundaries. In addition, consumers of health need to know that those people caring for them are qualified to do so. Yet a description of nursing or its core identity defies definition.

According to the Concise Oxford Dictionary (1999) "identity" means "The sameness of a person or thing at all times or in all circumstances, the condition or fact that a person or thing is itself and not something else, individuality, personality…"(p. 620). Putting the nursing and identity together allows the external observer to see that it involves an individual representative of a collective (a nurse) who has knowledge and standards. In addition, it remains true to the distinctive nature of that collective even though it involves different facets of the individual and their being. The concept of nursing identity was further described by Ohlen and Segesten (1998). In their work they discussed two dimensions to nursing identity. The first was the personal dimension involving individual attributes, and the second was the interpersonal dimension. Mason (2002) discusses a third dimension: the political element of nursing. Nursing identity in essence is in fact multiple identities; similar to the concept of motherhood – there is no one definition of motherhood or mother but clearly there are broad attributes. There are many faces to nursing and to being a nurse. It is important to recognise that curricula need to address the issues of nursing identities in order to deal with changes for the future. It is not within the scope of this paper to discuss further the notion of nursing identities. The discussion here serves to highlight the complexity of the issue and how this may impact on curricula. The right balance of what nurses portray is elusive in nursing education and, as mentioned earlier, nursing reviews across the world reflect this.

CURRICULA CLARITY LEADING TO CHANGE AND SKILLING FOR THE FUTURE

Currently, given the changes that are occurring, there is no rigorous research that informs nursing curricula both nationally and internationally. There lacks a systematic approach for providing the best evidence for curricula development – especially when the profession seeks to find its place in rapidly-changing health markets. The reviews highlighted previously made mention of adding content areas from certain targeted areas like mental health and aged care but they fail to see that the curriculum is already full. Hence the role and identity of the registered nurse has been subjugated by tensions of meeting labour market demands through skill development at the same time as trying to re-define professional boundaries. Thus, the curriculum is fuelled by the economic imperative of a "means-to-an-end" focus whilst it is assumed that the professional aspects of the curriculum will fix themselves. The preparation of other practice-based professionals like teachers, engineers, and social workers is also being influenced by similar levels of professional dissonance with the current system of education.

Generic skills have become a national and international topic of discussion. It seems from the literature that generic attributes and skills are sought after by employing bodies as being the ultimate set of characteristics they require of new graduates seeking to enter the workforce. It is also seen as a measure of success if one has sound skills in information and computer technology; communication – interpersonal and intrapersonal; problem solving and critical thinking; team work; and management skills in time, leadership, adaptability, and flexibility (Young, 1998; Ward& Berkowitz, 2002). One questions raised is, how are these skills or attributes to be judged in terms of importance alongside the development of the conception of nursing in a curriculum where value is placed on "high-tech/low-touch" (Styles, 1987)? In addition, the general discussion in the nursing profession suggest that the curriculum should equip students with skills that give them entry to a wide variety of health-care environments. In reality, it is not possible to learn all skills when there are such diverse employment environments. However, it is possible to learn how to learn.

More broadly speaking, the American Association of Colleges of Nursing suggest that nursing curricula should focus on core scientific principles that underpin all skills and that this should be done in order to prepare the graduate for lifelong self mastery, or technology learning. Others say that the curriculum must prepare the learner with knowledge and technical skills mitigated with flexibility, creativity, and active involvement in the learning process (AACN, 2003). What is described above is the notion of lifelong learning.

The National Review of Nursing Education (DEST, 2002) in Australia revealed that nursing over the past decade has developed specialised areas that were previously non-existent. This has created tension within the curriculum because it was initially designed to prepare generalist nurses for entry into the profession. The tension resides in what specialities are given clinical practice time and content within a generalist curriculum. This is done to give students a "taste" of other areas that nurses work in rather than value-adding to the development of the core role. This may add to role confusion rather than role development (Ohlen & Segesten 1998). Moreover, the current government philosophy underpinning the National Review focuses on the "knowledge nation" as a way of improving economic growth. From this perspective, there is an assumption that a knowledge nation is a learning society. In such a society learning needs to be linked not just to an individual being selected for employment as in the past, but to an individual's capacity to innovate and therefore to have a role in changing work processes (Castgells, 1989 as cited in Young, 1998). This requires a broader skill base than current nursing curricula supply. Therefore, this will require individuals who have a strong sense of their profession (identity) and of themselves (autonomy, critical thinking, and accountability) in order to determine which competing interests best suit future directions. It also implies that industry is reflexive enough to deal with engaging participative individuals who are willing to make changes rather than the traditional industrial-management model of "do as I say".

Skilling for the future whilst developing and strengthening the identities of nurses is a way forward for the future, that is, through a strong focus on transferable and generic skills at the same time as a providing a strong professional-development process.

CONCLUSION

As health care changes, the nursing professional is evolving with the emergence of new settings for practice, new roles for nurses, and new partnerships with other disciplines. These changes are the result of pressures to reduce costs and improve quality and outcomes through redesigned health-care delivery models. The work of nursing is also shifting. As traditional barriers to care are eliminated, nurses are expected to move across systems with an increasing focus on continuity, on outcomes, on populations, and on the continuum of care.

The solution may be one of first recognizing what are the essential skills generally required by industry that ensure that the new graduate can practice as a safe practitioner regardless of the health-care setting. It seems that one is really searching not for high-tech/low-touch but for a variety of skills that transfer to different settings – the more general skills mentioned before – yet where the individual has the capacity to learn for life.

Within nursing, one needs to be keep one's eye on the changing landscape and have a curriculum that is highly responsive and flexible. Students need to have a very clear understanding, very early in their student lives, of what industry requires of them upon graduating. They need to understand the nature of the profession and its diversity in order to seek to find ways of learning to learn for life. As well, those who employ graduates also need to be proactive and work more collaboratively with accrediting bodies and higher education so that the theory-practice gap is narrowed. Maybe then the profession, the curriculum, and the student might have a clearer view of the future and where the profession seeks to position itself.

Nursing is a paradox. Nursing is experienced at some time by everybody. It is practiced by millions of nurses across the world, yet it still difficult to describe and is poorly understood as commonly defined – it is almost a "felt" response. In 1859 Florence Nightingale (as cited in Quixley, 1974), "The elements of nursing are all but unknown" (p. 23).

In the 21st century this statement is still true. Some people associate nursing with the physical tasks concerned with keeping a sick person safe, comfortable, nourished, and clean. Some see nursing as assisting the doctor carrying out tasks associated with medical treatment. While both of these elements are indeed part of nursing practice, the idea that nursing consists solely of these elements ignores the wider contribution of professional nursing to health care, and will result in a service which does not offer its full potential. In the "Reid Report on Nursing Education" (Reid, 1994) there is the following statement.

> Australia needs a nurse who will leave university with a comprehensive grounding in the theory and practice of nursing including the basic strands of medical-surgical nursing, community-based nursing and mental health nursing- a nurse goes on learning throughout his/her professional career. (p. xv)

Curricula change can provide a way forward so that nursing is responsive and contemporary. It offers a way forward in an educational sense that reflects the dynamic and rapidly evolving health-care industry. Skilling for the future is about training people to be knowledge workers who have a strong sense of their profession and themselves. Nurses must challenge and learn from their past in order to move forward into the future. How do we go about achieving this; generally speaking it is through curriculum change that is strong, with a generic-skill and professional-development focus. This is the challenge.

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KNOWLEDGE WITHOUT BOUNDARIES: A REFLECTION ON COLLABORATION

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ABSTRACT

The purpose of this research was to examine the efficacy of a collaborative approach to course planning. The two researchers used the five basic elements of group effectiveness identified by Johnson and Johnson (1997) as the framework. The findings indicate that this approach has the potential to identify key issues and to facilitate effective collaboration.

INTRODUCTION

Central Queensland University has five campuses located in the Central Queensland region of Australia. There is significant physical distance between the campus sites. The Bachelor of Learning Management (BLM), the pre-service teaching degree, is delivered on all campuses. Course teams work together across campus sites to plan, implement, and deliver course materials. Within some courses collaboration between faculty and divisional staff is desirable to facilitate the use of particular design models.

This approach presents a number of challenges to those involved. While modern technology can ease the tyranny of distance, collegial collaborative relationships benefit from promotive, face-to-face contact (Johnson & Johnson, 1997, p. 28). This paper focuses on the collaboration that occurred between a librarian and an academic when they assumed responsibility for a course review. This paper has the dual aim of articulating action to bring about change, and research to increase understanding. It is part of a larger project aiming at improved student outcomes in the first year of higher education.

Improved outcomes for the first-year experience of tertiary students are the justification for conducting this action research into the collaborative process. Research has revealed much about the experiences and performances of students in their first year at university. The transition from high school to university can place significant demands on young adults (Tinto, 1982). Despite recent innovations, Tinto (2000, p. 48) still sees universities as places that isolate learners and as environments in which learning is disconnected from other contexts. Internationally, Tinto (1995), Pascarello and Terenzini (1979) and others talk about the need for learner collaboration in order to build aptitudes and capabilities that contribute to a sense of academic confidence or efficacy that helps to determine goal commitment and motivation.

The capabilities of a 21st century learner, according to Bruce (2001, p. 106), include oral communication skills, interpersonal skills, information-literacy skills, and the ability to work as part of a team. With this research as justification for our collaboration, an initial attempt was made to incorporate an embedded, information-literacy program into the BLM, commencing with one, first-year course. The course, *Networks and Partnerships*, used an assessable workbook approach supported by voluntary library tutorials. Collaboration, in this initial year of 2002, was between the course coordinator based in Mackay, and the librarian based in Rockhampton. Feedback from students and members of the teaching team in 2002 resulted in significant revision of a number of aspects of the course. This review continues each year and within the 2003 cycle two members of the teaching team reflected on their collaboration from a personal perspective.

THEORETICAL FRAMEWORK

The modern university is under enormous pressure to meet the needs of the diverse members of its community. Universities are required to demonstrate quality control, and they face regular audits. The last decade of technological advances means constantly changing work practices. Employers in the 21st century expect graduates to demonstrate more than discipline knowledge; they require the self-motivated creativity of lifelong learners (Jones, 2001, pp. 300-301). Graduates are expected to be so much more than users of knowledge that they gained during their degree studies. Academics are expected to provide students with an educational experience that is learner-centred and interdisciplinary (Dunkin, 2000; cited in Jones, 2001, p. 301). For the academic, however, keeping up with technological change and teaching in a variety of areas of specialisation can result in substantial increases in workload. Increasingly, academics face the need for collaboration to provide a successful learning outcome for their students. Information literacy as a central element of lifelong learning has meant that librarians are becoming involved in collaborative partnerships with academics (Bruce, 2001, p. 106).

For many universities, a core graduate outcome is the ability to be a lifelong learner. Central Queensland University policy documents reflect the significance afforded to lifelong learning at this university. According to the university's *Strategic Plan 2002-2004* the CQU learning community will be characterised by,

- a commitment to the principles of lifelong learning and information literacy;
- the acquisition of knowledge, skills, processes and values to enable positive participation in an ever-changing world; and
- the development of learning values and strategies appropriate to a wide range of learning environments. (Central Queensland University, 2003)

Doskatsch (2003, p. 111) indicates that external forces often drive cross-disciplinary collaboration. The commitment by the university management can be seen as a top-down approach to acceptance of information literacy within the university. In the collaboration discussed in this paper it was not a top-down push for more collegial conduct to ensure

effective teaching and learning but, instead, individuals who recognised in others similar philosophies and approaches to their work.

Snavely and Cooper (1997, p. 9) describe information literacy as a key element of lifelong learning. They argue the definition of information literacy has broadened from simply acquiring the skills and understandings for success in academic settings to ongoing development of those skills and understandings throughout a person's lifetime.

Bruce (2002) concurs when she describes information literacy as "conceivably the foundation for learning in our contemporary environment of continuous technological change" (p. 1). For us, this acknowledgement of the need to prepare teachers for a dynamic and complex world provided the impetus to include information literacy as an integral part of, rather than an adjunct to, course material. As future educators, our BLM students need to comprehend the importance of information literacy and to communicate this understanding to learners.

A number of reports (Davis, 2002; Ivey, 2003) show that, unless information literacy is developed within a disciplinary context, students have limited retention of information-seeking skills and often view them as irrelevant to their program of study. Students' learning abilities are enhanced if they are able to make links between learning at home, at university, and even between courses, during their degree studies.

An approach such as this recognises students' prior knowledge and strengths, making them active participants in the learning process. Tinto's (2000, p. 51) learning-community theory supports this notion of making and constructing meaning from prior knowledge while embracing others in the process. This equates with a problem-based learning approach because it allows students to work together to achieve solutions. Solving problems together requires collaboration, and information literacy to be truly effective in helping to achieve this. Both staff and students within the university setting can benefit from this approach.

While collaboration between academics and librarians is not a new phenomenon, "an embedded discipline-based learning experience requires divisional staff working closely with academic staff to review and develop learning experiences" (Hart, McCarthy & Peacock, 2003, p. 434). According to Bruce (2001), there is a "new emphases on information literacy and the role of the library in teaching and learning have strengthened those partnerships, and even transformed their character" (p. 107).

Lines (1997 as cited in Jones, 2001, p. 302) identifies two forms of collaboration. The first is as a relationship in which communication is a "broad ranging conversation" but there is no pre-determined outcome. The second form of collaboration involves an alliance between disciplines where the professional knowledge of each member enhances the expertise of the team. In this form of collaboration the problem of inadequate expertise is overcome and recruitment is directed towards team members with the desired skills to enhance the outcome.

The *Networks and Partnerships* course team can identify with both forms of collaboration as described by Lines (1997 as cited in Jones, 2001, p. 302). While descriptions of collaborative processes are important, Johnson and Johnson (1997) identify principles for effective collaboration. They indicate five basic elements for group effectiveness. These are,

- positive interdependence,
- individual accountability/personal responsibility,
- promotive (face-to-face) interaction,
- social skills,
- group processing. (pp. 24-31)

Positive interdependence exists when there is a perception that success is reliant on the efforts of all group members. According to Johnson and Johnson (1997, p. 25), there are two main categories of interdependence: outcome interdependence and means interdependence. In outcome interdependence, group members desire a similar outcome; while in means interdependence, group members share the resources, roles and/or tasks.

"Individual accountability/personal responsibility" as an element of group effectiveness means that each group member has a feeling of responsibility about contributing to the goals of the group. Providing feedback to both the group and the individual about individual performance makes individuals accountable for their participation within the group. It also allows group members to provide support and assistance if one member is

struggling to complete tasks (Johnson & Johnson, 1997, p. 27). This support and assistance are part of the third element of effective group processing: promotive (face-to-face) interaction. In this element group members provide encouragement to individuals so that tasks are completed in order to achieve the group's goals. More than this, promotive interaction provides opportunities to share cognitive understandings and resources, and to receive verbal and non-verbal feedback (Johnson & Johnson, 1997, p. 28).

In the social skills element, Johnson and Johnson (1997, p. 28) identify interpersonal and small group skills as important for successful group functioning. A number of studies have shown that groups with effective social skills have a higher achievement and productivity, and build more positive relationships among group members.

The final element of group effectiveness, according to Johnson and Johnson (1997, p. 29), is group processing. This involves the periodic reflection on how the group is functioning and how to improve work processes. The authors acknowledge that this last element is the most important. Without systematic reflection and documentation of processing, groups can break down. Within university settings colleagues working collaboratively would benefit from applying this framework to joint activities. Other important considerations for collaboration can complement the Johnson and Johnson framework when staff form work teams.

Booth and Fabian (2002) suggest that, when librarians look for collaborative partners from within a faculty, the following criteria will assist in the identification of suitable faculty members with whom to engage.

- Colleagues who share pedagogical goals.
- Colleagues who are interested in developing the information competencies of their students at the same time they present course content.
- Colleagues who are willing to adjust teaching goals to incorporate skill-building, transferable IL competencies.
- Colleagues who practice a learner-centered model.
- Colleagues whose courses demonstrate authentic content and purpose.
- Colleagues who regularly review and revise their teaching methods to improve student-learning outcomes. (p. 129)

While the collaboration team members discussed in this paper were aware of the criteria developed by Booth and Fabian (2002), it wasn't until they engaged in a reflection-and-evaluation process that it became apparent how well this collaborative group matched the criteria.

METHODOLOGY

Background understanding

As mentioned previously, this small study is part of a larger, ongoing project dedicated to course development and improved student outcomes. The first attempt to embed information literacy into the course *Networks and Partnerships* was undertaken in 2002. While students did gain research skills, feedback indicated that their experience lacked a sense of relevance to the rest of the course. According to literature in the field, this is not an uncommon occurrence (Davis, 2002; Ivey, 2003).

Initial conversations regarding the review occurred in Rockhampton at an information-literacy seminar attended by a number of members of the teaching team. This seminar was pivotal to the development of a shared understanding of embedded information literacy. Two members of the *Networks and Partnerships* team, one academic and the librarian, decided to undertake, jointly, the review of the information-literacy component of the course. One later face-to-face meeting occurred between these two members; however, the majority of communication was by email and telephone as team members were separated by 100 kilometres.

Action research

Methodical reflection and review, according to Dick (1998, pp. 10-15 of 85), are part of the cyclic nature of action research. Dick goes on to state that the use of cycles within cycles allows action research to be both flexible and rigorous. According to Dick (1998), reflection as part of action research "allows the integration of the conscious and deliberate thinking and knowing of reflection with the less conscious and deliberate knowing and thinking of action" (p. 11 of 85). If we can describe action research as

an emergent methodology then the fine-tuning of the methodological form, which takes place on the job, takes into account the increased understanding of the researchers.

These defining characteristics of action research enabled two members of the *Networks and Partnerships* team, the academic and the librarian, to investigate one of the cycles within the bigger project cycle. The academic and librarian used critical reflection in this cycle to make explicit the theory underpinning their collaboration. Clearly, the act of reflection needed to be documented as a purposeful method of collecting data on the collaboration process.

A series of questions was developed from the Johnson and Johnson (1997) framework on group effectiveness, and both the academic and the librarian responded to these questions independently. The academic and the librarian, who were the researchers and also the participants in the study, used this reflective opportunity to interrogate their personal perspectives of the collaborative process. The responses were used to inform a joint reflection between the two researchers. These data were then evaluated together against the backdrop of Booth and Fabian's (2002, p. 129) collaborative criteria.

RESULTS AND DISCUSSION

Reflections regarding the collaborative process are discussed in relation to the framework identified by Johnson and Johnson (1997, pp. 24-31). Prior to the rigorous interrogation of the collaboration process, the academic and the librarian congratulated each other on their achievements. The systematic process of answering questions around group processing, however, forced a deeper contemplation of the issues.

The academic and the librarian wholeheartedly embraced the collaboration. The selection of the academic for collaboration resulted from her interest in information literacy, a genuine friendship with the librarian, and a desire for a positive outcome. The feedback provided by students and academics was the impetus for the review. Reflecting back to that time, it is easy to see that Booth and Fabian's (2002) criteria for librarian/academic collaborations were already in place. For example, the researchers were colleagues who were interested in developing the information-literacy competencies of students within the context of a course of study. In hindsight it is apparent that the academic and the librarian self selected for their role in the review. This was not deliberate as the 2002 course coordinator was involved in early discussions; however, changes in team members meant she was no longer going to teach the course.

Both collaborators acknowledged that the review needed to include changing the tasks students undertook. Each member reported a sense of personal responsibility and positive interdependence as described by Johnson and Johnson (1997, pp. 25-26) in achieving this goal. This is highlighted by comments from the academic indicating,

> I felt a sense of individual accountability when I would assess my performance and relate what I had achieved back to Jacky and vice-versa. If Jacky needed me to facilitate a task for her I would do this and Jacky did the same for me to help and support me with tasks (academic).

More specifically, it was the academic's role to re-evaluate course content from *Networks and Partnerships* and construct a detailed, week-by-week activity schedule for the key concepts to be taught. This needed to be completed in a timely manner. The librarian could not proceed without this information. Because the academic provided this detailed key-concept list, the librarian was able to link information-literacy skill development to specific, relevant, course content. Phone and email contact on a daily basis over a period of two weeks enabled the two specific tasks to merge as a finished product. The goal was achieved because each had a clear task to perform and each acknowledged the sequence of the tasks.

Contact throughout this process was very important. Reflections by both members indicated they shared promotive interaction as defined by Johnson and Johnson (1997, p. 28), with regular communication to support each other's success and well-being. This intense period of work was not easy, given other teaching and administrative commitments. Both participants felt the need for regular contact. This contact achieved several goals which included, affirming the actions and intensions of the other person, clarifying understanding, and discussing alternatives. At times this

communication was brief, only one to two minutes on the phone or a very short email, and at other times quite lengthy. Several extended phone conversations lasting up to one hour were needed to complete "large chunks of work". These extended phone conversations were planned; however, the daily contact mentioned occurred spontaneously, but with purpose.

While most of the communication occurred by email and telephone the librarian indicated the initial face-to-face contact was an important factor in ensuring a successful outcome. "It was the initial face-to-face meeting that made the tyranny of distance less of an obstacle" (librarian). The information literacy seminar mentioned previously, which both participants attended, was the catalyst for this initial face-to-face meeting. Conversations at this meeting facilitated a more detailed debrief from the 2002 *Networks and Partnerships* course and illuminated a connection between the academic and the librarian not previously articulated. The academic stated,

> At this time I knew Jacky and I were on the same wavelength. We both wanted the same things from the process of embedding IL into a first year tertiary course which included a real-life context, authentic application of knowledge and skills and lifelong learning attributes (academic).

A meeting where the librarian travelled over a hundred kilometres to the academic was planned for the week following the information-literacy seminar. At this meeting, a full day of planning and a break for a social lunch ensured a successful start to the review.

Both participants considered they had good interpersonal skills which made the collaborative process flow smoothly. While differing points of view were acknowledged, both participants indicated that the constant communication meant issues were identified and resolved early. The participants acknowledged there were elements of Johnson and Johnson's (1997) group processing model that they failed to consider. A significant aspect of group processing which relates to the review of *Networks and Partnerships* is the process of providing feedback to the larger course team. Both members reflected on this aspect of the collaboration and this is clear in the comments of the academic who stated,

> Looking back on the time and space Jacky and I occupied as collaborators, we acknowledged action and performance and provided each other with feedback – however I feel we did not at any time consciously look at what was taking place with our small collaboration and where it would fit in the bigger scheme of the course (academic).

She went on to elaborate, "I believe at this point in time I was disconnected from what the wider group members perceived IL to be; and what skills from the domain of IL were important to link with content from *Networks and Partnerships*".

In any reflection about processes of group work, it is important to identify not only what worked but also what did not work so that these negative aspects can be overcome in the future. The most noticeable failing during the collaborative process was the interaction with the wider-team members. Failing to include the wider team in the ongoing process meant that they did not have the opportunity to develop the same understanding of information literacy and were unprepared for the finished product. As the librarian stated, "We failed to consider how our thought processes had changed during our collaboration and made the assumption that the other team members shared our viewpoint". She elaborated by saying: "Of greater importance was the failure to value the input of the wider group members, and what they could have brought to the process and to understand their need to adapt the results to suit the requirements of their delivery sites." The effect of this breakdown in group processing meant that, while the revised course was delivered on all sites, the personal feelings of individual academics emphasised to their students the value of successful completion of the information-literacy component.

The participants now acknowledge that their collaboration failed to respond to the issues that presented as problems to the wider group. Issues and tensions were evident among the teaching staff at the various campus sites. What is positive, however, is the response from students to this new workbook material. The campuses that participated in a student evaluation of the information-literacy component reported strong support for the new format. The academic involved in this study observed greater and more competent application of information-literacy

skills among students at her campus. Ultimately, student outcomes are paramount, and the embedded information literacy was successful in this regard; however, improved group processes would have led to a win-win situation for everyone.

CONCLUSION

The efficacy of collaboration is undeniable in what can be achieved. What constitutes effectiveness in relation to collaboration is the important issue for members of a team. By sharing a framework to mediate the collaborative process, group members are privy to a heightened sense of individual and collective responsibility.

While this analysis proved too late to inform action for the 2003 academic year, it did provide the responsiveness to refine the process of collaboration for future reviews.
The two participants are now aware of the need to use a framework for reviewing group processes from the outset of any collaborative action. Research of this nature benefits the stakeholders in the team and as a consequence improves the learning experience of the ultimate stakeholder, the student undertaking the *Networks and Partnership* course.

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RESEARCHING THE EXPERIENCES OF INTERNATIONAL STUDENTS

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ABSTRACT

Research involving international students offers challenges and lifelong learning opportunities. This paper draws on cross-cultural research literature, the author's research experience, and observations of students completing Rodski library surveys. It highlights the need for cross-cultural and second-language awareness, strategies for overcoming difficulties, and benefits of research in this field.

INTRODUCTION

Research into the experience of international students presents a variety of challenges and lifelong-learning opportunities. The linguistic and cultural variables that characterise international students introduce layers of complexity to the investigative process, but these difficulties are balanced by a range of associated benefits. In addition to providing data and insight on this significant population, research projects offer the potential for researchers and participants to develop cross-cultural and communication skills that enhance teaching and learning in a globalized higher-education environment.

The body of empirical data on international students is steadily growing, but there is little guidance available for researchers on the practicalities of designing and conducting projects in this specialist area. This paper, which focuses on international students at university level, draws insight from the wider fields of education and cross-cultural research, as well my own experience as researcher and librarian/information literacy educator, to identify the key challenges and to discuss strategies for addressing them.

RESEARCHING INTERNATIONAL STUDENTS – BACKGROUND

Demographic and economic data on international students in higher education in Australia are readily available from government and independent sources (Department of Education, Science and Training (DEST), 2001; IDP, 2002; IDP, 2003), but qualitative research into their needs, experiences, and expectations is relatively scarce. What's more, the research that has been carried out has tended to focus on students from the Asian region, despite the ever-increasing diversity of the students' backgrounds.

While the literature offers little advice on undertaking research specifically with international students, valuable pointers – especially with regard to data collection design and implementation – can be gained from the broader field of cross-cultural research (Brislin, 1981; Ember & Ember, 2001; Lonner & Berry, 1986). There is a common interest in facilitating effective interpersonal communication between researchers and participants of different backgrounds, although some aspects (such as the logistics of field studies in remote locations and the use of interpreters) are of limited relevance. Also, in contrast to many cross-cultural studies, the research context with international students is generally more "foreign" to the participants than the investigators.

This paper aims to supplement the information currently available to researchers with observations based on the experience I have gained from the following activities.

- Current work on a Master of Information Technology (Research) project: "International students and their use of online resources: A cross-cultural perspective on information retrieval" (Hughes, 2004). This project involves approximately ten Central Queensland University (CQU) international students in semi-structured interviews and observed set tasks, with the aims of gaining an in-depth understanding of their experiences in using online resources, and identifying any difficulties encountered in these activities that may be associated with linguistic or cultural differences.

- Involvement with the administration of two Rodski library client satisfaction surveys at Central Queensland University Brisbane

International Campus. This survey, managed by Rodski Research, is a major benchmarking tool used by most Australian university libraries. At Central Queensland University the survey was carried out in 2001 and 2003, in both electronic and paper formats at all ten CQU campuses. I gained valuable insight into international students' experiences with this kind of structured data collection method through survey-related enquiries I received at the library desk and via a review of completed questionnaires.

- Daily interaction with international students in my role as campus librarian and information-literacy educator at CQU, Brisbane International Campus, which offers the opportunity to informally extend my knowledge and understanding of international students on a daily basis.
- Extensive experience as a second-language learner, exchange student, and translator.

RESEARCHING INTERNATIONAL STUDENTS – THE CHALLENGES

The central challenge of research involving international students relates to the diversity of their backgrounds. In 2003, Australian universities enrolled almost 175,000 international students from countries with widely varying religious, socio-economic, and political structures (DEST, 2001; IDP, 2003). For example, Central Queensland University welcomes students from over 120 different nations as far flung as China, Malaysia, Uganda, Bangladesh, England, Oman, Turkmenistan, and Tuvalu (CQU, 2004). As such, these students represent a multi-faceted sample population, about which little generalisation is feasible beyond the Commonwealth Government's broad legal definition of "international student" (DEST, 2003). Even use of English as a second language is not a common element, since a significant number of international students are native or bilingual English speakers (author's personal observations).

Thus the international student population is characterised by a lack of homogeneity in cultural, linguistic, personal, and educational terms – "an enormous and unprecedented kaleidoscope of difference" (Pincas, 2001). To the researcher these represent a complex web of variables – relationships and interactions – that need to be addressed at all stages of project design and implementation, especially with regard to clarification of purpose, choice of methodology, recruitment of participants, preparation of data collection instruments and activities, and data analysis.

Cultural considerations

For ethical and practical reasons researchers need to recognise and respond sensitively to the infinitely varying personal and cultural attributes of international students; especially in relation to,

- the effects of culture shock (Furnham & Bochner, 1986) stemming from marked differences in social structure, customs, interpersonal relationships, and communication between home and host countries (Ballard & Clanchy, 1997);
- marked differences in the norms and styles of interpersonal communication, which lead to a range of individual uncertainties and anxieties associated with saving face and appropriate social interaction, and which are influenced by varying perceptions and cultural conventions related to differences in gender, age, and status (McSwiney, 1995; Spencer-Oatey, 2000);
- marked differences in educational traditions and approaches to study and research (Ballard & Clanchy, 1997; Samuelowicz, 1987); and IT and library use (Baron & Strout-Dapaz, 2001; Mc Swiney, 1995; Di Martino & Zoe, 2000).

Differences in international students' educational backgrounds are of particular significance. Many are unaccustomed to independent learning, and may be unfamiliar with western research concepts and processes. In some cases individuals may even be suspicious of the researcher's motives and unwilling to put their views "on the record", as I have observed in the course of my project and in students' reactions to official university feedback channels. This may be of particular concern for students from countries with strongly controlling bureaucracies. Thus from the outset, to gain their willing and productive cooperation, the researcher needs to take special care in building participants' trust by clearly explaining ethical principles; emphasising and maintaining confidentiality; and describing the purpose and intended outcomes of the project to ensure they understand their rights, commitments, and how their input will be used.

Recruiting participants can present special challenges since international students (especially those from Confucian cultures) often display reluctance to "stand out" from a group. Thus email invitations, allowing a private response, often proves more effective than calling for a show of hands, or asking volunteers to stay behind after the class. Also, it may be necessary to devise strategies to overcome the natural modesty and reticence of some individuals. For example, a number of students declined to participate in my project, stating a belief that their views were insignificant. Example comments were,

"People won't be interested in my thoughts", and "I don't want to waste your time, I don't have anything important to say".

It is of paramount importance to respect students' possible concerns relating to saving face, and interpersonal issues (including differences of gender, age, and status), by taking care not to create situations likely to cause personal stress or to highlight perceived ignorance or inabilities (Ballard & Clanchy, 1997). Thus, in all communications with members of my sample population, I emphasised that my aim was to deepen my understanding of their experiences, rather than suggest that I was looking for "problems" or "barriers". This guided the wording of my interview questions; and the set task was framed in terms of inviting participants to demonstrate their information searching skills rather than setting pass/fail-type tests.

Often participants need reassurance that constructive or negative responses are valid and acceptable, since some (especially those from Confucian-heritage backgrounds with strong reverence for teachers and authority figures [Ballard & Clanchy, 1997]) may feel constrained from giving frank responses for fear of causing offense or showing disrespect. This tendency can be detected in the following responses to my interview questions.

"What help did you get with searching for information?"
"*I didn't need help*, *library is very good*".
"What did you find hard?"
"*Nothing, databases are useful.*"

Also, students from some cultures (e.g., Hindu or Muslim) might be deterred from attending private interviews if the interviewer is of the opposite gender, significantly younger, or from a different social or religious group. These types of concerns might be allayed by providing alternative male and female interviewers – or perhaps by constituting a focus group.

Linguistic/communication considerations

Linguistic and communication ability varies widely among international students and is closely related to the cultural variables discussed above (Borland & Pearce, 2002). Each individual's English language learning experience will be unique (Cook, 2001), but common communication barriers encountered by international students include comprehension difficulties; limited written and oral skills; different accents; unfamiliarity and confusion with "academic" and other registers of English, and global variations in English; culturally-related differences in cognitive performance and styles of rhetoric; anxiety or unfamiliarity with group participation and discussion techniques; and confusion over body language (Ballard & Clanchy, 1997; Borland & Pearce, 2002; Pincas, 2001).

Researchers need to be alert to the varied causes and effects of miscommunication in a cross-cultural context, since they have the potential to compromise the validity and reliability of findings. In particular, it is important to avoid the trap of assuming that language "barriers" result inevitably from participants' "poor English", rather than a mutual communicative mismatch. All the following factors have the potential to produce inaccurate data and discourage participation.

- The use of incompatible registers of language (e.g., academic vs. colloquial) between researchers and participants.
- The use of jargon or slang in interviews and surveys that is unfamiliar to participants.
- The appearance of unfamiliar accents, which can cause communication difficulties for all parties.
- The misunderstanding or misinterpretation of questions by participants.
- The limited ability or confidence of participants to meaningfully articulate their responses in English (spoken or written) – leading to ambiguous, unintelligible, or incomplete responses in surveys and interviews.
- The misinterpretation of participants' verbal responses by researchers.

- The misinterpretation or failure to recognise meaningful non-verbal cues (body language).

It is therefore important from the outset that researchers accurately determine the English-language capabilities of the people in the sample population and use language of an appropriate level in all written and verbal communication – especially in project documentation such as information sheets and consent forms and data collection instruments. For example, written surveys may be less effective with international students due to a common reliance on quite sophisticated comprehension skills. In the case of the Rodski Research (2003) survey, respondents were required to evaluate 35 statements in two categories – "importance" and "performance". Several students commented to me that they did not see the need to answer the same questions twice, clearly missing the point that the same statement should be rated against two different criteria. Others complained that the questions were too difficult and/or too time-consuming. A brief review of responses to the 2003 survey submitted by CQU Brisbane International Campus students revealed that at a number either gave up mid-way or simply ticked the same column repeatedly. Surveys requiring free language comments also tend to yield incomplete or ambiguous results, as reflected in the following responses to the 2003 Rodski question *What is the one area we could improve to assist you?* "Turn the online catalogue more clear (mainly regarding to in each campus an item is available)," and "Any of the negative things".

Less structured methods, such as semi-structured interviews, focus groups, and observation may overcome some language limitations, since they allow investigators to watch for instances of miscommunication, repeat and rephrase questions, seek clarification of ambiguous or incomplete responses, and gain additional information from the participants' body language. For this reason, in collecting data for my project I combined semi-structured interviews with observations of the completion of a set task. This dual approach provided information from different perspectives – reflecting participants' thoughts and feelings (subjective responses), as well as their actions (objective observations). It also alerted me to some discrepancies between students' self-assessed and actual skills in information searching.

Language limitations can also hinder data analysis. Incomplete, unintelligible, and ambiguous written or verbal responses could be worthless, or lead to false interpretations of responses. Transcribing recorded interviews, which may contain a high degree of ungrammatical statements or mispronunciations, presents another set of challenges. Here it is advantageous for the transcriber(s) to have a close familiarity with the participants' speech patterns and the project environment. As a case in point, a professional typist who was unfamiliar with the field proved less effective at transcribing my interviews than an Australian teenager who frequently interacts in class and socially with international students.

Ethical practice requires that participants fully understand the purpose of the project as well as their commitments and rights. Major cross-cultural studies often employ interpreters or bilingual researchers, although problems associated with lack of linguistic and cultural equivalence still arise (Lonner & Berry, 1986). While this provision would be outside the scope of many projects involving international students, researchers in this field undoubtedly benefit from some personal knowledge of second-language learning and use (Cook, 2001; Reid, 1998; Spencer-Oatey, 2000). As I have found, first-hand language-learning experience heightens awareness of communication pitfalls, and sensitivity to different speech patterns and nuances of verbal and non-verbal meaning. It can also assist the development of rapport between the interviewer and the participants.

STRATEGIES FOR ADDRESSING THE RESEARCH CHALLENGES

The principles of good research practice, which include clarity of purpose, appropriate methodology, rigorous approach to data collection and analysis, and credibility and integrity of the researcher, remain constant with any sample population (Ezzy, 2002; Patton, 1990); but attention to the special nature of cross-cultural research (Brislin, 1981; Ember & Ember, 2001) greatly enhances the quality of projects involving international students. It is also important to allocate considerably more time for data collection and analysis than is often normal. This is to allow for building rapport, language-related hesitations in responses, repeating and rephrasing misunderstood questions, explaining unfamiliar concepts, deciphering written responses, and

transcribing and repeatedly replaying recorded interviews.

Key points for research design involving international students – which incidentally have close parallels with the principles of good teaching with this group (Ballard & Clanchy, 1997) – can be summarised as follows.

- Avoid making, relying on or perpetrating generalisations about international students – respect their individuality as participants.
- Allow for participants' concerns with saving face and cultural influences on interpersonal relationships (e.g., with differences in gender, age, and status).
- Anticipate some unfamiliarity with research – be prepared to explain research concepts and ethical principles, as well as the purpose and process of the particular project.
- Emphasise and uphold participants' right to confidentiality – especially with regard to institutional or government bureaucracy; reassure them that their participation will in no way affect their enrolment or assessment.
- Allow for language limitations in selecting and designing project methodology – consider alternatives to language-intensive surveys and written responses, such as semi-structured interviews, observation and focus groups.
- Use clear, unambiguous language in all written and verbal communication (in project information sheets, data collection instruments, etc.); avoid (or clearly explain) jargon, slang, and unfamiliar technical language.
- Take especial care with design of interview and survey questions and set tasks to ensure that participants are not set up to fail or lose face – or given reason to perceive such risks.
- When recruiting participants, be prepared for a limited response rate – avoid putting individuals on the spot; try a variety of approaches, such as class visits, notices, email, and enlisting the support of the Student Association.
- Encourage participants to respond freely and constructively, to dispel any notion of causing offense or displaying disrespect.
- Allow plenty of time for data collection and analysis; when interacting with participants be prepared to repeat and rephrase questions and instructions.
- Record interviews (audio or video) – repeated replaying helps develop familiarity with participants' accents and language patterns, and often later reveals the intended meaning of an initially unclear response.

THE BENEFITS OF RESEARCHING INTERNATIONAL STUDENTS

The difficulties described above are often counter-balanced by intrinsic rewards to researchers and participants. In addition to providing the desired data, a project may offer rich educational experiences to participants, resulting from their exposure to the research process. Depending on the nature of the investigation, additional teaching and learning opportunities may arise. For example, I provided informal, online information skills instruction in response to questions raised by participants during some interviews.

From the researchers' point of view, projects involving international students offer a valuable opportunity to hone cross-cultural skills and understanding. The resulting professional and personal enrichment is particularly pertinent in our globalized education environment.

The benefits may be particularly rich where the researchers' interaction with international students extends beyond the actual study. Project involvement has the potential to enhance mutual understanding and communication between teaching and support staff, and students; which in turn may have a positive flow-on effect to other activities that link both parties. For example, the benefits may be reflected in improved classroom participation or student services. As a case in point, my project – serendipitously – provided a means of promoting library services as well as gaining informal feedback on students' resource and IT needs which can be incorporated into future planning. Moreover, in light of the ongoing debate over the role of librarians in information literacy and higher education, I believe this kind of research activity has the potential to strengthen librarians' professional standing among the academic and student communities.

Research activities may also enhance the commercial relationship between education providers and international students. In the words, of one of my project participants, this research shows that "you're interested in us, not just our money" (an attitude to be valued in a competitive international education market).

The benefits of culturally-aware research design are not restricted to projects that focus exclusively on international students, however. In many cases (such as the Rodski 2003 survey) international students are, coincidentally, part of a wider sample population, which may include long-term Australian residents, as well as individuals from other non-English speaking backgrounds, such as migrant and indigenous communities. Attention to clarity of language, transparency of purpose, and interpersonal sensitivity will enhance the outcomes of any project.

CONCLUSION

Research involving international students presents particular challenges and pitfalls. It can be time-consuming, even frustrating, for all concerned – but also satisfying given its potential to open the doors of interpersonal communication and understanding. The key to good-quality project outcomes lies in applying sound cross-cultural and second-language principles to all aspects of the research process.

From the lifelong learning perspective, involvement in a research project offers valuable educational opportunities. As participants, international students may gain practical insight – often for the first time – into the research process. Bonus educational outcomes of this experience could include increased understanding of independent learning principles and skills, as well as greater interpersonal confidence in the western academic environment. Researchers too may derive personal and professional enrichment in terms of increased cross-cultural awareness and skills, which they may also beneficially apply to their other professional activities, such as teaching or student services. Thus, the value of strategies and attitudes emerging from research involving international students may be experienced across the university community.

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LIFELONG LEARNING – THE UNIVERSITY CHALLENGE FOR PRACTICAL MUSICIANS

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ABSTRACT

Universities that teach practical music subjects in Australia are excellent at providing academic and solo instrumental lessons, but can suffer in the area of pedagogical frameworks that encourage lifelong-learning skills in personal and professional development. This paper addresses a tertiary course that enables vocal students to graduate with information to self-skill and develop practical lifelong-learning strategies.

INTRODUCTION

Traditionally, the conservatorium of music has been the institution that provided the training necessary to enter the workforce as a performer, while music departments in universities offered courses in subjects that were academic in nature and did not usually offer specialised instrumental or vocal disciplines.

Until recently there were many performing bodies that offered employment to graduates from conservatoria. The conservatoria churned out performers whose focuses were their instruments. Since the economic rationalism that started in the 1980s, funding for professional performing bodies has diminished, and with that fewer performing positions are available. The same music institutions that produced performers are now faced with the problems of producing graduates who need to be entrepreneurial and armed with business and self-learning skills.

The role of the conservatorium of music in Australia has changed rapidly. From a performance-based focus, the institutions have found it necessary to develop academic regimes that reflect the need of the graduating performer to gain employment in a rapidly shrinking pool of work opportunities. Prudence Neidorf (2003) states that "conservatoriums have strengthened the academic requirements of their courses, perhaps because of the increasing pressure to provide courses leading to some prospect of employment" (p. 186).

CAREERS IN MUSIC

The paucity of performing opportunities in Australia is depressing for the young performer who wishes to have a professional, performance-based career. At the present time in Australia there are eight symphony orchestras and four opera companies that provide the majority of performance opportunities for the classically trained performer (Atherton, 2003, p. 109). This situation is not unique to Australia; as Janet Poklemba (1995) writes of difficulties in the work market in the USA, "an example of the competitiveness for orchestra positions comes from the Cincinnati Symphony Orchestra, which announced openings for principal second violin and assistant principal bass and received 348 resumes for the violin position, and 220 for the bass opening" (p. 2).

The majority of performers combine their performing career with teaching, and many of those who do not find regular performance employment also end up as teachers. Few conservatoria in the past have offered "studio teaching" as a subject. Today the benefits of studying at a tertiary music institution include opportunities for courses not only in studio teaching, but also in professional development. There are also subjects that will aid the graduating student to develop business skills and

a continuing lifelong-learning process that focuses on his or her instrument.

Today's universities approximate those of the eleventh and twelfth centuries when dealing with music degrees. Those early universities, although divided into disciplines of law, medicine, and music, included a wider understanding of humanity; their purpose being to give the student an all-round knowledge of life. They gave the student "a grounding in elementary grammar, literature, music and arithmetic, and which prepared the way for the advanced study of mathematics and finally philosophy, whose object was wisdom, the supreme end of knowledge." (Leff, 1992, p. 307).
Almost twenty years ago the understanding that university music courses must embrace more than just the teaching of practical subjects was beginning to be accepted worldwide. According to Randolph Nichols, mature decisions had to be taken by all music departments in the United States when addressing the problems of career opportunities for graduating students (Nichols, 1986).

A quick search through music courses reveals examples such as James Cook University's (2003) *Managing Music – MU2431*, The University of Melbourne's (2003) 740-221 *Careers in Music*, and The University of New England's (2003) *Graduates and Careers*. These courses offer extensive education on "entrepreneurial, management, administration and marketing skills." (James Cook University, 2003); and "Law, accountancy, the commercial world, medicine, psychiatry, librarianship, sound recording and production, arts administration, entrepreneurial activities, music criticism and instrument making." (University of Melbourne, 2003).

The University of Melbourne addresses topics of great relevance for the freelance performer or teacher, who make up the majority of the graduates of our music courses. Knowledge of book-keeping, the tax laws, and entrepreneurial activities are vital for the self-employed performer who must have this basic knowledge to enter the competitive field of performance which is quite different to the environments of major orchestras or opera companies. These topics, if studied at university, allow the student to participate in the world with a greater knowledge base than a similar performer who trains at a performance-only institution.

Chris Duke (1997) argues that by gaining lifelong learning skills in music "the implication is to foster attitudes and skills conducive to continuous critical inquiry rather than just the obvious knowledge and skill acquisitions: process rather than only content" (p. 66).

The traditional conservatorium's practical focus could be described as the "content" while the newer university graduates are given the information to become "process" learners. Duke goes on further to say "The lifelong curriculum implies closer integration of the university with the community" (p. 66). By this he means that the student is able to become a member of the community, but still continue to use lifelong learning skills developed at university to self-educate.

THE VOICE STUDENT

Since this paper is intended to address the particular needs of the student who graduates with voice as their performing instrument, it is necessary to point out the differences between the vocal student and a student of another instrument.

The lifelong learning component of life after university for the musician can be described as management. Management of teaching and performance is best described as three-fold: managing the instrument, managing others, and managing money.

Managing the instrument

Compared to the instrumentalist, the vocal performer differs in that his or her instrument is housed within the body. While it is true that the pianist, or oboist, for example, may be affected by illness, minor maladies may not necessarily reflect on performance. The singer, however, will usually be unable to perform if he or she has a common illness, such as a cold. Even physical conditions brought on by, for example, menstruation, can limit performance capabilities. Hormonal, emotional, and physical afflictions will show in the instrument (the voice) to a far greater degree than with the pianist or the oboist.

Caldwell's (2001) book *Excellence in Singing* lists 57 common medications that can affect the voice: from a drying effect to complete loss of voice (pp. 14-19). One of the most common medications that affect women's voices is the birth-control pill. Sataloff, Hawkshaw, & Rosen

(1998) state that "Hormone medications may cause changes in voice quality due to alterations in fluid content, or structural changes" (p. 145).

The singer uses the instrument that the human population uses for communication, the voice. It is with this instrument that we as a species primarily convey our emotions. The journey to free the instrument from these attachments is well documented in the literature and the study of this specialist branch of voice analysis is known as psychogenic voice disorder. According to Aronson (1990) "the voice disorder is a manifestation of one or more types of psychological disequilibrium, such as anxiety, depression, conversion reaction, or personality disorder, that interfere with normal volitional control over phonation" (p. 117). These are but a few examples of problems that may cause a minor inconvenience to the instrumentalist, but may have a profound affect on the singer.

If the university course can provide the vocalist with the basic knowledge of anatomy, the effects of the endocrinal system on the voice, medications and general vocal health, then the vocalist can use this knowledge for an on-going lifelong learning journey for themselves and/or their students.

Managing others

Vocalists and instrumentalists as performers and teachers both need to have skills to manage people as resources and as students. The major difference between the two is that the vocalist nearly always needs an agent to find professional work. The problem of finding a suitable agent cannot be overestimated as often the only contact the singer will be able to make with a professional company will be through an agent. This is particularly the case with the classical singer who wishes to make a career in opera. General auditions are held by both music theatre companies and opera companies. The general audition is held for ensemble members, not soloists. An agent is almost always needed to secure an audition for a solo role.

As a teacher, the vocalist has a number of problems specific to singing that the instrumental teacher does not have. First of all there are a great number of singing styles, each of which may be based on the same basic technique, but which require a completely different application. The vocal quality and technique required for a jazz singer is totally different from that required for singing opera, or music theatre for example. On top of this, male and female voices have different technical requirements; further complicating the strategies for successful teaching. The whole of these considerations are overlaid by the physiology of the student. This physiology is intrinsically linked to the management of the instrument, as knowledge of anatomy and voice types is fundamental to good voice teaching.

Managing money

Both vocalists and instrumentalists share equally in this management strategy, and if taught at a tertiary level, the correct management of finances and the ability to juggle freelance performance and studio-teaching incomes will prepare the performer for the realities of self-employment. The only exception in this general rule of parity for vocalists and instrumentalists is the music theatre performer. Due to the nature of the triple-threat of music theatre (voice, dance, and acting), the specialist in this field must juggle finances to not only cope with problems that are similar to those of the other performers, but the need to engage in regular tuition in voice, dancing, and acting.

VOCAL STUDIES AT CENTRAL QUEENSLAND CONSERVATORIUM OF MUSIC

While many Australian tertiary institutions offer career studies as electives in their music courses, none have devised courses specifically for singers. In my own institution, the Central Queensland Conservatorium of Music, I have addressed the problems of the voice student in a three-year course specifically designed to provide the basis of lifelong learning in the three management areas discussed above. There are two work books. The first, *Vocal Tech Workbook* (Jones, 2003), is for first- and second-year students. For third-year students there is, *Advanced Concepts* (Jones, 2003). The course is provided for all voice students in the three degrees that our institution offers, Bachelor of Music Theatre, Bachelor of Jazz Studies, and Bachelor of Music. Lectures are held on a weekly basis for each level of the degrees, starting with basic anatomy and finishing at the end of the third year with business studies and professional development. A research assignment is given each semester so that the student may read, understand, and then

synthesise information from medical and scientific texts on singing.

Managing the instrument

Rachael L. Lebon opens her book *The Professional Vocalist* with a short statement that expresses simply the most important need of the singer. "Since our bodies are our instrument, acquiring some understanding of the anatomy and physiology of them can facilitate in acquiring a vocal technique that uses the body most efficiently" (Lebon, 1999, p. 3).

Singing has traditionally been taught by word of mouth – the teacher imparts information to the student. Texts have been available in the past, but have had no scientific basis or common language to describe the physical act of singing. Today, much information can be gained by reading scientific and clinical texts. To be able to keep abreast of new developments in voice studies, students must have a grounding of terminology specific to vocalism and to the academic study of the voice. Norman Punt, an eminent English surgical specialist in the voice laments the problem of earlier literature and its imprecision. "Shakespeare, in one of the better books on singing, summarizes the advice of several singers, including many old masters, and again we note this divergence of views and terminology more picturesque than precise" (Punt, 1979, p. 48).

The scientific nomenclature in current use in vocal science has been accompanied by a precision in description that was previously lacking. Norris Croker, an eminent early 20th century writer on the voice, generalises by stating that all vocal problems are an inheritance of bad speech patterns learned through childhood up until the first voice lesson (Croker, 1920, p. 60). Current specialists, such as Sataloff (1998), Punt (1979) and Lebon (1999) believe that most vocal problems are physiological ones. As recently as 1949, voice teachers were advised that, "It is true that singing can be taught entirely by abstract, more or less emotional appeals to the entire personality of the student" (Vennard, 1949, p. 1).

Since the early and mid-1980's vocal science has made enormous leaps. A common scientific language has been formulated so that the study of the voice can be understood by anyone with the necessary knowledge of the basics of anatomy, speech production, and vocal health. Sataloff (1998) states, in the introduction to his collection of scientific articles, that, "Students trained with this information appreciate the importance of and techniques for maintaining vocal health; and they seem to spend less time sick, injured, or in a physician's office (especially for preventable problems) than their colleagues without such training" (p.viii).

Oren L. Brown (1996) is a leader in the United States on the scientific approach combined with the earlier oral tradition. In the introduction to his book on singing he notes that his ideas are based on scientific and clinical evidence.

To give students the necessary vocabulary, the first-year course focuses on an introduction to basic anatomy of the voice. It describes the larynx and its component parts: the cartilages, the intrinsic and extrinsic muscles, the tongue, and the method of producing sound. Without the knowledge of the particulars of the anatomy, and the scientific names, the student would have no understanding of even basic texts.

In the second year of the course, students are introduced to the anatomy of the body that is involved in singing – the large muscles of the abdominal structure, the lungs, and the notion of "support". They also focus on more advanced issues concerning general vocal health, allergies, and medications.

The third year of the course is specifically designed to study the advanced knowledge of the intrinsic vocal muscles, included diseases and injuries to the thyro-arytenoid structure. It also treats in-depth the ear and hearing.

It is imperative that the teacher of singing, or the voice student, has the ability to keep abreast of the current developments in the understanding the way the voice works. David Manson (2000, p. 200) says that the teacher of singing must have scientific knowledge when dealing with physiological aspects of the voice.

Managing others

Jean Callaghan (2000) points out that the teacher of singing can not rely on experience alone. "A flexible model of professional education for singing teachers needs to take account of both the craft of knowledge currently employed by practitioners in skill teaching and the voice knowledge accumulated through experimental and qualitative research" (p. 118).

My course is specific in its third year to the art of the teaching of singing. The students are taught to recognise voice types, to classify the sub-groups, to devise suitable exercises, and to distinguish common vocal problems and to find appropriate solutions.

The research assignments are always aimed at problem solving. It is by devising programs of study for new singers who present with vocal difficulties and/or physiological problems that the students themselves are able to recognise their own ways of singing. This is the most important practical lifelong learning exercise in terms of their voice. By writing about what they do, they are expressing in concrete terms their own vocal production. By self-reflection and examination of their craft, they start the process of a continued self-examination and learning program of their performing abilities. Expressing this process in medical terms makes the reading of the scientific literature applicable in a real sense.

Managing money

Reynolds, Savage, and Williams (1994) sum up the need for the self-employed person or small business manager to stay abreast of the current and growing database of applicable knowledge, when they state, "Because small business is subject to rapid changes, it is essential that you maintain your knowledge of technology and techniques" (p. 433).

The second semester of the third-year students is devoted to business development. The students are taught the basics of accounting, self-employed business management, the law, the system of agents in professional performance, and the writing of curriculum vitae and performance biographies. They are also instructed in self-devised performance and innovation to self-promotion. Michael Hannan uses an excellent example of the need to self-promote. "There's an old industry adage that no-one is gong to knock on your door to give you a break. Most successful people in the music industry are actively involved in self-promotion." (Hannan, 2003, p. 268). Poklemba (1995) tells us that conservatoria in the United States see career education as a very important part of the general education of music performance students.

CONCLUSION

Lifelong learning is the keystone to successful music performance and teaching in the 21st century. Musicians in today's society must be equipped with knowledge that they can use to develop their own artistic, financial and intellectual capacities in the workforce. A tertiary course that offers the music student the fundamentals of lifelong learning benefits not only the musician, but the community around them through the continuing enrichment of the personal and professional skills of the performer and/or teacher.

While my course is aimed at the singer, the fundamentals can be applied to other performing musicians, and indeed to any artistic calling that requires lifelong learning skills to cope with self-employment in the 21st century. Writers, artists, actors, theatre directors, and designers are examples of arts professionals that would benefit from similar courses delivered at a tertiary level.

Without the development of lifelong learning skills, people in these professions will be ill-equipped to cope in the economic rationalism that is pervasive throughout the arts today.

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KNOWLEDGE MANAGEMENT AND WORKPLACE LEARNING – CHANGING PERSPECTIVES, ISSUES, AND UNDERSTANDINGS

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ABSTRACT

Knowledge management discourse over the past decade reflects a critical shift in the understanding of knowledge within organizations. The developing sophistication with which knowledge is understood as "becoming" within individuals and collectives rather than "being" within information systems leads to learning that seeks to synergise humans and knowledge-enabling tools, and to redefine what it is to learn in post-information organizations.

INTRODUCTION

Knowledge management is evolving from its efficiency-driven past to embrace all four pillars of lifelong learning: learning to know, learning to do, learning to live together and with others, and learning to be (Delors Report, 1996 as cited in Burns, 2002). Generative change in knowledge-management theory has led to understandings that guide organizations through the creation, development, sharing, and institutionalisation of knowledge through knowledge-enabling tools, a focus on development of new knowledge through collective cognition, diversity in collectives and networks, and developing the whole person by suggesting new freedoms in workplace learning opportunities.

The divide in knowledge-management theory over the past decade has had at its focus an ancient debate concerning the nature of knowledge itself. Is knowledge about truth? Is knowledge about understanding? This divide has been reflected in practice that has fallen either toward codification (digitisation of information for organizational members' access) or the personalisation of knowledge (retention of knowledge within organizational members, and sharing of knowledge between members). Recent theory seeks not only to recognise the value to organizations of both approaches to practice, but extends understandings of

knowledge management to recognise the value of collective cognition and its role in facilitating the emergence of knowledge within organizations.

Knowledge management now uses complexity theory to make sense of knowledge in its array of forms and flows. It provides a framework through which workplace learning practice can be considered as a factor which supports knowledge generation and transfer as well as knowledge application. This new perspective highlights the limitations of traditional workplace learning practice in facilitating generative learning and new knowledge. Through this perspective, current workplace learning practice can be seen as a limiter to organizational effectiveness in a complex and complicated world (Kurtz & Snowden, 2003).

This paper outlines the development of knowledge-management theory and practice over the past decade. It attempts to illustrate the ways in which advances in knowledge management might provide a base for new workplace learning theory based on complexity theory and the synthesis of people and knowledge-sharing tools.

KNOWLEDGE MANAGEMENT

Knowledge management is a widely diverse field. Core themes range from taxonomy, through learning, to records management and network analysis. What has persisted across these themes is the debate over the nature of knowledge itself. This core debate provides two overriding paradigms in knowledge-management theory and practice (Gloet & Berrell, 2003): knowledge as truth – explicit, codifiable, objective, and discrete from its creator; or knowledge as sense-making – tacit, personal, "embrained" (Lakomski, 2001), and constructed by the organizational member.

Debate is no less common or passionate today than it was 2000 years ago (Wiig, 1997). Indeed, current academic discussion expends enormous energy in attempting to clarify the truth or sense-making divide (M. W. McElroy, personal communication, November 12, 2003; D. J. Snowden, personal communication, November 12, 2003), and highlights core paradigmatic differences in approaches to managing knowledge. If knowledge is about "truth" then an information focus to knowledge management becomes critical. If knowledge is about "sense-making" then tacit knowledge and learning predominate.

Organizations of all types, from knowledge-intensive organizations (such as pharmaceutical and informational-technology firms) through to those whose core business is more stable (such as schools and government departments) have had to learn more, more quickly, in order to improve organizational effectiveness and to maintain advantage in increasingly turbulent and competitive environments. Knowledge-management practice has been driven by "globalization, ubiquitous computing and the knowledge-centric view of the firm" (Prusak, 2001, p. 1003). New theory and practice is emerging in response to new forms of organization which are subject to prevalent, multidimensional and fast change (Burnes, Cooper, & West, 2003); increasing complexity and uncertainty; and the competitive advantage of other, innovating organizations (Loermans, 2002).

Initially, knowledge management was driven by practitioners looking to facilitate business process and outcomes through improvements derived from the "…perceived efficiencies of process engineering" (Snowden, 2002, p. 100) by codifying knowledge, and developing tools, for its effective capture and transfer.

Knowledge understood as an object led to an information-processing paradigm of knowledge management – the first age of knowledge management (Snowden, 2002). In this view, knowledge equates to data or information – a commodity to be harvested and stockpiled. It is "without" rather than within organizational members. It "sits with" the information-technology areas of the organization rather than with the human-resource development area. It relies on a process whereby "…it is extracted from the person who developed it, made independent of that person, and reused for various purposes" (Hansen, Nohria, & Tierney, 1999). Within this paradigm, information systems themselves – not the people – can become the stable structure of the organization (Applegate, et al. as cited in Malhotra 2002, p. 3).

It is unsurprising that a practice predicated on such a narrow interpretation of knowledge, and promulgated by vendors focused on tools rather than people, was an enormous failure (Storey & Barnett, 2000). The narrow information-systems

perspective neglected the role of the learner in the organization, their knowledge needs, and the value of their tacit knowledge.

By the mid-90s practitioners and scholars were clearly focused on a second generation in knowledge management which highlighted the value of "tacit" knowledge in organizations – knowledge embrained and embodied (Lakomski, 2001). With an obvious trend toward workplace mobility, strategies for facilitating the capture of intellectual capital through human-resource strategy became critical (Malhotra, 2002). With this shift in focus came a recognition of the value of individual knowledge within organizations, and strategies for the retention of embrained knowledge. Facilitation of its transfer through communities of practice in organizations became popular. Tools were focused on the networking of individuals for knowledge sharing as well as on providing knowledge repositories where knowledge elicited from individuals could be stored.

The next generation of knowledge management is evolving out of the recognition of the complexity and elusiveness of the phenomenon of knowledge; the value of its "tacit dimension"; the influence of political, structural and cultural organization environments; and the personal and sociological needs of individuals and collectives in knowledge genesis and learning.

The value of the new sciences in understanding organizations is emerging in a range of disciplines. Chaos theory, quantum mechanics, self-organizing systems, complexity theory, non-linear systems, and fractals are being used in rethinking organization, management, leadership, and knowledge management. Awareness of emergent order, however, has had little impact on organizational theory or practice until most recently (Kurtz & Snowden, 2003). When McElroy (2000) brought together the diverse fields of knowledge management and complexity theory – inspired by the novel work on adaptation and complexity by John Holland (1995) – it offered a new perspective for the consideration of the emergent, complex, and organic nature of knowledge in organizations. It provides a clear divergence from the engineering approach to organizations that has dominated management thinking and practice for the past hundred years.

The application of complexity theory to knowledge management has been developed by Snowden (2002) to become social-complexity theory. It reflects an interpretation of Holland's (1995) mathematical approach to complexity that uses the metaphor provided by complexity rather than its mathematical model. Snowden's social-complexity model highlights heuristics in un-ordered environments where self-organizing capacity dominates. The model stresses the human ability to operate in all domains of order and disorder – choosing approaches and strategies for management dependent on the context within which individuals and collectives operate. This model illustrates and integrates management and complexity theory into a holistic representation of domains for decision making.

The value of the driving metaphor of complexity theory to organizations is in the refocusing of theory and practice on the complex adaptive nature of systems within which knowledge arises. Through this understanding organizations adapt and evolve "organically" in response to a changing environment, and efficiency is seen as reductionist. In biological systems, latitude is important in allowing evolutionary capability (Snowden, 2003). Knowledge in this paradigm is emergent, arising from collectives of knowledge agents, and collectively resulting in organizational learning. Knowledge management becomes focused on managing boundaries and attractants for knowledge creation and development (knowledge "becoming") as well as the management of knowledge which is, or becomes, knowable (knowledge "being") (Bhatt, 2000).

Thinking about knowledge as naturally emergent in a complex, adaptive system focuses theory and practice on the search for knowledge "levers" (Holland, 1995), those triggers within the knowledge ecosystem which lead to generative, rather than adaptive, change – the focus being on innovation rather than replication of knowledge.

Strategies developed to elicit knowledge within this paradigm recognise it as complex, elusive, tacit, and valuable only when a problem arises. These strategies support an understanding of knowledge as rooted in acts of comprehension (Polanyi, 1967), rather than based on verifiable fact (Maddox, 1993).

IMPLICATIONS FOR WORKPLACE LEARNING

Snowden's Cynefin model provides an excellent framework for the investigation of appropriate learning approaches in knowledge ecosystems.

Workplace learning strategies commonly have a strong focus on the dimension of the known. Competency based training, with its roots in behaviourist theory, reinforces current skills in current processes that are explicit and stable (knowledge "being" rather than "becoming"). Australia's national training approach through competency-based training leads to reinforcement of current practice, stabilisation of knowledge through repetition, and reward based on replication. Competency-based training derives from "…an empirical analytic paradigm, which takes the view that reality is objective and that individuals and the world are separate, knowledge involves objectively proven facts and what cannot be legitimately quantified is not worth knowing" (Burns, 2002, p. 56) which is antithetic to generative learning and organic knowledge management in any domain other than the known. Learning of standard procedures and best practice through error avoidance supports the organization in institutionalising new knowledge generated and developed in the other domains.

Competency-based learning practice with its focus on single-loop learning (Argyris & Schon, 1996) and adaptation (Hedberg, 1980; Fiol & Lyles, 1985) continues to be directed at organizational members at operational levels in organizations. Across both public and private enterprise we see learners completing Certificate I-, II-, III-, and IV-level qualifications in pre-management roles. The focus on skills development in applying institutionalised knowledge in operation is fixed in the hierarchy. Training and qualifications based on the competency-based learning strategy dominates at lower levels in the hierarchy. As a result, opportunities for knowledge generation at the base of the organization are limited, and diversity is restricted.

The issue of diversity is an important one. Complex adaptive-systems theory provides a perspective that highlights the role of diversity in evolution. Complexity theory implies that without access to diverse knowledge, learners will be unable to respond to the complexity within which they operate. Like a complex adaptive system, environmental change opens new niches within which diversity can emerge through opportunities for new interactions (Holland, 1995). In a continuous way, diversity provides opportunities that can result in increased diversity to respond to new environmental opportunities. In this way, diversity leads to the development of new knowledge through the interaction and relationships between individuals in diverse collectives.

In traditional practice, however, learners in peer groups are delivered training which reflects outmoded beliefs from the industrial model of organizations – training which assumes a clear relationship between cause and effect and facilitates repetition. If training is about repetition and reuse of static knowledge, it cannot provide the adaptability and flexibility required of a complex and complicated work and life environment. Tools in this domain support transfer of knowledge objects and assist in effecting standardisation of organizational outcomes rather than the creation, development, and communication of new knowledge.

The "knowable" domain reflects an understanding of knowledge as "being" although some analysis is necessary to find it. Second-generation knowledge management supports this level of knowledge. Within this paradigm focus is on human strategies for accessing expertise, knowledge retention, sharing, and the application of tacit knowledge to organizational problems through recognition of patterns from prior experience. The cognitive-Gestalt approach which underpins learning in this domain is seen in the myriad management-development and leadership programs available to organizational members in more senior roles. In this domain, managers are allowed the freedom to seek out experiential learning that is meaningful within a structured format and is supported by formal recognition. Learning in this domain commonly carries kudos attained from the selection for, and completion of, the learning program.

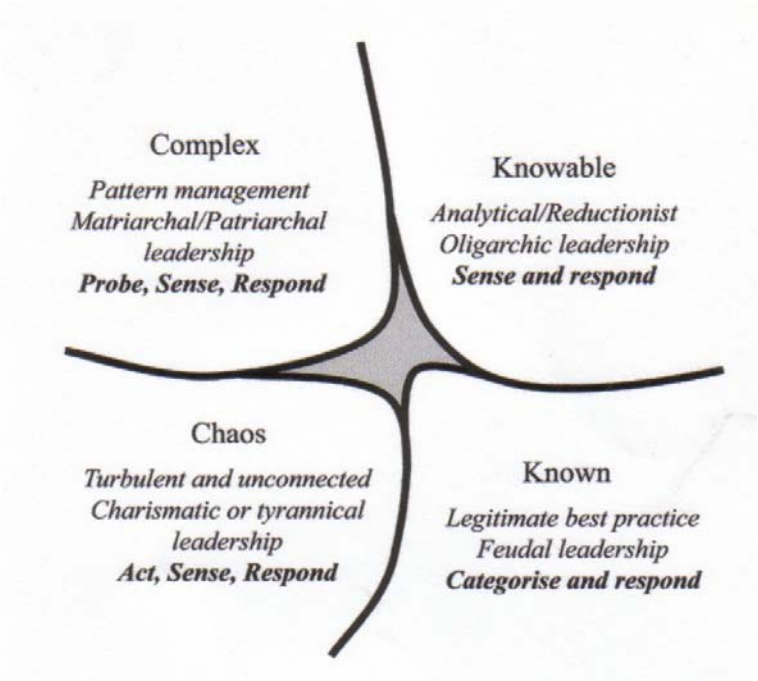

Figure 1. Cyenfin: decision making (Snowden, 2002, p. 106).[1]

Learning within this domain supports "pattern entrainment" (Snowden, 2003), the habit of acting on "…past or perceived future patterns" (Klein, 1998 as cited in Snowden 2002, p. 107). Learning strategy in the domain of the knowable leans heavily on the application of past strategies in the solution of novel problems, which reinforces internal models (Holland, 1995) and leaves theory of action (Argyris & Schon, 1996) undisturbed. This learning is valuable in stable knowledge environments within which a relationship persists between cause and effect, but is ineffective in bringing about learning that leads to innovation. Snowden (2002) asserts that the disruption of patterns of entrainment is crucial to generative changes in knowledge. Tools in this domain support interactive networks and access to expertise, as well as the transfer of knowledge objects.

Latest knowledge management theory points to the critical nature of knowledge in the un-ordered domain of the complex. Within this domain, knowledge emerges through the interaction of agents at the edge of chaos. Knowledge here is "becoming", and generative learning is vital. Knowledge here is emergent, social, collectively created, problem-centred, and just-in-time.

[1] From "Complex acts of knowing: paradox and descriptive self-awareness," by D. J. Snowden, 2002, *Journal of Knowledge Management*, *6*(2), p.100-111. Copyright 2002 by Emerald Group Publishing Limited. Reprinted with Permission.

Traditional workplace learning strategies do not support knowledge in this domain. Learning in this domain is focused on sense-making and the breaking of patterns of entrainment. Within this domain no repeatable relationship between cause and effect can be identified other than in retrospect (Snowden, 2003). In order to provide for complex environments, learning here must be phenomenological and humanistic. It must be heuristic, flexible, and mature. It must focus on individuals and need, and will not always be related to workplace problems. Knowledge in this domain will emerge through the interaction of diverse agents which are often at the edge of chaos. Learning is risky and uncomfortable, it is messy and difficult to measure. It must be tolerant of change and failure. It must derive from, but not limit itself to, past experience. It must be linked to the real world and lead to personal development and fulfilment. It must be collective, social, and lifelong. It will arise from individuals' seeking of emotional fulfilment, and organizations will capitalise from their gaining of it. Using this paradigm individuals are free to follow their curiosity to within inches of disaster and to recover, within collectives. In this paradigm, learning will lead to innovation. Learning within the complex domain requires genuine reframing resulting from "…both semantic shift and shift in anchor" (Schein, 1999, p. 167). There are clear parallels between the capacities required for learning within the complex domain and the field of organizational learning. Both are predicated on cognitive

redefinition (Lakomski, 2001) or pattern entrainment (Snowden, 2003). Kurtz and Snowden (2003) assert that "the learning organization", the practice-focused and prescriptive interpretation of organizational learning, sits within the knowable domain. Organizational learning, however, with its focus on those complex, large-scale behaviours that arise from aggregate interactions of less complex agents, supports the complex domain neatly.

Knowledge-management research has led to the development of a range of knowledge generation, elicitation, and sharing strategies (Snowden, 2002) that form a base for the development of valuable learning interventions in organizations. Approaches include storytelling, which provides rich texts for knowledge sharing, and encourages opportunities for narrative approaches in workplace learning. Kurtz and Snowden (2003) use narrative review, fable development, and alternative histories to facilitate "collective sense-making" (p. 12), the social constructivist perspective embodied in these approaches offering new weight to broadening understandings of workplace learning.

Like Revans' (1978) action-learning strategies, new knowledge-management theory advocates the gathering of experts from diverse fields to challenge assumptions. Knowledge management's addition of exposure to chaos in this process is seen as important in disrupting assumptions and moving organizations closer to a learning ecology (Snowden, 2002).

Critical to the success of these approaches, however, is the overriding principle of complexity; that order emerges through the complex interactions of agents in aggregate. This principle suggests that in contrast to traditional conceptions of ordered and stable environments – where directed, structured, and mandatory learning opportunities suffice – complex environments demand self-directed, fluid, diverse, and voluntary learning opportunities in order for new knowledge to emerge.

Critten (2003) asserts that "The lessons of complexity theory and knowledge management point to the primacy of 'social' rather than individual learning…" (p. 16). Snowden (2003) concurs, describing social adaptability as dependent on social knowledge of community members and the critical nature of the relationship between social interaction and innovation.

Knowledge management's contribution to learning through the development of knowledge-sharing tools has provided an opportunity for computers and people to work symbiotically in what Snowden (2003) refers to as this "co evolutionary period". Social complexity demands a social constructivist perspective on learning, and knowledge management provides strategies and tools to help facilitate it.

CONCLUSION

Emerging knowledge-management theory points to the responsibility of organizations to provide workplace learning opportunities that stimulate new knowledge in a complex, complicated world. It provides a context for the synthesis of the human and the technical within organizations, and attempts to resolve the division between truth and sense-making in learning and knowing. Like knowledge in organizations, lifelong learning is an emergent construct (Leader 2003, p. 362) and emerging knowledge-management theory supports a focus on new approaches to workplace knowledge and learning through which lifelong learning is advanced.

Early phases in knowledge-management theory and practice have provided tools through which the known and the knowable are accessible to learners. The challenge for organizations now is to develop workplace contexts and practices that allow for collectives to explore the complex.

Knowledge management offers organizations a perspective on the complex nature of organizations, knowledge, and learning. It highlights the limitations of traditional workplace practice, reinforces the value of social learning, and provides "co evolutionary systems based on emergence through interaction of agent with tool" (Snowden, 2003) through which collective cognition can occur.

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LEARNING PLANS: INTENTIONAL SUPPORT FOR LIFELONG LEARNING

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ABSTRACT

This case study reports on usage of an online learning plan by facilitators and returning adult students in a high-school completion program to determine its efficacy as a method of support. The findings support previous research that links strength of goal commitment, interaction with a facilitator, and positive self-concept to success of adult learners in a formal educational context.

INTRODUCTION

Our research and experience with adults returning to formal learning environments have determined that individualized learning plans[1] have the potential to link the personal and social identities of students with the academic curriculum, mapping a pathway to activities appropriate to needs and goals (Crichton & Kinsel, 2003). We view a learning plan as a vehicle for opening the channels of communication between learners and facilitators by providing a series of prompts designed to elicit responses from the learners, enabling facilitators to help learners to articulate their learning needs and personal goals. We believe that involving learners in the development of learning plans encourages ownership and commitment, thus increasing the likelihood of success.

Increasingly, educational programs attract numbers of lifelong learners, many of whom face situational, institutional, or dispositional barriers that impact on their participation. As Thompson (1989, p. 48) states "increased accessibility to failure is no victory." It is therefore imperative that educational institutions focus on supporting learners who are particularly at risk of failure as they encounter the academic and emotional challenges of returning to school as adults. We believe that learning plans could be an integral part of a learner support system, providing encouragement and motivation for the learner to continue and to be successful.

This paper reports on the findings of a case study into the use of an interactive, online, learning-plan tool by facilitators and adult students to determine the efficacy of this method of support in assisting learners to engage successfully in the complex activity of being an adult student in a formal secondary or post-secondary school environment.

THEORETICAL FRAMEWORK

When adults decide to pursue further education, in spite of competing role or time demands, they bring with them a set of life experiences, attitudes, and problems to be solved. The decision to re-enter academic programs after a period of absence is fraught with anxiety for most returning adult learners. Many returning adult learners are high-school dropouts and, having experienced educational failure once, are not eager to try again (Cross, 1981, p. 56).

Enrolment and success in educational programs is dependent on the ability of adult students to perceive themselves as belonging in the academic environment regardless of predisposing characteristics that contribute to a self-concept of failure in educational pursuits (Witte, Forbes, & Witte, 2002; Crichton & Kinsel, 2003). "How learners see themselves, as successful or unsuccessful learners, has bearing on whether they, in fact, will be successful or unsuccessful" (Wiseman & Hunt, 2001, p. 45). Effective learner support systems can increase self-confidence, increase positive feelings about learning, improve self-image, create emotional

[1] Learning plans are the result of dialogue between learners and their facilitators, providing a shared opportunity to investigate individual needs, formulate objectives, identify resources, choose strategies, and evaluate accomplishments.

well-being, help individuals through personal and education transitions, and assist students in solving problems and coping with stress (Tracy-Mumford, 1994).

Our previous research (Crichton & Kinsel, 2003) has shown that the interaction between learner and facilitator that is inherent in developing learning plans enables facilitators and learners to engage in a process that invites regular, reflective consideration of the learners' changing needs and goals. Knowles (1980) states that learning plans can serve as the means for determining individual attributes, learner needs and goals, learning resources and strategies, evidence of mastery of learning objectives, and methods of evaluation. Furthermore, learning plans should also include a mechanism for ongoing revision as personal circumstances change because amending a student's learning plan in response to changing needs or goals sustains student motivation and increases the likelihood for persistence.

Learners themselves, states Knowles (1980), should be involved in the development of their learning plans. He emphasizes the need to involve adult learners in the "process of planning their own learning with the teacher serving as a procedural guide and content resource" because of the tendency of human beings "to feel committed to a decision (or an activity) to the extent that they have participated in making it (or planning it)" (p. 48). Knowles thus links the self-diagnosis of learning needs and a clear sense of direction for improvement, with motivation. Wlodkowski (1985, p. 115) states "because the learners have greater personal control in determining and understanding what their learning needs are, their motivation and involvement for the resulting learning experience should be enhanced."

Goal setting is one strategy Gibson (1998) identifies as enhancing academic self-concept. Eisner (1998) observes that articulating goals and thereby making public what is private "stabilizes what is evanescent" (p. 17). Goal setting has the potential to raise productivity; improves work quality; clarifies expectations; increases satisfaction and performance; and contributes to self-confidence, pride in achievement, and willingness to accept future challenges (Locke & Latham, 1984). Counsellors working with adult learners see a need for support that recognizes the individual and addresses issues of self-identification and self-confidence (Crichton & Kinsel, 2003). Recognizing this, we have attempted to link theory to practice through development of an online, learning-plan tool with the following features.

- a means to assist learners think about goals, objectives, methods, timelines, and outcomes;
- a means to involve learners in making decisions about what will be learned, how it will be learned, and whether learning objectives have been met;
- a means to incorporate changes in personal attributes that are the result of the learning process;
- a means to promote ongoing dialogue between facilitator and learner;
- a means to recognize past experiences as a foundation for future learning;
- a means to provide learners with a sense of progress toward achievement of their goals;
- a means to develop mutual trust between facilitator and learner;
- a means to provide anytime, anywhere access.

The design of the online learning plan draws heavily from our research and practice. A preview copy of the online learning plan is available at http://community.netidea.com/ekinsel. Components of the online learning plan are hyperlinked and are not intended to be accessed in a linear sequence. Prompts based on the work of Sauveur and Longworth (n.d.) provide an opportunity for the learner to reflect on personal qualities and offer a concept of self that may be linked to what Bandura (as cited in Lim, 2000) calls self-efficacy, or the belief in one's own capabilities to organize and execute a course of action and to control events that affect one's own life.

The learning plan encourages the learners to consider that learning is not limited to the school environment and that they most likely have participated in learning that is related to work, hobbies, or personal accomplishment. Prompts that encourage the learners to envision themselves five to seven years in the future are designed to clarify goals and assist in the development of an action plan to transform what the learners have discovered about themselves into a roadmap for future learning. Important components of the action plan include

identifying where the learning will take place, who will provide assistance, planned start and end dates, and a method to assess whether each objective has been achieved.

The personal journal section of the learning plan is provided to support a text-based dialogue between the learner and facilitator. This can be conducted either synchronously or asynchronously. Learners can record reflections about personal discovery, questions about course content, or descriptions of events in their personal lives.

A section of the learning plan enables learners to record their accomplishments based on their own definitions of success. Feelings of being a successful learner, and satisfaction from the activity of learning, are important motivators for adults (Tough, as cited in Cross, 1981, p. 85).

METHODOLOGY

A case study approach was used to observe two facilitators and six female, adult learners aged 19 to 40 as they used the online learning plan for one semester. The learners in this study had returned to high-school completion programs after an absence from formal education of at least one year.

Field notes from observations and interviews were transcribed, analyzed, and coded according to the themes found in the literature and our practice. These included nature of adult learners, self-concept, motivation and persistence, learner support, learner-facilitator interaction, and goal setting.

RESULTS AND DISCUSSION

Within the theme of the nature of adult learners, our research suggests that the learners who participated in this study had experiences and circumstances that were similar to those of adult learners described in the literature. All of the learners in the study had re-entered school voluntarily with diverse educational backgrounds and social contexts. When we asked learners why they had not completed high school previously, their reasons included having to drop out in order to go to work; not seeing education as being important, relevant or interesting; and not getting along with family or peers. This is consistent with Cross's (1981) findings that family responsibilities or a lack of clarity of educational goals are the most common reasons given for not completing education programs previously.

Another theme is the link between self-concept and success. We found evidence of how reflected appraisal (the perception of how a person is seen by significant others) in addition to how individuals sees themselves contributes to self-concept. One learner reported that teachers in high school told her there wasn't any point in continuing as she wasn't smart enough. In her learning plan, this individual describes herself as being very ambitious and determined, but not at all intelligent, although she states "I know what I know…and that works for me" and "I know I could have learned this before." Others mentioned that the support of family and friends contributes to their motivation, but one expressed feelings of frustration when those closest to her ask "how is it going?" if not much progress is being made. When reflecting on the lack of progress of a learner, one facilitator stated "she doesn't see herself as a successful learner." The learner herself admits that she has made several attempts at returning to school, but she always quits before the final exams. The evidence of past and present experiences reported by our learners is consistent with other research (Lim, 2000; Wiseman & Hunt, 2001) which concludes that academic self-concept is closely linked to academic achievement. The opportunities available in the online learning plan for reflecting on past learning achievements, particularly those that happen outside of the formal school environment, assist learners to view themselves as successful learners when previous school experiences may have contributed to a negative self-concept.

Regarding the theme of motivation and persistence, the reasons given by our group of learners for returning to school this year are consistent with those found in the literature. Our learners expressed both external and internal motivations. "I want a career not a job", and "It's almost impossible to get a job without your Grade 12" were typical comments. One learner stated "I have always wanted to graduate," and another says that after twenty years of raising a family "it's time to prepare to do something with my life, and I need a sense of accomplishment." Another matter-of-factly asserts, "There are things I need to learn." These comments reflect previous research findings that adults are ready to learn when there is a need to know something, often in response to external motivators (better jobs, promotions, higher salaries), but also

internal pressures such as the desire for increased satisfaction, self-esteem, and quality of life (Knowles, Holton, & Swanson, 1998). The learners in this study acknowledged the value of the learning plan as a motivator. One commented "It's a tool for helping me" and another stated the links to information on careers and post-secondary education provided motivation for completing her courses.

Further to the theme of motivation and persistence, we found evidence that our learners, like other adult learners studied in the literature, struggle with competing obligations and a lack of time. Learners told us that "so many things get in the way" and "time leveraging is the hardest task of an adult student." One learner is also faced with health issues that prevent her from working on her courses as much as she would like, but she also admits to succumbing to distractions and being a procrastinator. Her journal is filled with almost daily comments that indicate good intentions of completing assignments, but "there is always something that needs to get done" for her family or community. Her facilitator used the learning plan dialogue to acknowledge her situation and encourage her to set manageable goals – a response that the learner found valuable in keeping her going.

Our research data are consistent with the findings in the literature related to the theme of learner support. One learner wrote in her journal,

> I am having trouble sticking to my work. I guess it is because I feel lost in this big old world. One day I feel like I am on my way to a brighter future, then the next I feel like I have gone 12 steps back…and do not know what I want. (Student)

Another learner viewed her own lack of progress as being the result of not being told what to do and not receiving constant assurance that she is "on the right track." When these learners met with the research team to receive orientation to the learning plan, they took advantage of the opportunity to organize a weekly study session at their learning centre, acknowledging their feelings of relief that each of them was not the only one faced with the difficulties of returning to school. Their comments support Ludwig-Hardman and Dunlap's (2003, ¶3) statement that students who do not attend formal classes for instruction often "report feelings of isolation, lack of self-direction and management, and eventual decrease in motivation levels." Recognizing that the study group would enhance his ability to support these learners, the facilitator enthusiastically encouraged them and offered to reserve the time so he would be available to provide assistance. As we observed this process unfold, it confirmed our belief in the importance of a learning community which is often difficult to achieve when learners are not participating in traditional classroom instruction. The online learning plan can strengthen the link between the learner and the educational provider, thereby increasing what Tinto (1975) describes as "institutional integration," a factor contributing to continuation in educational programs.

The importance of learner-facilitator interaction is another theme arising from the literature that was also highlighted in our research. One learner cited frustrations with poor communication as a factor contributing to investigations of alternative educational providers as she didn't feel that her needs were being addressed currently. She also expressed disappointment that lack of response by the facilitator to her journal comments made her feel she was "missing the whole key idea of using the learning plan." Another learner in our study described the opportunities for interaction with the facilitator as well as what she called "self talk" as being beneficial in providing motivation. The learning plan, she stated, "makes you think about what you want to do in one or five years from now and causes you to dwell on it. It opens doors to the future." Furthermore, she felt the learning plan could help learners achieve immediate objectives by enabling them to set goals and feel accountable, but that the facilitator needed to provide encouragement along the way. The facilitators acknowledged that the learning plan was a "valuable missing piece for contact with students," but felt that the learning plan process needed to be incorporated into their regular routine before they would use it to best advantage.

A final theme used in this analysis is that of the importance setting goals. All six learners either stated specifically in their interviews and in the learning plan that they are goal-oriented individuals, or mentioned particular goals that led them to enrol in their current high-school graduation program. They recognized the advantages of completing high school primarily as it translates into increased economic

opportunity. One spoke of wanting to finish high-school before her kids could use her non-completion as an excuse to drop out themselves. Locke and Latham (1984) state that motivation can be increased by goal setting, but it can lead to "precisely the opposite effect if it produces a yardstick that constantly makes the individual feel inadequate" (p. 39). They remind us "Nothing breeds success like success. Conversely, nothing causes feelings of despair like perpetual failure" (p. 39). The negative effects of goal setting that Locke and Latham describe were expressed by one learner who admitted to a pattern of setting high goals and then experiencing a sense of failure when these goals were not attained – since achieving success is important to her. Using the learning plan to develop realistic and manageable goals can assist learners to gain a sense of accomplishment and efficacy which in turn lead to increased motivation to learn. The facilitator can provide support and guidance through the collaborative process of learning plan development.

Further evidence of consistency with the theme of goal setting from the literature is the value our learners perceive of using the learning plan as a motivator. One learner describes the learning plan as a tool to keep her moving in the right direction when it is so easy to get distracted, and another sees its usefulness for developing a long-range educational plan. One eloquently stated that, "It is one thing to have goals in your mind, but another to have them on paper and see them in black and white." This is consistent with Eisner's (1998) view that "Nothing is so slippery as thought; here one moment, gone the next" (p. 17). Having her thoughts in print allowed her the opportunity to reflect and revise her goals to be more realistic. She states this will help her to gain a sense of achievement, leading to further success because a "sense of accomplishment is like an addiction." This echoes Cross (1981, p. 55) who states "learning is addictive; the more education people have, the more they want, and the more they will get."

CONCLUSIONS

The findings of this study support previous research that links strength of goal commitment, interaction with a facilitator, and a positive self-concept to persistence of adult learners. We believe that these elements are enhanced through the collaborative process of developing and maintaining a personal learning plan. Even with a limited amount of experience in using the online learning plan, our group of learners recognized its potential benefits as though they were quoting from the current literature. They acknowledge that goal commitment results from participation in identifying appropriate, achievable goals that are recorded and shared. They value the intentional dialogue that is the heart of the learning plan process. They appreciate the recognition of their individual strengths and their need to balance multiple roles. They welcome the opportunity to build confidence and see that success in academic pursuits is possible.

This study confirms our previous findings that schools must shift their focus from institutional agendas to student needs, and learning plans provide a means of assisting in this process (Crichton & Kinsel, 2003).

> "It is our belief that schools, especially those concerned with lifelong learning, must incorporate a program supportive of personal development before they launch into academic or vocational skill acquisition. Learning plans, in our view, are key to supporting that shift" (p. 216).

It was with this in mind that we developed the learning-plan tool to be used by learners and facilitators for intentional, ongoing dialogue focused on acknowledging the learner's personal context and on designing an action plan of learning activities to assist in goal attainment.

The online, learning-plan tool we developed has the potential to link learners to their educational programs; providing the increased motivation, encouragement, and commitment that are crucial to continued participation and success. However, as noted by the facilitators, time for working on learning plans cannot be left to chance; it must be incorporated into their regular routine, and they must be adequately prepared to engage in learning plan dialogue.

This study focused on a small group of adult learners enrolled in high-school completion programs. In order to provide evidence of the effectiveness of the online learning-plan tool to support adults in a greater variety of contexts, it will be necessary to replicate the study over a longer period of time and with a larger, more diverse group of learners and facilitators.

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TUMBLE DRYERS AND JUGGERNAUTS: INFORMATION-USE PROCESSES IN ORGANIZATIONS

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ABSTRACT

This paper discusses a perspective on information literacy in the workplace based on research into the information use of senior managers. Varying experiences of information use reflect different information-use processes and point to the complexity of information literacy.

INFORMATION LITERACY AND INFORMATION USE

A key component of information literacy is information use. One of the most widely cited definitions describes information literacy as an understanding and set of abilities that enable individuals to "recognise when information is needed and have the capacity to locate, evaluate, and use effectively the needed information" (American Library Association, 1989, p. 4). The influential relational model of information literacy developed by Bruce (1997) identifies information use as one of the three elements in each of seven faces of information literacy and one that moves from being marginal to becoming focal across the seven faces. The "Prague Declaration" refers to information use in its definition of information literacy (Information Literacy Meeting of Experts, 2003).

Moving away from its origins in school settings, information literacy in the workplace is now receiving more attention. The relevance of the relational model to a higher-education workplace has been demonstrated (Bruce, 1999), and a study of internal auditors has shown the efficacy of information literacy in a business setting (Cheuk, 1997). A program for developing information literacy in a law firm has been reported (Gasteen & O'Sullivan, 2000), and links between information literacy and knowledge management have been established (O'Sullivan, 2002). Consideration of the information environment of organizations has broadened the understanding of information literacy. For example, the term "corporate information literacy" encompasses not only the skills and competencies of information literacy but also an understanding of the value of information and knowledge and its strategic significance to the organization (Abell & Oxbrow, 2001, pp. 133-135). In the context of the workplace, an information literate person is able to "navigate the landscape …and understand its ecology" (Lloyd, 2003, p. 89).

UNDERSTANDING INFORMATION USE

Once described as "one of the most neglected areas of study" in information behaviour (Wilson, 1981, p. 5), there are some signs of increasing attention being paid to information use by researchers who, in the past, have focused more on information needs and information seeking. As information-behaviour research more commonly adopts cognitive and constructivist viewpoints on the interactions between people and information, it is moving beyond information seeking as an end point and focusing on the ways in which information is actually used (Vakkari, 1997, p. 461). It follows that there is an identifiable lack of theory development in information use; a situation that is also lamented in the field of information literacy (Mutch, 2000, pp. 154-155).

The study of information use by senior managers reported in this paper was designed to explore the relation between people and information in an organizational setting by addressing the question, what are the different ways in which managers understand and experience information use? The research approach was phenomenography; an approach that seeks to uncover "the relatively limited number of qualitatively different ways that a phenomenon is conceptualised by those who have experienced it" (Marton, 1981, pp. 180-181). The experience of a phenomenon is "of its essence nondualistic being neither physical nor psychological, located in neither people nor the world, and neither mind nor matter" (Marton & Booth, 1997, p. 122). A way of experiencing a phenomenon is a representation of the relation between the subject and the object. The representation reflects the experience of the

phenomenon from the perspective of the phenomenon as it is experienced (Marton, 1986). In the study reported here, information use was the phenomenon explored through the relation between people and information.

Fifteen senior managers from two public-sector organizations in the cultural industries sector participated in the study. One organization had a national charter and almost 4,200 employees, and the other had a state charter and almost 450 employees. In each case, the managers were part of the senior executive group responsible for the implementation of their organization's strategic plan, and were accountable for the performance of the division or branch they managed. The primary data came from semi-structured interviews lasting from 55 to 105 minutes. Secondary data included notes made by the researcher immediately following each interview and documents given to the researcher by some of the managers during the course of the interviews. On each occasion, the interview was regarded as a conversation with the managers who were asked to describe two situations that arose in their work roles and to reflect in depth on their experience of information use in the context of each situation.

The study revealed five qualitatively different ways of experiencing information use: packaging information, enabling the flow of information, developing new knowledge and insights, shaping judgements and decisions, and influencing others. Each of these experiences of information use is described with a focus on information-use processes and with illustrative extracts from the interview transcripts. The extracts identify the senior managers by a unique number, and the page numbers refer to the relevant interview transcript.

1) Information use experienced as packaging information

The process of information use was characterised as having three identifiable but iterative phases: getting information in, manipulating it, and getting it out. The managers' experiences suggested that the process was action oriented, although it also had cognitive and affective dimensions. Activities such as gathering, compiling, and pulling together information from different sources were dominant. The physicality of the process was captured when a branch manager demonstrated the way in which she laid out the draft text of an annual equity report on the electronic whiteboard in her office. Sections of text and photographs were colour coded and arranged in a matrix based on the report's headings and the relevant legislation, and then shifted around as the report was compiled.

A major consideration in getting information in was the quality of the information gathered from various sources. Quality was related to both the credibility of sources and the validity of the information provided. Information from one source, such as the Internet, was verified by information from other sources, such as the published literature and recognised experts. Making judgements on the quality of information about the potential impact of digitisation on public programs was a difficult experience for one manager because of the paucity of available literature coupled with people's general inexperience of digitisation projects. The quantity of information also presented difficulties. In one instance, the information that a division manager needed to develop a marketing plan had not been collected systematically in the organization and was not available. In another instance volumes of information were available to a branch manager developing a training package for volunteers but much of it was of doubtful quality and ambiguous authority.

In manipulating information the sense of audience was pervasive and helped shape the approach to presenting the information package. One branch manager puzzled about the reaction of the group she was addressing in a briefing paper. Another, when developing an enterprise agreement, established a reference group within the organization to consider a consultant's report that was based on private sector remuneration practices. He reflected on the activity:

> We knew we had to do something with that information so we put it through the tumble dryer and we saw which way it fell out by processing it with that group (Interview 7, page 11, branch manager).

Another branch manager recounted her experience of misjudging an audience's understanding of an issue. As a consequence she had to prepare an additional paper that presented a rationale for the proposed restructure of the branch she managed. Although the manager acknowledged that she was disappointed at the

time, developing the rationale allowed her to construct the arguments that were needed later to secure the branch's acceptance of the changes that were made.

The presentation and style of the information package were key considerations in getting information out. There were suggestions that the compilation of the information package was routine or formulaic and it was likened to "doing a jigsaw puzzle, a crossword" (Interview 10, page 17, division manager), especially when the form of presentation was prescribed by workbooks and templates. A division manager commented that the first time she prepared an information package was often the most difficult because there was nothing to work from, although she warned against complacency. Not all information packages were routine or predictable in their presentation. A division manager who prepared an issues paper on digitisation for the organization's governing board approached the task as an academic exercise and argued a position based on an analysis of the literature and interviews with experts. Citations, footnotes, and a bibliography were included in the paper. Another important aspect of presentation was the discourse and style described by one branch manager as "government sort of speak" (Interview 13, page 15).

2) Information use as enabling the flow of information

This information-use process was not as clearly defined as that for packaging information. It had an identifiable starting point with the recognition that information needed to be transferred to – or exchanged with – others, and although it resonated with the activity of getting information back out, its distinctive characteristic was that it involved the transfer or exchange of information with people through some observable activity. The process required thoughtful planning and management so that information was available and accessible when needed. For example, a division manager crafted a daylong workshop to share information about a new direction for the organization and to seek people's initial responses to it. A branch manager planned information-sharing sessions so that individual members rather than the manager herself addressed a large group about its changing functions, and guided the discussion. The manager avoided being seen as an impediment to the exchange of information and ideas even though she was present.

While the information that flowed needed to be credible and valid, it also needed to be timely and relevant, and its significance needed to be signalled in some way. The formal and informal communication channels and structures of the organization both fostered and impeded information flow. In one instance, branch managers had to find informal ways of exchanging information until formal mechanisms were put in place following the introduction of a flatter structure in the organization. Avenues for information flow, especially meetings, were required to be purposeful rather than ritualistic. For those managers who reflected on the benefits of information sharing to the organization, the example set by the chief executive officer was significant in setting expectations.

Managing information flow, especially across the organizations, required confidence on the part of senior managers because of the risks to their credibility and their capacity to meet the commitments and undertakings they made. It also required a degree of resilience and persistence. One branch manager compared information flow in his past workplace with that in his current workplace, and expressed some frustration:

> I sometimes would like to revert to my former life in the Army where I just say 'Just get on with it' and there are no arguments, there's no debate. It's purely one-way traffic in terms of the information that you give out…It's very true of organizations like this with participatory management practices that the transactions can sometimes be so convoluted that you actually do go round in circles. (Interview 14, page 21, branch manager)

Approaches to the transfer and exchange of information were seen as closely aligned to the culture of the organization and sometimes changed as the culture changed. A division manager suggested that more varied face-to-face communication strategies were needed to enable the flow of information following the departure of a very directive chief executive officer. These strategies would help rebuild the confidence and capacity of people in exchanging information and ideas.

3) Information use as developing new knowledge and insights

The starting point of the process came with the realisation that current knowledge and knowledge states were inadequate for a task, and the end point came with the emergence of new knowledge and insights. Analysis and reflection, thinking, and learning dominated the process, with the understanding that it was more conceptual and cerebral than material and physical. To succeed, the process required a planning framework as a type of scaffold at the organizational level, and a similar framework for individual managers. Time and space allowed new knowledge and insights to develop, and sometimes people preferred to remove themselves physically from the organization for a period of time to consider a novel approach or an innovative solution.

Information came from different sources; predominantly from people with similar portfolios in other organizations and from professional contacts, but sometimes from documentary sources. A branch manager scoured discussion lists on the Internet for information, and although he located another person engaged in a related project, he discovered that he was leading what was probably the world's first large-scale digitisation project. Another branch manager re-used information gathered earlier for a different purpose but its meaning to the manager engaged in the current task had changed since its previous use.

With its forward looking and strategic orientation this experience of information use challenged both traditional work practices and the orthodoxies of professional practice. In one example the status of the fundamental indexing unit in archives was challenged by the capabilities of a search engine that offered searching flexibility unknown in paper-based archive systems. Tensions emerged between the current state of knowledge and the emerging knowledge and insights. A division manager struggling with the nature of assets in a cultural institution commented that,

> I've got information management literature that is talking about knowledge management and knowledge as a core asset. I think that's really where we are but I'm being told [by the organization's funding agency] that no, no, assets are just buildings, plant and equipment…I'm trying to sort this out in my own mind (Interview 10, page 9, division manager).

One branch manager puzzled about the distance between her thinking and that of her colleagues, and another was concerned at losing touch with her peers as her thinking changed. Moving into the new and the unknown presented risks, and these were reflected in the elation, relief, doubts, and fears that were expressed.

4) Information use as the shaping of judgements and decisions

The process of shaping judgements and decisions was seen as a journey. Information as well as principles contributed to the process. The principles related to the manager's own values and beliefs, and to the goals and directions of the organization. They signalled a commitment to adding value to the services provided by the organization and bringing benefit to those served by the organization and its programs. There were two components to the journey: verification of the information on which the judgements and decisions were based through desk research and conversations with trusted others; and confirmation of the appropriateness of the judgements and decisions as they were emerging, again through conversations with trusted colleagues and others in the organization. A branch manager reflected on his approach:

> I never make big decisions by myself. I always talk to people. I always talk to program makers who I think are influential and who have good ideas. I talk to editors, I talk to [my supervisor]. I talk to client research people (Interview 4, page 5, branch manager).

It was evident that sometimes information and principles informed the judgements and decisions as they were emerging and at other times they reinforced the judgements and decisions that had been reached. The interdependence of verification and confirmation was seen as a significant element in the appropriateness and effectiveness of those judgements and decisions. The process was reported as being more intuitive than rational with gut feeling seen by one branch manager as being far more important than information he sourced from documents.

The shaping of judgements and decisions was not without risks as managers applied their knowledge and experience to situations that were new to them personally and to the organization. In one situation, a division manager's trust in a colleague from a partner organization was diminished during the re-negotiation of an agreement. Information that had been shared previously was withheld, and conversations were replaced with formal meetings and written records as the strength of the partnership was tested. The experience of information use in this situation was distressing for the division manager involved and it led him to question the principles and values that guided him. He regarded the program that was supported by the partnership as an example of best practice, and he was keen to preserve both his personal relationship with his colleague and the organizational partnership.

5) Information use as influencing others

This process of information use had a starting point when a need for a significant change for the organization was recognised by those responsible for implementing it. The end point was identified when people directly acknowledged that their thinking or perspective had changed, new behaviours were observed, or new approaches were mentioned in documents written by others. This experience of information use was concerned with securing a different kind of future for the organization as it moved towards its goals. The evidential value and reliability of information were important. Information was sometimes gathered in-house through surveys and then used to demonstrate that the current situation was no longer sustainable or appropriate, and to indicate the scale of change required.

The process of influencing others took time – and sometimes space – as managers gathered information and considered ways of presenting it, and the people they influenced developed their understandings, adapted their behaviour, and adjusted their thinking – or at least accepted the realities of the change occurring around them. The process relied mainly on face-to-face interaction – a rich medium that reduced the filters in communication among people. Effective interactions implied high levels of trust that assumed both personal and organizational dimensions; and direct communication from the chief executive officer had an important symbolic significance and dimension.

Influence was sometimes resisted and flexible responses were sometimes required. In one situation a branch manager modified his expectations of a group when it proved unreceptive to the development of a learning partnership and maintained its client-contractor relationship. In another situation, a work group boycotted meetings, and the division manager developed a range of strategies for involving the group. In the end, the proposed changes were implemented and the resistance of the group was overcome. A sense of the power and forcefulness of the organization at times of significant change was given by a branch manager responsible for the introduction of team-based work processes:

> The mantra that I've just been repeating to them over and over again is either you become part of the change or you become road kill. You're just going to be squashed by the juggernaut that's going to sweep over you, pointing out the fact that [organizations like ours] throughout the world are all undergoing change (Interview 14, page 18, branch manager).

IMPLICATIONS FOR INFORMATION LITERACY IN THE WORKPLACE

These five different ways of experiencing information use in organizations illustrate the complexity of information use. Together they reflect different relations between people and information. In terms of experiencing information use as packaging information and enabling information flow, information is understood as an object that is independent of and external to those who use it. In terms of experiencing information as developing new knowledge and insights, information is seen as internal to the individual, and its meaning changes as new understandings are developed through the analysis of and reflections on information. The relation between people and information is an intimate one. In terms of experiencing information use as shaping judgements and decisions and influencing others, information is fused with principles, values, and beliefs, and it has a dimension that transforms it and gives it the capacity to transform people and organizations. The relation here between people and information tends towards the symbiotic.

The complexity of information use raises questions about the education and training of people for the workplace. Information-literacy programs in schools, Technical and Further Education (TAFE) colleges, and universities have usually assumed a limited experience of information use and a limited understanding of information; that is, as the packaging of information for assignments and assessment tasks and sometimes as the flow of information through class presentations. Information literacy programs based on constructivist approaches to learning are more consistent with the experience of information use as developing new knowledge and insights and a subjective view of information. Few, if any, information-literacy programs consider the experience of information use in shaping judgements and decisions and influencing others. Those who suggest that information literacy is a key capability in social, cultural, and economic development – a recent suggestion that implies a view of information as transformative – acknowledge this experience of information use (see, for example, Information Literacy Meeting of Experts, 2003).

There are questions also about information-literacy education and training within the workplace; not only in terms of who is responsible for designing, delivering, and evaluating programs, but also about their scope – particularly as people remain in a workplace over a period of time. There are questions too about the roles of information professionals in information-literacy programs in the work place, and their preparation for those roles. The study reported in this paper, together with these questions, should offer some guidelines for enabling people to navigate the landscape and to appreciate the ecology of the workplace as well as handle information in the interests of their own personal development and that of the organizations for which they work.

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DEVELOPMENT OF AN ONLINE LEARNING ENVIRONMENT FOR INFORMATION LITERACY

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ABSTRACT

Information-literate people may perform their lifelong learning better because they have the abilities to recognize, locate, evaluate, and use information effectively. We have developed an online learning environment to help people to become information literate. The learners may set their own topics for inquiry, create information by presenting their thoughts, and manage the learning process by themselves within the online environment. Three graduate students of the university gave us their responses regarding this environment.

INTRODUCTION

The necessity for people to be information literate is increasing in this information-rich society where it is essential for us to keep pace with the knowledge and technological expertise necessary for finding, applying, and evaluating information. Given the ever-expanding sea of information at our disposal, the ability to locate, evaluate, and use effectively the needed information is critical to the learning process, especially to lifelong learning. Those people who are information literate can analyse and interpret information, and this ability enables them to respond critically and creatively to problems. The acquisition of information literacy involves mastery of certain skills, construction of specific knowledge, and the adoption of certain attitudes.

Though the importance of information literacy is recognized in Korea, progress in education and research related to information-literacy concerns hasn't gone beyond the introduction of the concept (Kim, 2001). It is time we dealt with the more practical and concrete methods of how to help learners to acquire information literacy. One of the critical issues in information literacy is how individuals deal with information and how they create their own information. An understanding of the concept of information literacy will help us to know how we can help learners to more actively carry out their self-directed learning.

As for a theoretical background, inquiry-based learning on the basis of constructivist epistemology provides the essential principles for designing a learner-centered environment. The Web has the potential to provide a constructivist learning environment. In inquiry-based learning, the *process of acquiring* the knowledge is emphasized rather than simply getting knowledge itself. The purpose of inquiry-based learning is to facilitate higher-order thinking and self-directed learning. On the Web, learners are able to inquire into the solutions to problems by themselves.

The purpose of this study is to develop an online learning environment for people to gain information literacy. The design principles of this environment promote learning activities, which are inquiries and reflections on direct experiences, and support collaborative learning and individual knowledge construction. Guides to resource utilization, learning activities, and directions of learning are also provided.

THEORETICAL FRAMEWORK

Information literacy

The Korea Institute of Life-long Education Evaluation (2002) has defined information literacy as the ability to create knowledge that is meaningful in people's real lives, and to manage the way the knowledge is communicated in their communities. Information literacy requires both the ability to use digital technology and critical power. The American Library Association's (1989) Presidential Committee defined information literacy as the ability to know when information is needed, [and] to be able to identify, locate, and effectively use that information for lifelong learning and problem solving. In this report, the ALA Presidential Committee called for a restructuring of the learning process in order to create a new Information Age school characterized by

interactive, self-initiated learning, with the teacher as the guide to learning. The Council of Australian University Librarians (CAUL) released the first edition of the Australian standards for information literacy as follows.

- Awareness of information needs.
- Search strategies for information.
- Evaluation of information and its sources.
- Storage and retrieval of information.
- Use of information to expand, reframe or create new knowledge.
- Socio-cultural, ethical and legal information literacy practice.
- Lifelong learning context of information literacy practice.
  (CAUL, 2001)

Acquiring these information-literacy competencies requires higher-order thinking and inquiring into the meaning and the context of the accessible information. Learners cannot acquire these competencies through "delivering content," rather through cultivating "habits of mind" (Hobbs, 1998), and "creative power." The information-literacy competencies are not the goals themselves but developing the capacity for solving problems faced in real life. So the "habits of mind" and "creative power" are the desirable outputs of modern education.

Inquiry-based learning

Inquiry is defined as "a seeking for truth, information, or knowledge by questioning" (Byun, 1999). From birth, individuals carry on the process of inquiry even when they don't reflect on this process. The process of inquiry begins with gathering information and data through applying the human senses – seeing, hearing, touching, tasting, and smelling. In this way we construct much of our understanding of the world, and produce appropriate resolutions to problems on the bases of reflective thinking.

Information is very important in the process of inquiry, but as a means to an end, not as an end in itself. As the content of disciplines is constantly expanding and changing, no one can ever learn everything. The skills and the ability to continue learning are important, and this is the rationale for why an inquiry-based learning environment is needed for lifelong learning.

In an online learning environment for information literacy, learners will consciously plan and self-manage their own inquiry activities, and continually construct their knowledge base by asking, investigating, creating, discussing, and reflecting. A cycle of inquiry-based learning adapted to information literacy (see figure 1) helps to visualize how five activities of inquiry within the analysis-practice recurring structures comes into play. The critical parts of inquiry-based learning are, asking questions, and carrying out investigations for the most appropriate solution. Bruce and Davidson's (1996) study provides a model of inquiry for acquiring literacy competency. In that study, the process of learning starts from what the learners already know or what they have questions about. From this knowledge and these questions, new knowledge and new questions branch out through observation, communication, reflection, and detailed construction. Learners will form habits of mind while they go through this process. The habits of mind are nurtured through asking questions and reflecting on the process. Guides of learning and useful questions should be provided to learners. These "scaffoldings" help learners to ask their own questions. Useful questions guide and facilitate learners to use critical thinking in solving the problem.

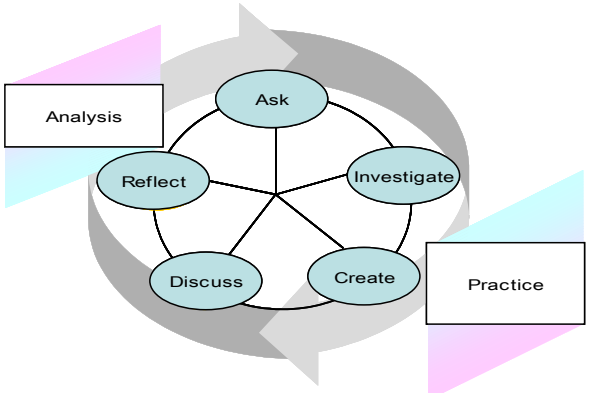

Figure 1. The process of inquiry in information literacy, based on the inquiry model for literacy in Bruce & Davidson (1996).

The distinctive features of the online environment are conducive to the activities of inquiry-based learning – and to the learner-centred environment, which is one feature of constructivism. In an online environment, learners carry out their learning by themselves, participate in it, and have ownership of it. They have access to unlimited resources for inquiry, and opportunities to develop their inquiry and problem solving activities (Bonk & Dennen, 1999). The authors developed their model for an online learning environment for information literacy (see figure 2) which has such components as "learning activities", "learning environment", the "process of inquiry", and "knowledge base and habits of mind" as the products.

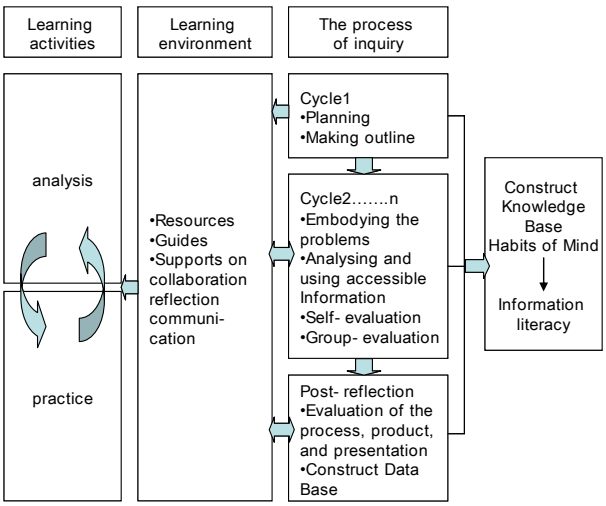

Figure 2. Process of learning in an online learning environment for information literacy.

The elements of the learning environment are embodied as spaces – spaces for individual learning, group work, communication, resources sharing, and other activities. In the spaces the learners perform inquiry activities.

DESIGN AND DEVELOPMENT

The online learning environment is the place where learners are able to carry out their inquiries and access unlimited online information, construct knowledge bases and value systems, and finally, present their own information. The principles underpinning inquiry-based learning for such environments are as follows.

- Learners learn through direct experiences on the basis of inquiry.
- The process of inquiry has cycles and progress with reflection.

- The environment supports collaborative learning and individual knowledge construction.
- Diverse learning resources are provided.
- Guides to self-directed learning are provided.

Based on these principles, we suggest these design strategies for the on online learning environment. First, help learners to experience directly what they need to learn more effectively with supports for inquiry and practice. Awareness of the learning process and the methods of inquiry enable learners to perform their learning actively. Resources and best examples of information creation practice should also be provided. Learners then study the basic concept and methods as required in their initial subjects, and then select what they want to study among the various resources according their interests and their roles in the team. Learners should plan the schedule and check it's progress.

Second, help learners to reflect on the process of learning. By doing this, learners will have a thorough grasp of how they are carrying out their tasks, what goes too far, and what doesn't go far enough. Based on learners' judgement, the process of learning will be continually improved. The progress of their project will be shared with other project teams who should be encouraged to exchange questions and advice. Also, learners may reflect on the experts' practices . Analysis of an experts' information processing and creating enables learners to understand what information-literacy competency is and helps them to present the knowledge they construct themselves. Analysis of the information is one reflective process where a comparison can be made between the students and the expert regarding how they think, carry out their tasks, and solve their problems.

Third, help learners to collaborate with communication tools and co-working support tools for collaboration. With these tools, learners are able to construct common understandings and to co-work with the minimum of noise (Kang, Seo, & Kwon, 2000). These tools include those for awareness sharing, schedule checking, task planning, idea exchanging, and making out products. These tools should be effectively integrated for users' convenience.

Fourth, help learners to use diverse learning resources according to their interests. Learners will participate in learning more actively when they collaborate and share information, as well as opinions, with peers. Some might be learners who have the same interests or take the same roles but in different teams. Support for communication between groups will guide students to create their own learning resources spontaneously. And learners can learn more efficiently if they are introduced to relevant resources and links. These meta-data will be useful for learners to evaluate and process the information by themselves. Learners may exchange their opinions and useful information.

Fifth, help learners to plan and control their own learning. They may make a note of what they learn and think in the process of problem solving. Documentation helps learners to check what they have done and what they are doing with peer learners, and to internalize what they have learned collaboratively. Learners should realize that they are the subjects of their learning. Guides that lead them to ask new questions through reflections should be provided indirectly. When learners are provided with scaffoldings of appropriate questions when making their reflective notes, and when reflecting on the experts' modelling, they can deepen their understanding, and improve their learning activities. They can then be allowed to select what they are interested in after they finish the required subjects. They can check the process of their learning, and rearrange their plans.

RESULTS

Based on these principles and the strategies, a prototype for an online learning environment for information literacy was developed. This environment (see Table 1) has a "classroom" containing elements related to learning activities, "my room" related to individual knowledge construction, and a "group workshop" for collaborative learning. Via asynchronous communication, learning materials and results, and resources and links are provided in "resource room". In this "room", and managed in a data base, diverse types of information is provided to learners, and the direction of learning is suggested through the underlying guidance in the information and learning activities.

	Space	Contents
especially for information literacy	Classroom	• Introduction to this program • Information inquiry • Information creating process • Gallery-providing best practices, sharing results, and exchanging opinions with peers • Chat room-synchronous communication • Discussion room-asynchronous communication
	My room	• Album • Schedule • Reflection notes • Messenger-addresses, mail, message exchange • My library
	Group workshop	• Project management-sharing project goals, schedule, roles • Sharing information of team members, community building supports (searching, bulletin board) • Whiteboard
for general activities	Resource room	• Links to relative sites • Data base
	Lounge	• Chat room for social communication • Bulletin boards for social communication
	Helps	• Q & A, FAQ • Notices • Site map

Table 1. Platform of online learning environment for information literacy.

The components of the online learning environment are divided into two parts; spaces for information literacy, and spaces for general activities. The design that was adopted relied heavily on the visiting-the-school metaphor and incorporated navigation based on the use of a school metaphor. Besides having a resource room, it also has a lounge, and "helps" for general activities. For information literacy, the make up of the "home page", "classroom", "my room", and "group workshop" are as follows.

Home page

The home page welcomes learners with a ground plan based upon the familiar metaphor of a school. The basic ideas about information literacy and the program are provided before learners begin their activities in this program.

Classroom

The cycle of inquiry in information literacy is supported. Teaching and learning are implemented in this classroom. Resources directly related to the learning contents are provided at the gallery. Learners may read experts' explanations and observe experts' products. Learners reflect on the experts' process of information inquiry compared to their own. They may arrange meetings with teachers and peers via synchronous and non-synchronous communication tools, making use of forum and a chat room.

My room

The number of the messages sent in the owner's absence appears in a pop-up mini-screen. The learners may decide which part and how much of their room they will share with peers. Others can read and write with the owner's permission. The menu of the "my room" includes "Reflection notes", "my schedule", "album", and "my library".

Figure 3. The home page.

Figure 4. A gallery in 'classroom'.

Group workshop

When doing a project, learners may set the goals of the team, construct the team schedule, divide the roles, share the information that is useful for their work, exchange their opinions, and negotiate with peers for the carrying out of tasks. Learners may seek out and make contact with the people who are playing the same role as themselves in other teams. Learners with similar interests can build communities in this group workshop.

DISCUSSION

The online learning environment for information literacy was developed using the principles of inquiry-based learning, and three graduate students tested the program. The learners recognized the usefulness of the spaces being divided according to the activities, the importance of information inquiry, the need for strategies of inquiry, and the need to have supports for effective communication. Conceptual knowledge about information literacy was provided before they delved into problem solving in earnest. This had a positive effect on activities.

The learners said the Web is one of the most appropriate tools for information literacy because they can acquire, analyse, synthesize, and create information through its use. The Web may also provide them with an authentic context for acquiring information literacy. Constructivist theories and methods can be implemented using this web-based learning environment. The next phase of development in this project should focus on building a learning community in the environment, especially creating incentives for the external experts to participate continually in the community.

CONCLUSION

In this learning environment, learners set topics for inquiry, collaborate with members of other teams as well as those of their ownteam, create new information, and manage their own learning processes and schedule and monitor the entire process. They continue to reflect on experts' best modelling, while acquiring information literacy from the "information creating process" in the "classroom" and by analysing existing information in "information inquiry". They also engage in cyclic inquiry through practising, creating, and exchanging information.

In Korea, research in information literacy is only at the fledgling stage despite the high speed of information communication technology (ICT) development and its diffusion. This study is the first to incorporate the strong points of an online learning environment for information literacy, which is inquiry-based learning. It will contribute to establishing an inquiry-based learning environment for information literacy, and it will shed light on future developments. The online learning environment for information literacy should be improved and complemented through continuous research in the future. First, there should be principles and strategies to induce and motivate learners' active participation. Second, the operation, management, and assessment of learning should be taken into account in the online learning environment. Third, more experimental research should be carried out by refining the prototype into a practically-applied environment.

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CONSTRUCTING INFORMATION LITERACY: A VYGOTSKIAN APPROACH

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ABSTRACT

The prominent educational theories of Vygotsky have just entered the discipline of information literacy. I will concentrate on three of his themes: the dialectical interdependence of the environment and the self, the need to relate to a student's potential rather than his or her achievement, and the inadequacy of most current measures of information literacy.

INTRODUCTION

> I don't want to discover the nature of mind by patching together a lot of quotations. I want to find out how science has to be built, to approach the study of the mind having learned the whole of Marx's method. (Vygotsky, 1978, p.8)

The theme of this conference, "Lifelong learning: whose responsibility and what is your contribution?" are complex questions. We all consciously or unconsciously have a pedagogy which we use in our approach to student learning. I choose to consciously use Vygotsky's model to implement cooperative learning, action-based learning, and critical learning. Vygotsky was an early 20th century Russian Marxist and his theories of learning were dialectical, humanist, and materialist.

Essentially, what Vygotsky brings to education is the concept that learning (in our case, information literacy), is a dialectic relationship and is revealed in the dynamics of a process in motion, change, formation, and distinction, in its movement and change. (Vygotsky, 1993, p. 247)

In a system where profit is paramount, virtually all the things that get produced under capitalism – cars, houses, food, books, degrees – are not produced because they are useful (though they may be), but in order to be sold on the market. This activity of producing things and products (including students), not for human need but to make a profit, has profound effects on us. The environment we interact with in the process of creating knowledge is invisible to us in many ways.

Don Watson (2003) describes the language of managerial exploitation which has become invisible, like this,

> One day perhaps someone will be interested enough to trace the point at which this journey into fog began. Was it the Chicago School of economics? When supply side economics became the main game of politics? Was it the management revolution? Microsoft?...Or when Labor parties stopped pretending to be socialist and gave up the fight against the corporation?…In the years since then business language has been steadily degenerating, mauled by the new religions of technology and management. (p. 24)

While Don Watson only goes so far (but in a delightful way) to exposing language we should not use, Vygotsky sees language as developing out of a system we should challenge.

COMPARITIVE MODELS OF INFORMATION LITERACY

Mohamed Elhammouni (2002) makes the point that many discussions of Vygotsky's work "go no further than to explore how development is the conversion of social relations into mental functions focusing on how individuals achieve that through mediation" (p. 90). I agree with Elhammouni when he says that it is essential, while considering questions of mediation (teaching) to not leave behind the question of the psychological cell of Vygotsky's theory: the social relations of production. Marx viewed the organized working class as crucial to understanding the balance of power at any one time.

This is in sharp contrast to one understanding of lifelong learning, most notably propagated by the World Bank, which sees learning as a process towards adapting to *capitalism. In* "Constructing Knowledge Societies: New Challenges for Tertiary Education", the World

Bank Group (2002) look at new demands that today's world markets and emerging technologies are making on higher education, and at some of the ways in which tertiary education is responding. Within an economic rationalist model of learning it sees workers adapting to the needs of capital to make nation states more profitable. The current conception of the university as a business fits this model.

Christine Bruce (1997) as a relational or phenomenography theorist**, e**xamines the varying experience of information literacy and proposes a relational model as an alternative to the behavioural model that dominated information-literacy education and research. While the relationships between learners, objects, teachers, ideas, contexts, and research are important, the Vygoskian model goes beyond the internal relationships.

Phenomenography's aim is to define the different ways in which people experience, interpret, understand, perceive, or conceptualize a phenomenon, or certain aspect of reality. This model allows for a dynamic way of looking at the relationships between aspects of reality, and much of its dynamic is shared with the Vygoskian approach.

Vygotsky differed markedly from Piaget who described learning as staged development. Vygotsky saw learning as preceding development and believed that development is a process, instead of a product to be obtained. According to Vygotsky, the development process that begins at birth and continues until death is too complex to be defined by stages (Driscoll, 1994)

The "Australian and New Zealand Information Literacy Framework: principles, standards and practice" (2004) states that "Information literacy education should create opportunities for self directed and independent learning where students become engaged in using a wide variety of information sources to expand their knowledge, construct knowledge, ask informed questions, and sharpen their critical thinking." However an unintended outcome of this framework has been the interpretation of the standards as stages. Mapping standards to the first, second and third year of a degree does not embrace faster and slower learners.

Collaborative learning, active learning, and experiential learning, all coincide with a Vygotskian model, but models that *only focus on objective, observable behaviours*, and discount mental activities, are incompatible with a Vygotskian approach.

VYGOTSKY AND THE MOVE FROM TRAINING TO TEACHING

Within the abovementioned Information-literacy framework, Mandy Lupton (2002) focuses on the following two critical-thinking outcomes, *"*Recognises interrelationships among concepts and combines potentially useful primary statements with supporting evidence" and "Analyses the structure and logic of supporting arguments or methods", to talk about the shifting and unsettling responsibilities of librarians who now have to teach. Within the University of Melbourne's Learning Resources Services section there is discussion and disagreement about how far a librarian should go in taking on teaching rather than training. It is inconceivable to me as a Vygoskian theorist that the critical-thinking aspects of information literacy can be left to others.

It is my practice to discuss the information component of information literacy with the lecturer, to ask her or him which aspects of information they perceive their students to have difficulty with, and to work with the lecturer to devise exercises and classes to overcome these difficulties. An example of this practice took place in a course that is compulsory at an early stage of the social work degree. The course coordinator identified a non critical use of Web sources as a problem. Together we devised an exercise that made students identify when the website was updated; who the author of the website was; whether the author had an overt purpose; and other aspects of validity, authority, currency, and subjectivity. The students had to visit two of eight websites chosen by the lecturer, and answer questions. The Web exercise counted for 5 percent of their total mark.

I agree with Lupton (2002) when she says,

> We are deluding ourselves if we believe that we are 'embedding' information literacy into the curriculum by delivering the standard 50-minute bibliographic instruction session, even if it is within the context of the subject. We are also misrepresenting information literacy...

The purpose of the University of Melbourne's Information Division is to "Provide members of the University with the most sophisticated forms of information and knowledge available and ensure that staff and students have the confidence to use information easily and efficiently"(University of Melbourne, 2004). Yet since 1996, government funding to universities has been reduced by some $AUD800 million a year – 15 percent of total revenue. By 2002, universities lost nearly one quarter of their public funding. Higher education would have to be well resourced and funded, as a priority, for universities in general to apply embedded models. A well resourced university would much better be able to meet stated purposes, and I acknowledge that other universities will have greater financial challenges.

Although I try to incorporate Vygotskian principles into my teaching by treating all students as potentially better students, by reflecting on a research problem so that others can join in the discussion, and by allowing debate and collaborative work in class, I cannot pretend to be implementing a total Vygotskian model in the current climate of fiscal austerity and user-pays philosophy in Australian higher education. This paper offers a perspective in the tradition of being a realist and demanding the impossible. The Learning Resources Services section of the University of Melbourne does not embrace the Vygoskian model and, to a degree, is reluctant to take on the critical thinking aspects of the information-literacy framework. I therefore have to balance a personal framework with the conflicting model used by the section.

VYGOTSKY AND COMPUTERS

In 1993 I initiated a computer-instruction program completed in 1996, called "Ariadne's Thread" It was an early guide to finding your way through the catalogue. A colleague, Paul Fritz, from the Multimedia Unit worked on the project to investigate techniques for visually mapping patterns of interactivity generated as students moved through the program. A graphic overview of an individual learner's experience was mapped and used as a focus for further development. Lessons were learned from this experience, and very different computer models are now being developed. The freedom that a computer program can give a student to work at his or her own pace, to contact a lecturer or tutor, to email questions when he or she is stuck, and to engage in discussion with other learners, all converge with a Vygotskian approach – as long as the community of learners is not ignored, and the package is not seen in isolation as a cost-cutting devise.

Vygotsky's theory effectively challenges the transmission theory of learning which has as its basis the concept that there is a static body of knowledge which has to be installed in the student's head. He reminds us that the learner changes the environment then the environment; has an impact on the learner – the process continuing in a dynamic manner. This is often referred to as a dialectical relationship, which has change as a central theme. When I lead a tutorial or a lab-based, hands-on class, I always make sure that while my knowledge may be greater than that of the students, I am open to them sharing their more exact knowledge. In a plagiarism and citation class, a student challenged me on my stipulation that cited electronic information should be printed and stored in case it is not archived and becomes untraceable. This led to debate, and I left the question open.

According to the Sunday Age newspaper (Cervani, 2003, December 28), a report to the Commonwealth Government's Department of Education, Science and Training, released on Christmas Eve, 2003 on the department's website, states that online learning does not always live up to expectations. According to the article, the report, "Online Teaching and Learning in Higher Education: a Case Study", examined the University of Southern Queensland postgraduate courses that were totally online. There were concerns that teaching "might be taking second place to commercial interests", the authors said (Department of Education, Science, and Training as cited in Cervani, 2003, p.3). The computer as a tool cannot stand outside the context of teaching as an historical human socio-cultural process. However the authors do state "We make no claims about the relative merits of online teaching and learning compared with face-to-face teaching; rather, we hold the view that 'good teaching is good teaching'. We hold that the main difference between the different delivery modes lies in the strategies and tactics available to achieve good teaching". An important implication from Vygotsky's argument is that within a computer-learning environment, there needs to be an increase of interaction between the teacher and the learner, as well as between learners. A corollary to this

proposition is that if the intended outcome of such learning experience is the improvement of problem solving skills, then the focus of such interaction should be on the skills and processes involved with problem solving.

POTENTIAL

Ruqaiya Hasan (2002) says that "as members of the human species we possess an almost unlimited potential for learning…however what we typically learn in our lifetime is constrained by our social (or class) location"(p. 537). At birth we are yet to acquire a mind. To become usable, the human brain needs experience. The type of experience we provide is crucial in the possibilities that students can use to create their consciousness of information literacy. Vygotsky believed that the construction and assimilation of knowledge that can be developed in collaboration is much greater that which can be attained alone. Thus, the value of learning, or the construction of knowledge, is increased through social interaction. The constructivist approach to learning emphasises authentic, challenging projects that include students, teachers, and experts in the learning community with a goal to create valuable, beneficial experiences that are more closely related to the collaborative practice of the real world. In my "avoiding plagiarism" classes I try and make the students reflect on their friends' styles of walking or writing emails, and I try to point out that each of us has an individual style. I point out that if we are reading an essay, and that individual's style is broken, then it alerts us to the possibility of plagiarism. I let the class take over. I don't talk or intervene for a while.

By letting the group break into smaller groups, learners help other learners in the construction of knowledge. This has serious implications for the role of teachers, because the line between teacher and student becomes blurred. The role of the teacher changes dramatically from transmitter of information to facilitator; guiding students to an awareness of their experiences. According to Doolittle and William (1999), the teacher's job "is to motivate, provide examples, discuss, facilitate, support and challenge, but not to attempt to act as a knowledge conduit."

Many interpretations of Vygotsky give much emphasis to the "zone of proximal development" (ZPD). Vygotsky said that if we determine a learner's level of development from observations merely of what she or he can do independently (of others), then we are leaving out a very important aspect of what learning is.

Because Vygotsky asserts that cognitive change occurs within the zone of proximal development, instruction would be designed to reach a developmental level that is just above the student's current developmental level. Vygotsky (1978) proclaims, "learning which is oriented toward developmental levels that have already been reached is ineffective from the view point of the child's overall development. It does not aim for a new stage of the developmental process but rather lags behind this process" (p. 89).

The essential part of teaching as a Vygotskian is the capacity to think on one's feet; to shift and change with the comments made; to meet the needs of silent member of the class; and to constantly check in a variety of ways that you are meeting student expectations, not just your own.

In differentiating what can be attained in cooperation with peers or teachers from individual attainment, Vygotsky reiterated one of his central themes: the source of development in higher consciousness is always social. Only later do these processes become individualised. Part of this understanding is that learning precedes the development of concepts rather than visa versa. It would not be an exaggeration to say that most of our work ought to be broadening the ZPD. To this end I have started to begin classes by asking students to turn to the person sitting next to them and to do an exercise of sorts. In a hands-on, social-work class for the subject, "Human Resilience across the lifespan" – where there was a choice of life events to focus on for a 1000-word essay – I asked students to tell each other what life event they were going to use. If there are an odd number of students I go and sit with one and act as part of the class.

The ZPD embodies a concept of readiness to learn that emphasizes upper levels of competence. These upper boundaries are not immutable, however, but constantly changing with the learner's increasing, independent competence. The Vygotskian model thoroughly challenges a statement I heard an information literacy librarian make along the lines that "there are some students you just can't teach". I prefer to think that there are just some teachers who can't teach.

ACTIVE AND COLLABORATIVE LEARNING

The implication of Vygotsky's concept of learning is that it is active. If we applied his approach to botanical classification, for example, we could say that for Vygotsky the essential thing is not a knowledge of taxonomic categories but a mastery of the classification procedure (definition and application of taxonomic criteria, the classification of ambiguous or borderline cases, determination of new members of a class and, most important of all, learning to execute the logical operations that interlink various classes, etc.). Using Vygotsky's method, information-literacy skills should be described as transferable, not generic. Obviously for lifelong learning, the skill itself is needed rather than the one-off capacity to perform a task. We teach concepts but, concepts that are situated in the activity base of the discipline.

In the classes already referred to "How to avoid plagiarism and cite correctly" an historical context to plagiarism is given by looking at the word's entry into the English language in the late 18th century. Before this time ownership of words and ideas was inconceivable. This class emphasizes finding an authentic voice rather than the punitive consequences of citing incorrectly, giving tools and conventions to do this.

I have noticed that collaborative learning is a substantial theme in this conference. Vygotskian educational theory endorses this idea. Proponents of collaborative learning claim that the active exchange of ideas within groups not only increases interest among the participants but also promotes critical thinking. Gokhale (1995) points to evidence that shows that cooperative teams achieve at higher levels of thought and retain information longer. A serious obstacle to Vygotkian collaborative achievement lies with the examination method of assessment. Unfortunately, the cumulative exam system dictates most methodologies within the lecture theatre and tutorial. The constant pressure of covering topics and getting courses completed in time for exams means that lecturers and librarians do not feel flexible enough to experiment with the types of learning projects described above.

EVALUATION AND ASSESSMENT

Much of the work we are doing in measuring or evaluating information literacy takes us back to the very problems Vygotsky grappled with: whether only the observable is real, the problems of who measures and why, and the problems of cultural biases. Vygotsky believed that we need to see how the observer influences results. He saw this subjectivity as necessary and would dismiss a positivistic attempt to pretend that observation or measurement can be neutral.

He pushed the boundaries of evaluation beyond the simple study of techniques and methodologies and pure statistical or mathematical results. Without subjective analysis, without thought and interpretation and the deciphering of data, we do not have scientific research.

Controversially, Vygotsky saw testing an individual, as if that individual has a fixed knowledge out of context, as absurd. Where collaboration is frowned upon, particularly in the examination room, Vygotsky saw collaboration as a natural part of social life.

Evaluating whole programs like the Council of Australian Librarians Administration Manual (Council of Australian University Librarians, 2003) is also carried out by investigating what has been achieved rather than what potentiality can be achieved. But as a qualitative method, the interview is better than the questionnaire because of its potential to provide rich ideographic data, the characteristics of which are in keeping with the interpretive framework. The interview is a flexible and probing means of data collection.

This survey instrument is "designed primarily for program-wide and institutional-level evaluation or research" (Council of Australian University Librarians, 2003) An example addressing the standard concerned with "Recognising need for information" is, "When I start an assignment, I decide how much information I need" It presumes that someone who was good at recognising their information needs would agree strongly with the statement, whilst someone who was bad at recognising when they needed information would disagree. But even as an experienced researcher, I would have difficulty defining what "how much" is. As a Vygotskian I do not oppose the survey and see

some merit in the anonymity of the collectivised results that can be used to measure changes at an institutional level over time.

Within the Vygotskian framework measurement of achievement of information literacy can only be done using a non-competitive, unthreatening, human-growth model. Some of the measures we use go partially towards this. None go far enough.

CONCLUSION

Vygotsky started from the conviction that humans should cease to be mere objects and start to live as subjects. We should cease to be prisoners of our social relationships and begin to develop our underdeveloped potential. Marx said that humans make history but not under the circumstances of their own choosing. We all have constraints. But we can all choose to be bold, adventurous, compassionate, and reflexive educators. If we understand that *both* students and information-literacy librarians and are active agents in the process of information-literacy development then we have to develop the structures and processes in the university system to support this idea.

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GRADUATE ATTRIBUTES – WHAT ARE THEY AND HOW DO WE KNOW IF STUDENTS CAN ACHIEVE THEM?

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ABSTRACT

This paper considers two practical issues regarding graduate attributes. The first issue concerns the development of a comprehensive list of graduate attributes whilst the second issue addresses the question of how one determines whether graduate attributes and generic skills have been adequately fostered throughout an undergraduate program of study.

INTRODUCTION

The world is constantly changing and one of the many roles of universities is to equip students with skills that will prepare them for a lifetime of learning. Some of these skills are content specific but many are context free and generic (Candy, 2000). Exactly what specific content knowledge and skills will be needed in the short to medium term is hard to predict, however. While "discipline skills and technical proficiency" (Higher Education Counci1, 1992, p. 20) are seen as important in the short term, it is generally agreed that generic skills are more highly valued because of their usefulness over a lifetime. The focus on lifelong learning in Australia began in the early 1990s, at about the same time as the push for quality assurance in university teaching (Higher Education Council, 1992). By the end of the 1990s the Department of Education Training and Youth Affairs (DETYA) and the Australian Universities Quality Audit (AUQA) required institutions to describe the graduate attributes (GAs) they seek to develop as an indication of quality assurance. In addition, professional bodies require graduate attributes to be clearly recorded prior to course accreditation. Further, employers expect graduates to possess skills that enable them to meet the expectations of the workplace and graduates themselves expect universities to prepare them for the workforce. In such an environment, no university can ignore the external pressures to carefully consider the learning outcomes students will demonstrate and the generic skills that they will develop through their years of tertiary study.

This paper records the journey from the initial interest in, and the development of, a list of graduate attributes; through to the recording of specific, generic skills across individual subjects within the Bachelor of Business at Swinburne University. The experiences at Swinburne are not unlike those at other universities, as documented in several papers presented at the biennial International Lifelong Learning Conference, and other conferences (de la Harpe &Radloff, 2000; Watters, 2000; Crebert, 2002; Sparrow & Sharp, 2002).

APPROACH AND FRAMEWORK

The approach used by the authors of this paper has been action learning or action research. This is an approach that assumes that the social world is constantly changing and the researcher and the research itself are part of this change (Hussey & Hussey, 1997). Action research involves a cycle of planning, acting, observing, and reflecting, in which the main aim is to bring about change and to monitor the results once an issue that requires attention has been identified (Hussey & Hussey, 1997). Action research varies in its application in different settings, but there are three underlying recurring themes (Saunders, Lewis, & Thornhill, 2003). First, an emphasis on the management of change. Second, the researchers are involved in both the change management and the research itself. Third, there is a transfer of knowledge; that is, the findings of the researcher can potentially be applied in other contexts or used to assist in solving future problems.

The framework for this paper is shown in figure 1. Initially the push to explicitly incorporate the mastery of graduate attributes came from external bodies. Once the initial seeds were sown, Swinburne University of Technology developed its Flexible Learning and Teaching Strategic Development Plan (FLTSDP) which incorporated the skills, knowledge, and attitudes desirable in the graduates of the university (Swinburne University of Technology, 2002). In addition the reaccreditation cycle meant that it

was time to carefully consider the content and outcomes of the Bachelor of Business. These events led the researchers to consider how the development of the graduate attributes could be incorporated into existing School of Business (SOB) subjects, and how they could be clearly communicated. This paper provides details of this process.

The final component of action research involves reflection. To this end, the paper concludes with some thoughts and suggestions on the incorporation of graduate attributes into undergraduate courses.

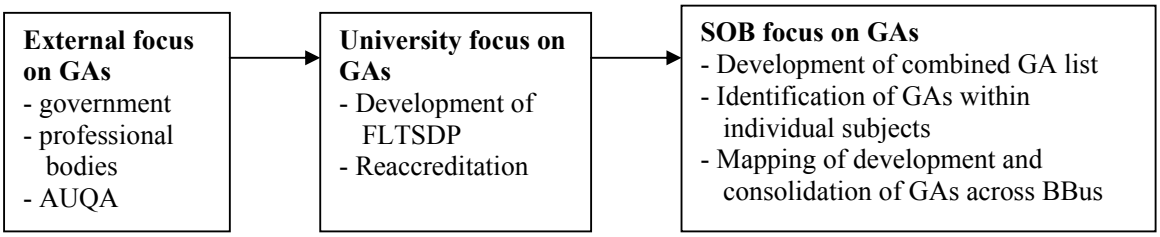

Figure 1. Framework for incorporation of Graduate Attributes (GAs).

EXTERNAL FORCES

In the early 1990s two government reports drew attention to the need for universities to promote the concepts of lifelong learning. These were *Priorities for Reform in Higher Education* (Aulich, 1990), and *Achieving Quality* (Higher Education Council, 1992). According to the Higher Education Council (1992), university graduates are not only expected to display appropriate skills suitable for professional employment, they are also expected to display lifelong learning skills, an interest in knowledge and learning, a capacity to recognize the limitations of their own learning, a capacity to value diversity, and an awareness of professional ethics and integrity (p. 27). As part of the university's preparation for AUQA in 2002, the five key graduate attributes developed through the FLTSDP (discussed under "Internal Forces") were expanded and supported by detailed characteristics (Tomlinson, 2002).

The Institute of Chartered Accountants (ICAA) and Certified Practicing Accountants Australia (CPAA) jointly require schools of business to provide an annual response on the "Core Curriculum Matrix" which requires the identification and location of key generic skills addressed in the curricula (CPA Australia and Institute of Chartered Accountants in Australia, 1996). The accounting bodies have most recently reaccredited the Bachelor of Business at Swinburne University in 2002. Whilst the professional associations have developed their own list of competency standards to ensure that graduates in their association have at least a minimum technical level of competence, the responsibility has remained with the university as to how these are developed. What has been important in balancing the professional/employer demands with the "fitness of purpose" of the student has been the need to have clear educational objectives, alignment between the content and the purpose of the award, and a commitment to assessment that is fair and linked to the objectives and purpose.

INTERNAL FORCES

Early strategic-development plans for Swinburne University of Technology were developed relating to entrepreneurship, globalization, research, teaching and learning, and the inter-sectoral advantage. Recommendations for including "student generic skills" started to emerge in documents within the university during the 1990s but were more formalized and linked to the university strategic plans during early 2000. The FLTSDP was developed in 2001 by the deputy vice chancellor (DVC) – teaching and learning with assistance and advice from Learning & Teaching Support (LTS) at the request of the vice chancellor. This plan arose from the commitment to a flexible provision of higher education; an emphasis on learner-centred, interactive approaches to learning; and the need to define expected graduate attributes of Swinburne graduates.

In 2002, strategic initiatives funds were provided by the university's chancellery to establish the Educational Development Coordination Committee to coordinate the FLTSDP, convened by the DVC – teaching and

learning, and serviced by LTS. This committee also included educational development coordinators (EDC) from each school of the university. The group was to provide leadership to implement the vice chancellor's FLTSDP. Part of the brief was to map programs against the "Swinburne Graduates Attributes". These attributes were summarized under five main themes: that graduates,

- are capable in their chosen professional, vocational or study areas;
- contribute in an entrepreneurial and innovative way within their business, workplace, or community;
- operate effectively and ethically in work and community situations;
- are adaptable and manage change;
- are aware of local and international environment in which they will be contributing (e.g., socio-cultural, economic, natural) (Swinburne University of Technology, 2002).

As these attributes were quite broad, a list of indicative characteristics was developed to elaborate each theme (see appendix 1 for details).

The intention was that the graduate attributes would be fostered not only by what material is taught, but by how it is taught. Academic professional development was offered to academic staff, in the form of informal workshops and sessions, and later more formally, with the development and offering of an accredited Graduate Certificate in Teaching in Higher Education, in 2002.

INCORPORATING GRADUATE ATTRIBUTES: THE SOB EXPERIENCE

The seeds were sown in 1995 when two academics from the SOB attended the First Pacific Rim Conference: First Year in Higher Education, where the importance and critical nature of the first year experience was the focus. The Review of First Year Working Party was created in early 2000, and worked together for about a year to understand the strengths and weaknesses of the first-year program and to recommend improvements. The next few months were spent on coming to some consensus on the generic skills that should be addressed, and then conducting an audit of first-year subjects to see if and where they were being addressed in the curricula. It was found that all generic skills identified were being fostered, some in more than one subject. In addition, it was revealed that students were not expected to have developed proficiency in all of the skills identified during their first year of studies.

Whilst undertaking this project the authors considered the difference between generic skills and graduate attributes and decided that the former are the skills that students develop whilst undertaking their studies, which lead to graduands possessing certain attributes, once they have completed their undergraduate studies. This distinction is important, particularly when considering how individuals develop certain attributes, and was first developed, in the early 2000s, and later published by Tempone and Martin (2003).

The external and internal forces developed momentum by the early 2000s and created the impetus for schools to consider how graduate attributes were developed and to record this in a way that was clearly understood by all stakeholders – both internal and external to the university. In many cases schools already had "generic skills" stated in their accreditation documents and subject outlines, as identified by their professional associations. It was now time for these to be aligned to the university's graduate attributes. While some schools began to customize the university graduate attributes in very specific terms to their professional "generic skills" for their disciplines, in the case of the SOB it was decided to leave the university graduate attributes in their present form, but align the professional association generic skills closely to the broad university ones.

A choice was made that it would be more realistic and appropriate to work with convenors at the subject level rather than with discipline section heads at the discipline level. Modification was made to a template which the Educational Development Advisor (EDA) in another school had developed in preparation for Institute of Engineers Australia (IEAust) reaccreditation purposes in which the Swinburne and IEAust graduate attributes were mapped. The SOB EDC and EDA refined this document to align CPAA/ICAA graduate attributes with Swinburne's five graduate attributes. This template was presented by the EDC and EDA to each academic discipline (see appendix 1). The EDA then met individually with each convenor to explicitly identify the learning objectives and

to relate the learning activities and assessments with these learning objectives for each subject. Modified subject outlines then became more learner centred and provided a forum for discourse about the value of learning activities, and the validity of assessment choices, and provided an avenue for reflection on the purpose of chosen teaching methods. While time consuming for both convenors and the EDA, academics usually were appreciative of the opportunity to review subject outlines, identify and explicitly state expected learning objectives, and to determine the subject's contribution to building the graduate attributes. Finally, a judgement was made about the level of attainment of each graduate attribute within the subject. A realization was made that not all graduate attributes needed to be present in each subject, but combined, across the degree, all should be covered. A matrix was then developed which mapped these across the Bachelor of Business (see appendix 2) with the objective of identifying any gaps. (This activity was noted by the external chair of the reaccreditation committee, an adjunct professor from another university in metropolitan Melbourne, as a particularly innovative and worthwhile activity, one that is not just paying lip-service to the current demand for inclusion of graduate attributes in reaccreditation documentation. The reaccreditation panel made particular mention of the role of the EDC and EDA in the reaccreditation process; in particular in relation to the development and inclusion of graduate attributes.)

SUCCESSES

The process of aligning the university's graduate attributes with those expected by external bodies, and then identifying where such skills are fostered and developed, has been a lengthy yet rewarding process with several successes achieved along the way. First, this exercise ensured a pedagogical change to a learner-centred approach to teaching and learning methods via the inclusion of active learning strategies, as well as learning-objectives-driven approaches to assessment. This occasionally required a review of the assessment types and changes to approaches to ensure assessment tasks were directly related to learning requirements. The intensive one-to-one sessions between the EDA and convenors allowed academics to explore and reflect on past practices and, in some cases, to review their own teaching philosophies.

In one case, as part of the reflection process, academic staff realized that some subject prerequisites needed to be reviewed as it was identified that some of the basic learning prerequisites were missing in the early subjects – with this resulting in a high drop-out rate. The process of identifying the graduate attributes by subject highlighted the weakness and has been the catalyst for a total review and restructure of the major.

Second, the review helped academics to develop a better understanding of graduate attributes, and to identify where students developed and built skills and knowledge related to graduate attributes and lifelong learning as opposed to content-specific knowledge. However, there is no guarantee that all students will possess the desired skills on graduation, although it is reassuring to know that if students apply themselves they will have the opportunity to learn and practice lifelong learning skills throughout their undergraduate course.

CONCLUSION

Opportunities to build graduate attributes must be integrated into the learning experiences of students. Learning activities should be designed and facilitated by academics to enhance these attributes and therefore, this needs to be explicitly communicated within the subject outline. It was found by the authors to be more effective to incorporate these changes at the subject level, rather than the course level, for established degree courses. The authors are mindful, however, of the importance of mapping these graduate attributes at the course level, as a way of making sure all attributes are adequately covered.

When making these attributes more explicit in their curriculum documentation, academic staff seemed to be more receptive of support from educational specialists from LTS than when support was offered from within the School. This is consistent with the findings of de la Harpe and Radloff (2000). An ad hoc approach to including graduate attributes into a degree program, led by enthusiasts, is likely to produce patchy results. Although earlier attempts had been made to specifically incorporate generic skills into subject outlines, it was not until faced with reaccreditation that the process was formalised and undertaken. The importance of management support to ensure academic "buy-in" when seeking to incorporate graduate

attributes into existing courses is noted by Zuber-Skerritt (1992) and Auger (1998). The authors concur and believe that there needs to be a coordinated approach led by authorised experts and supported by senior management to ensure a consistent inventory of graduate attributes throughout an academic program and to show how these skills can be fostered and developed over time.

Developing a list of graduate attributes and having them made explicit at the subject level, and being given opportunities to develop these within the learning program, does not guarantee that students will be automatically achieve all these attributes and be adequately equipped for employment or lifelong learning. There is no minimum level set regarding attainment, and many skills cannot easily be assessed, nor may be evident immediately. Graduate attributes provide a useful roadmap for the purposeful development of suitably skilled and employable graduates. At best, the majority of graduates should be equipped with most of the required skills that they will need to be adaptable, professional, and able to take on lifelong learning. This is a vast improvement to the situation of having a few "motherhood" statements exist somewhere on a university website, that no one either can find or pay attention to. Thus, although the debate about ill-prepared graduates who are not equipped for the demands of the workforce may linger, this process at least has attempted to address this issue.

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APPENDIX 1
Generic Skills/Graduate Attribute Audit by Subject
(Note: numbering against CPA generic skills has been added by the authors)

Subject:	Convenor:	Date:

1. Graduates are capable in their chosen professional areas.

CPA generic skills	Tick if applies	Learning objectives to be achieved	Assessment or learning activity used	Specific attribute or skill contribution
identify, find, evaluate, organise and manage information and evidence (2.1)				
Know what questions to ask (3.5)				
Apply disciplinary and multi-disciplinary perspectives (3.9)				
appreciate processes of professional adaption and behaviour (3.10)				
SUT graduate attribute:				
are informed and knowledgeable in the area				
have an appreciation of areas of uncertainty within a body of knowledge				
have the ability to engage in informed critical inquiry				
have pertinent skills and abilities				
display attitudes appropriate to the professional area				
have a sense of social responsibility for knowledge and its application				
understand the relationship between theory and practice				

[A similar table was developed for each of the five Swinburne Graduate Attributes and the corresponding generic skills as specified by the CPA. The contents of the first column of the table have been reproduced on the following page.]

2. Graduates operate effectively in work and community situations.
CPA generic skills
listen effectively (5.1); present, discuss and defend views (5.2); transfer and receive knowledge (5.1); negotiate with people from different backgrounds and with different value systems (5.3); understand group dynamics (5.4); collaborate with colleagues (5.5); to think and act independently (4.4); report writing (1.1); computer literacy (1.2)
SUT graduate attribute:
have the ability to work both independently and collaboratively
have the ability to effectively communicate using a range of media and in varied contexts
have the ability to operate locally, nationally and internationally.

3. Graduates are adaptable and manage change.
CPA generic skills
identify, find, evaluate, organise and manage information and evidence (2.1); initiate and conduct research (2.2); analyse, reason logically, conceptualise issues (2.3); solve problems and construct arguments (2.4); interpret data and reports (2.5); engage in ethical reasoning (2.6); receive, evaluate and

react to new ideas (3.1); adapt and respond positively to challenges (3.2); engage in lifelong learning (3.6); flexibility in new/different situations (4.2); tolerate ambiguity (4.6)

SUT graduate attribute:

are self-motivated
have multifaceted research and problem solving skills
have a general capacity for flexibility and curiosity

4. Graduates are aware of environments.

CPA generic skills

listen effectively (5.1); present, discuss and defend views (5.2); transfer and receive knowledge (5.1); negotiate with people from different backgrounds and with different value systems (5.3); understand group dynamics (5.4); collaborate with colleagues (5.5); appreciate ethical dimensions of situations (3.8); a commitment to think and behave ethically (4.1); make judgements derived from one's own value framework (3.3)

SUT graduate attribute:

have a broad understanding of the role of technology in our society
are culturally sensitive and have respect for multiple points of view
are able to evaluate the economic, social and environmental impact of their decisions
are able to make a balanced decision taking into account all of these factors
respect a plurality of viewpoints

5. Graduates are entrepreneurial.

CPA generic skills

to act strategically (4.3); to be focussed on outcomes (4.5); think creatively (4.7); flexibility in new/different situations (4.2); think and act critically (3.4); recognize own strengths and limitations (3.7)

SUT graduate attribute:

have the ability to critically understand innovations and developments
have the ability to make links and connections between developments and opportunities within/across diverse environments
have the ability to identify and realize opportunities for responsible innovation
have an aptitude for calculated, socially responsible risk-taking
have the ability to deal with success and failure through informed critique and self-reflection

APPENDIX 2

Core Graduate Attributes Matrix by Course

NA - not applicable B – beginning C – consolidating E - established

Using the matrix below indicate where graduate attributes are consciously taught. Note that not all subjects need necessarily incorporate each of the graduate attributes. To complete this matrix, look over how each area is rated and make a value judgment as to what you see as the contribution your subject makes to the overall course.

Graduate Attributes (*CPA - Generic Skills*) Graduates will …					
Subjects that make up the Bachelor of Business	**Capable in their chosen professional areas** *3 Appreciative skills* *2. Analytic/ design skills*	**Operate effectively in work and community situations** *5. Inter-personal skills* *4. Personal skills* *1. Routine skills*	**Adaptable and manage change** *2. Analytic/design skills* *3 Appreciative skills* *4. Personal skills*	**Aware of environments** *5. Inter-personal skills* *3 Appreciative skills* *4. Personal skills*	**Are entrepreneurial** *4. Personal skills* *3 Appreciative skills*
Subject 1					
Subject 2					
Subject 3					

WORKING (IN) FORMATION: CONCEPTUALIZING INFORMATION LITERACY IN THE WORKPLACE

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ABSTRACT

Workplace information practices of fire fighters are conceptualised through an exploration of how fire fighters use information from a range of textual and non-textual sources so that this information becomes embodied within the discourse of practice. The role of the collective in shaping and influencing information practices is also explored.

INTRODUCTION

Current thinking about information literacy has been influenced by over 30 years of research and practice by librarians in educational sectors. In this sector, information literacy practice is organized around librarians' understanding of textual and digital works as primary access points to sites of knowledge. This paradigm assumes that information literacy is largely a systematic, objective, and unproblematic process of skills acquisition that enables information discovery. In this context the skills of information literacy are assumed to be generic and therefore easily transferable from an educational context into other contexts such as workplaces (Lloyd, 2003).

This paradigm of information literacy has made a valuable contribution to our emerging understanding and conceptualisation of the phenomenon as a critical underpinning of learning in the educational sector. At the same time, current thinking marginalizes our conceptualisation of an information literate person and the information literacy process. It does this by listing attributes and behaviours, which reflect desirable outcomes of the educational discourse, but may not necessarily reflect required outcomes in other sectors.

If information literacy is to be considered an important aspect of effective workplace learning then it is critical to explore and understand information literacy practice within a range of workplaces. Outside the education sector the attributes of an information literate person, and the process of becoming information literate, may differ according to the nature of information access and the complexity of working with others. Within the workplace, the ability to become information literate is often unpredictable and can be affected and mediated by social relationships.

The research reported here has been undertaken with a cohort of fire fighters employed and trained by the NSW Fire Brigades. The fire station is located in regional NSW, and is manned by permanent fire fighters. The research explores the nature of information activity within this workplace. Two important themes have emerged. The first is the nature of information literacy practice and the need (for fire fighters) to construct information practices that are specific to their profession. These practices enable interaction with information from social, corporeal, and textual sites of knowledge that constitutes the fire fighters' information landscape. The second theme to emerge is the role that others within the community of practice play in mediating, affording, and interpreting access to information.

CURRENT THINKING ABOUT INFORMATION LITERACY

An analysis of definitions published over the last thirty years indicates that research to date has focused on defining information literacy as a process of skill acquisition within educational and information and communications technology (ICT) domains, rather than conceptualising what it means to be information literate; Bruce (1996) is a notable exception.

Rader's (2002) recent review of information literacy publications supports the identification of information literacy as predominately located in the library and educational discourses. Virkus' (2003) comprehensive review of European research into the phenomenon also confirms that information literacy predominates

in the discourse of the educational sector but is largely absent in workplace research.

Webber and Johnston (2000) suggest that the majority of information literacy definitions share common elements, such as information seeking, informed choice of information sources, evaluation, and selection. The view of information literacy as a set of processes, skills, or behaviours that fit all, and which once learnt are easily transferable into other contexts, has similarities with the autonomous view of literacy. This view assumes that once a defined set of skills are learnt they will fit a person as he or she moves into the complex and diverse world of the workplace (Searle 2003). However, information literacy as a transferable skill must be questioned when viewed in the context of transfer studies. Misko's (1998)study on transfer of skills, concluded that "there is no guarantee that being able to perform a skill in one context always means being able to transfer the skill to another context" (p. 298). Anderson, Reder, and Simon (1996) conclude that transfer is determined by the similarities between contexts in which the skills or competencies are practiced and the "number of symbolic components which are shared" (p. 6).

Similar conclusions can be made when examining the current research into information literacy. At present, information literacy practice privileges the educational sector which focuses on textual and digital works as access points to sites of knowledge. Consequently, the broader (and more diverse) contexts, of the workplace, and the range of information practices within these contexts are not considered. This is especially true of non-textual information practices (e.g., the use of the body or others as information sources) which often inform practice within a workplace. Nor does the present account, acknowledge the workplace as "contested terrain" (Billett, 2002, p.7) which may make access to information, and the ability to become information literate, problematic.

The present information literacy paradigm produces a one-dimensional effect. It does this by standardising our thinking about what information literacy is outside the tertiary and secondary educational sectors, how information literacy process is manifested in workplaces, and how the process is affected and mediated by non-textual relationships that constitute the workplace as a social space.

RESEARCH APPROACH

This paper is derived from current doctoral research, which is a qualitative exploration of what it means to be information literate in a workplace, and how information literacy manifests itself within a workplace. The overall research approach is that of holistic exploration in which information literacy is envisioned as an important scaffold that supports workplace learning. The research method employs a constructivist-influenced ground-theory method, which aims at building a substantiative theory from the ground up (Charmaz, 2003).

The study had two fieldwork phases consisting of interviews and observation. Phase 1 identified themes and issues of importance within the research agenda. Phase 2 aims at enriching the themes and perspectives that emerged from the Phase1 analysis. Throughout the fieldwork and analysis phases, participants were consulted about the developing interpretations. They were asked to comment on transcripts and the draft analysis chapters. This served as a useful form of member checking to ensure the trustworthiness of the analysis.

INTERPRETING THE CONTEXT

The analysis of the data collection phases indicates that engagement with information is viewed by fire fighters as a collective activity, which enables the mutual construction of safety concepts and practices. This construction is critical for the platoon (team members) who must rely on each other in times of risk or danger.

In the early stages of a fire fighter's career this construction is shaped by others who mediate the information experience, afford opportunities to access information (e.g., through work related activities (Billett, 2001) and interpret information for new members (through storytelling and deconstructing events). The primary aim of these mediating activities is to ensure the safety of the platoon. The power relationship, which is formed around access to information, is materially constituted through the actions of experts who control access to information in the early stages of a new member's working life in order to maintain safety.

Within the fire station other members of the platoon recognize experts by their awareness

and deep understanding of how information is located and accessed and by their ability act as credible information sources to others. Becoming an expert occurs over time through the coupling of information from a varied range of information sources specific to the workspace and through information which is gained via the physical experiences of fire fighting**.** Within a fire station, sites of knowledge are located within the tacit knowledge of the collective and through the physical experiences of the body, and represented in textual form. Based on this analysis, information literacy can be conceptualised in the following way:

Information literacy as intersubjective practice

The present conceptions of information literacy do not take into account the role of interpersonal relationships in creating access to information which enables a novice to engage in the discourse of the profession. Nor do current conceptions recognize the significant role of others in mediating information or affording information opportunities.

Within the workplace, information literacy has an affective dimension. Developing a relationship with information and others as information sources becomes a complex dialogue because of interpersonal dynamics that may see access to information become a contested practice. In this respect, becoming information literate within a community of practice such as a fire fighting platoon is a collective accomplishment, in which members' access and use information to develop a mutual understanding about the profession and practices of fire fighting. The development of an intersubjective view is critical to fire fighters who must rely on each other in times of risk or danger**.**

Recognition of the holistic nature of information literacy practice

In workplaces, information access is not just a textual practice. Learning about the practice of fire fighting requires new recruits to recognize information, which is drawn from lived experience, and the actioned body as an important information source and site of knowledge. Information drawn from this source often conflicts with information from textual sites. As a source of information, the "body" has been ignored in the conceptualisation of information literacy. This is not surprising as Beckett and Hager (2002) have also reported that the body has largely been removed from the educational discourse, in particular ICT and flexible delivery.

Information literacy as transformative process

Learning the appropriate information skills to access workplace information enable the emerging practitioner to become embodied (by information) within the discourse of the workplace. As a transformative process, information literacy enables the transition from novice to expert and is therefore closely tied to workplace learning.

In a workplace context, transformation occurs when predictable information accessed through textual sites is coupled with unpredictable, actioned information from the lived domain. Over time this coupling leads to more complex information use, and results in greater awareness and deeper understanding of the information environment, its access, and use.

HOW DOES INFORMATION LITERACY OCCUR WITHIN A WORKPLACE?

Central to understanding the nature of information literacy within the workplace are the concepts of *information work* and *influence work.* They contribute towards the development of the information literate fire fighter as an effective practitioner, by enabling the construction of group identity, and an understanding of workplace practices which are crucial to fire fighters, not only in times of risk and danger but also in the maintenance and development of fire fighter culture.

Information work is constituted through the development of a range of contextually-relevant information skills which relate to developing an awareness and ability to locate and access organized information available through textual sources, to locate and access information from social sources (other firefighters), and to access information from the body.

Strategies to access organized information are similar to those that underpin the teaching of skills within a library context. However, for fire fighting recruits this remains an abstract practice aimed at becoming aware of the range of information required, and learning the location

and means of access to information within the landscape. Access to information from social sources requires affective decisions to be made about credibility and reliability of others within the community of practice.

Information work is also employed to access non-textual sources of information (i.e., information from actioned experience and the lived experience of others). In this context, information literacy skills take on a different "shape", requiring rehearsal, observation, reflection, and critical thinking in order to couple predicable information from text with unpredictable information from action.

Influence work is constituted through the mediating activities of others within the platoon. Information-related activities afford informal information opportunities through awareness creating, deconstruction of events, guidance, demonstration, and instruction. Expert fire fighters are able to mediate information acquisition through the deconstruction of events, and the interpretation of procedures and practices. Through influence work, experienced fire fighters position new recruits by mediating between the recruit and information. This enables the development of a uniform view of profession and practice, which is critical for working (in)formation in time of risk or danger. As one co-participant explained, "you've got to have a shared view, you've got to look for the same things."

In the transformation from new recruit to embodied practitioner, two key processes were identified.

Embedding: This refers to the positioning and repositioning of the new recruit within the construct of fire fighting. This process occurs formally when the new recruit enters the Fire Brigade Training Centre. During this initial stage new recruits engage with information at an abstract level through access to rules, procedures, and standards of operations. They also engage with information at a physical level. This engagement is managed within the confines of safety legislation and therefore remains predicable and relatively safe. As one co-participant commented, "you can only put out so many bales of hay." At the end of their training recruits have become information literate at an institutional level, but are not considered *real* fire fighters by other members of the profession. Many of the fire fighters interviewed indicated that they considered the real training to begin once they had left the training centre and entered the fire station, where the community of practitioners reposition the recruit through influence work.

Coupling: This process is central in the transition from embedded to embodied practitioner. Coupling is a process of information work in which information accessed from the textual sites, from bodily experience, and from authentic practice and social sites is drawn together, rendering the recruit "in place".

DISCUSSION

Analysing information activity in this specific workplace necessitates developing an understanding of the formal and informal information landscapes that influence the process of becoming information literate. Workplaces are often described in the educational literature as places of informal learning, characterized by the absence of a formal teacher-student relationship. Billett (2001, p. 21) questions this distinction and suggests that workplaces have structures, rules, and procedures that organize the practices of the workplace and where teaching often takes the form of guidance.

Becoming a fire fighter necessitates engagement with information at a formal training level and informal practice-based level. Fire fighters take four years to become qualified and a large component of their formal training is conducted through distance education, once the initial 16 weeks face-to-face training has been completed. Once deployed to a fire station, training is continued and extended through mandatory drills provided by Senior Officers and through the guidance of other platoon members.

The present research indicates that our current conceptions of information literacy do not adequately characterize the meaning of the phenomenon outside the formal educational context. Nor do they account for the broad and complex process of working with information in contexts where access to information about the social and procedural practices of the context is critical and often contested. Further, as the current view of information literacy is mainly defined by educational practices, other sites which are recognized within the context as contributing to information acquisition and which provide opportunities for transformation

are often ignored (i.e., the actioned body, and social sites of knowledge).

Workplaces offer powerful places for transformation through learning, and information literacy plays an important role in this process. The key sources for learning at work have been identified as the activities of work, the workplace, other workers, and the practices of listening and observation (Billett, 1999a). The current research indicates that fire fighters' engagement with these key sources enables access to information from the physical, textual, and social domains of knowledge. By engaging with information work, fire fighters learn to work (in)formation as part of a team. The process is not systematic and involves the use of information strategies and the recognition of information sources, which are not presently recognized, as part of the information literacy paradigm.

For fire fighters the process of transformation is illustrated in the movement from *acting* as a fireman to *being* a fireman. Engaging with information from the range of contextually-relevant information access points enables the transformation. In the fire station this occurs concurrently with others (as information sources) who afford and mediate information opportunities within the political frameworks of workplace practice. In the process of becoming a fire fighter, novices develop a relationship with information. Their awareness of information sources occurs over time and enables the meaning of practice and profession to be constructed. As one respondent stated, "you have to have time for your mind body and experience to blend as one." The process is shaped by the ability to employ appropriate information work strategies which engage with the talk, texts, and actions of the collective; and to understand the nature of influence work which will enable the transition from novice to expert.

As a workplace, the fire station is characterized by members with varying degrees of educational attainment, and by a complex and diverse range of textual and non-textual information sources. Underpinning this characterization is the concept of safety as the primary objective of all fire fighters. This concept starts with each member of the platoon needing to ensure the team remains safe. Consequently the majority of information work and influence work is focused on attending to and ensuring that all members' access information that relates to safety. This concept of safety was in evidence a number of times by fire fighters who articulated the "rule" or level of importance; "Number one, I'm the most important person. Number two, my crew are second most important 'cause they are here to help'. Number three, are the people standing by, and number four and last are the actual victims, 'cause they are already in trouble'."

For platoons who must work (in)formation and who rely on a uniform understanding to remain safe, becoming information literate is a collective activity. Engaging with information in the process of meaning-creation about the nature of workplace and practice is an intersubjective accomplishment that is initiated through information work and reinforced through influence work. Becoming information literate within the workplace is not an objective individual experience that can be measured (using current information literacy standards) or rationalized in terms of identified outcomes, because the focus remains on the subjective experience of the individual, rather than how the team collectively influences and directs the process for the recruit. Becoming information literate in the workplace relies on the application of information work and influence work, which enable access to the constructions of the community of practice. As one fire fighter explained, "you know you're not an island, you're not Robinson Crusoe."

Expert fire fighters demonstrate their information literate status by their deep awareness of the range of sites of knowledge production within the discourses of fire fighting. They move fluently through these sites drawing and connecting information by the integration and construction of frameworks for understanding the meaning of community, danger, and risk. In the process of developing fluency, fire fighters also piece together a framework in which the meaning of their practice as professionals is embedded. Through engagement with information access from sites of sensory, textual, and socially-distributed information, the individual becomes embodied and comes to know the workplace, its practices, and its tensions.

Based on this research the following definition of an information literate person is now offered:

An information literate person has a deep awareness, connection, and fluency with the

information environment. Information literate people are engaged, enabled, enriched, and embodied by social, procedural, and physical information that constitutes an information universe. Information literacy is a way of knowing that universe.

Embodiment is not an absolute, it is a gradual and incremental process of information awareness and synthesis, a sense of "self" constituted through the interaction of the individual with the social, corporeal, and textual information environments over time. Novices who enter the training centre emerge embedded in the textual domain. Through this domain they have access to information, which enables them to work at an abstract level. They understand rule-oriented procedure, and its application and consequences. In coupling training with physical actions of drills and rehearsal, emerging practitioners are able to draw information from the body that may be actioned automatically in order to keep them safe in their first few months within a fire station.

Rather than being exclusively text-based, workplace information literacy is also dependent on the social interactions of the workplace, which are important for the creation of intersubjective responses. The importance of developing collective meaning that relates to place and practice is critical to fire-fighting platoons who rely on each in times of risk or danger. Therefore the primary source of information for recruits becomes experienced practitioners who have a deep awareness, understanding, and shared focus, not only of procedural practice, but also of the social, historical, and political and physical contexts that affect information transmission and acquisition within the workplace.

This approach to thinking about the information literate as embodied and of information literacy as an enabling and engaging process, is dependent on,

- adopting a holistic approach to understanding information literacy within the organic context of the workplace;
- identifying the differences in the way explicit and tacit and social knowledge is distributed within an organization;
- identifying how information is accessed, communicated, and mediated;
- how access is influenced by the social, historical, and political processes that influence the workplace as a social space;
- how the process skills of information literacy become subconsciously and fluently integrated over time into automatic practice (embodied).

CONCLUSION

The present research is a study of workplace information literacy in one context at a particular point in time. Much more work is required in the area in order to fully conceptualise workplace information literacy. Through exploring how information relationships and information practices are constructed through *information work* and afforded and mediated through *influence work*, it becomes possible to determine the meaning and shape of workplace information literacy. This places those who have an interest in understanding, developing and delivering information literacy education, in a better position to develop appropriate strategies that will acknowledge the complexity and specificity of information in the workplace. This in turn will contribute to the development of information literacy skills that meet the needs of the workplace and enable greater transfer of information literacy skills in the transition from education to work.

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LEARNING DOESN'T HAPPEN ONLY IN THE CLASSROOM: TECHNOLOGY-ASSISTED INFORMAL AND FORMAL LEARNING

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ABSTRACT

The policies and debates on lifelong learning tend to focus on the economic and societal benefits of formal education and training programs (Dawkins 1988; Kemp 1998; Nelson 2003). Informal learning is rarely mentioned, yet it is increasingly seen as an important skill in the workplace (Leslie, Aring & Brand, 1998; Boud & Middleton, 2003). This paper explores the concepts of formal and informal learning and how technology can be used to assist both types of learning to contribute to effective and meaningful lifelong learning. It concludes with a discussion of the responsibilities of academics and higher-education institutions to assist their students to develop lifelong learning skills.

INTRODUCTION

Historically, formal learning is linked with a structured, graded education system – provided and accredited by schools, universities, and technical colleges. Informal learning is linked with daily experience and the environment through interactions with people (friends, family, work colleagues, and neighbours), through the influences of the mass media, and through reading and thinking. In Australia, federal government policies focus on the economic and societal benefits of formal education and training programs (Dawkins 1988; Kemp 1998; Nelson 2003). The documents that specify these policies rarely mention informal learning though it is considered to be an important skill in the workplace (Leslie et al., 1998; Boud & Middleton, 2003).

The central theme of this paper is to describe how technology can be utilized to assist both formal and informal learning to contribute to effective and meaningful lifelong learning. In some cases the use of technology hinders the attainment of formal and informal learning; in other cases technology facilitates, and is indispensable to, that attainment. Both these scenarios will be explored using examples from a current doctoral study of the use of interactive video-conferencing for teaching and learning at an Australian regional university.

This paper concludes with a discussion of the responsibilities of academics and higher-education institutions in providing opportunities to encourage both types of learning – which are equally significant in fostering lifelong learning – in their classes.

Before beginning the discussion I will describe what I mean by the concepts of "lifelong learning", "formal learning" and "informal learning" as I intend to use them in this paper.

LIFELONG LEARNING

I have always felt that lifelong learning begins in the womb and ends on one's deathbed. All of us are learning all the time just through living and interacting with people, the media, and the environment. That is common sense to me. Recently I have begun to realise that there is much more to the concept of lifelong learning

than an individual's ability to learn from his or her daily experiences. In the words of McKenzie (2003), "lifelong learning is a core strategy for moving to a knowledge society, and ensuring that the benefits are equitably distributed" (p. 80).

The education policy mantra of the 21st century is "lifelong learning". Globally, the Organization for Economic Cooperation and Development (OECD) (Delors 1996; McKenzie 2003) and UNESCO (UNESCO, 1998) have emphasised the need for lifelong learning in higher education. Locally, the recent West committee report (West, 1998) also incorporated lifelong learning as the foundation of its report into higher education in Australia.

A difficulty with discussing lifelong learning is the lack of a universally accepted definition of the term. In her recent report on *Lifelong learning in Australia,* Watson (2003) states that "lifelong learning is…used by many different people in many different contexts" (p. 2). For that reason I will define the concept of lifelong learning as I am using it in this paper. I have found that the Delors (1996) report provides a useful way to think about lifelong learning. It describes a broad concept "of an education pursued throughout life, with all its advantages in terms of flexibility, diversity and availability at different times and in different places" (p. 19). In support of 'lifelong learning for all' the OECD (1996) make a case that universal participation is necessary for achieving the economic demands of the 21st century. The definition of the "concept of universal participation includes both formal and informal learning for all purposes – social, economic and personal" (Watson 2003, p. 5).

In arguing for the necessity of universal participation in lifelong learning the Delors (1996) report describes four pillars of education for a learning society:

> learning to know; learning to do; learning to live together and with others; and learning to be. (pp. 20-21)

These pillars will be explored in more detail later in the paper. I will now define what I mean when I use the terms formal and informal learning.

FORMAL AND INFORMAL LEARNING

An influential categorization of learning systems is that of "formal education", "informal education", and "non-formal education". A well-known definition comes from the work of Coombs with Prosser and Ahmed as cited in (Smith 2001):

> *Formal education*: the hierarchically structured, chronologically graded 'education system', running from primary school through the university and including, in addition to general academic studies, a variety of specialised programmes and institutions for full-time technical and professional training.
>
> *Non-formal education*: any organised educational activity outside the established formal system - whether operating separately or as an important feature of some broader activity - that is intended to serve identifiable learning clienteles and learning objectives.
>
> *Informal education*: the truly lifelong process whereby every individual acquires attitudes, values, skills and knowledge from daily experience and the educative influences and resources in his or her environment - from family and neighbours, from work and play, from the market place, the library and the mass media. (pp. 2-3)

The difference between these three terms is mainly administrative. Formal education is associated with universities, schools, and technical and further education colleges (TAFE); non-formal education with training academies and other community-based organizations; and informal education covers what is left, such as interactions with friends, family, and work colleagues. The divisions between these categories are blurred and often overlap (Smith, 2001). In particular, there is overlap between informal and non-formal education.

In this paper I will refer to formal and informal education only as those terms are defined above. I am going to focus on the opportunities for informal learning that exist or can be created within formal education programs in a university setting.

Some authors regret that the emphasis on formal learning (learning that can be certified) has led to a decline in informal learning and that we may be in danger of encouraging the development of a "certified society" at the expense of the development of a learning society (Gorard, Fevre, & Reeves. 1999).

What follows is a discussion of how technology could be used to assist the development of informal learning opportunities in a formal program within a higher-education setting in Australia.

TECHNOLOGY AND FORMAL AND INFORMAL LEARNING

This section gives examples of how the use of technology can hinder or assist the attainment of formal and informal learning. Examples from a current study of the use of interactive video-conferencing for teaching and learning at an Australian regional university will be discussed. I will begin with a description of a personal experience with formal and informal learning.

When I was a full-time undergraduate student in the late 1970s my formal learning consisted of lectures in huge tiered theatres, with the lecturer standing at the front facing hundreds of students. The dominant educational technology was a blackboard. Occasionally there was an overhead projector in the room. Tutorials were held with smaller groups (20-30 students) in small rooms. A post-graduate student usually conducted the tutorials and, again, a blackboard was the main educational technology. The size of my class was intimidating and I remember that I learnt a lot from my friends when I was at university. I lived on campus in a residential college which meant that I was surrounded by people to whom I could turn for advice. Being a full-time student with no responsibilities except looking after myself meant that I could spend many hours talking to my friends and fellow students about my study. Because of shyness and fear of showing my ignorance I was much more likely to approach other students and ask them a question than I was to ask the lecturer or tutor. This informal learning (not that I called it that at the time) was very valuable to me in that it helped me to progress in my formal learning as well as in my chosen career.
Lecturing at a regional, multi-campus university early in the 21st century is quite different from my own experiences as an undergraduate student. Most of my students (more than 80 percent) are enrolled at the campuses other than my home campus, or are enrolled as external students, that is, they study by distance education using printed materials produced by the university.

In its large classrooms[1] the university has a number of educational technologies such as

- whiteboards and/or blackboards,
- overhead projectors,
- video players,
- tape players.

These are all used to facilitate the formal learning of the internal students. The technology is more sophisticated than it was in my day as an undergraduate but the internal students still rely on informal learning opportunities such as talking to their fellow students.

The university uses a number of educational technologies to facilitate formal and informal learning in students who are not located on the same campus as the lecturer. These include (but are not limited to)

- online learning using the World Wide Web (WWW) and , other features of the Internet,
- interactive video-conferencing,
- distance education materials,
- video-streaming,
- teleconferencing,
- CD-ROMs.

Most lecturers would not use all the available educational technologies when teaching one course. What they use would depend on their experience, what is available to them and their students, and the discipline area and content of the course they are teaching. These educational technologies have become part of the toolkit of technologies available to staff to assist in the delivery of their course-work material and/or lecture materials.

I will use the interactive video-conferencing (IVC) facilities to describe how a particular type of educational technology can assist and/or hinder formal and informal learning. The interactive video-conferencing facility was set up in the mid-1990s using two federal

[1] I am using the term classroom to describe the physical space used for teaching face-to-face classes.

government grants (Luck, 2004). There are purpose-built rooms at the Bundaberg, Emerald, Gladstone, Rockhampton, and Mackay campuses of the university that each contain videoconferencing equipment (cameras, microphones, etc.). These rooms are linked together using Telstra ISDN lines and microwave links. Since 1997, these facilities have been used to allow students at the Bundaberg, Emerald, Gladstone, and Mackay campuses to complete their degree at their home campus. Prior to 1997, students could only complete first year at these campuses. To finish their degree at CQU they either had to move to Rockhampton or enrol as external students (Wilson, 1995). For that reason the IVC facilities can be viewed as a technology that assisted with the formal learning of these students. Some lecturers used this technology very successfully in formal learning programs (Rowan, 2000).

On the other hand, the IVC facilities also hindered formal learning in that some students did not like participating in their lectures using IVC (Connor, Jones, McKavanagh, & Wallace, 1997). Some of these students opted out of the IVC classes by choosing to study externally, to move to Rockhampton, to move to another university (usually in South-East Queensland) or to withdraw from their program. A major factor in the students' dissatisfaction with the IVC classes was that lecturers did not adjust their teaching to the environment (Luck, 1999). One major advantage of the IVC facilities is that they support interactive discussions amongst students and staff across all the campuses. There are some lecturers who have a very didactic teaching style, which they continue to use when teaching with the IVC. The monotonous nature of a didactic lecture is magnified using IVC, because the students have to watch the lecture on a small television monitor. This makes it difficult for them to maintain concentration – especially if people in the room start to talk.

The IVC facilities also provided opportunities for informal learning. Students were able to see and hear other students at the other campuses. Prior to the use of IVC for teaching across campuses, the students at campuses other than Rockhampton would have interacted only with the lecturer, not with the students in Rockhampton[2]. Some staff have built informal student interaction into their curriculum. In an accounting course students were encouraged to form companies where the members were located across three or four campuses. These students held meetings using the IVC facilities and have used these opportunities to share their ideas and experiences. There are some lecturers who require students to work in groups across the various campuses. These students use email, telephones, and IVC to communicate with each other in order to complete their assessment tasks. These communications also involve sharing of personal information and experience, and some students have continued to contact each other after the material to be assessed has been submitted[3].

Though the IVC has been used to foster informal learning it also may inhibit informal learning. For example, it is very difficult for a student located at a different campus to the lecturer to ask questions or to have informal discussions with the lecturer. The students have to use a microphone to speak to the lecturer, which means that the whole class across all the campuses can also hear the conversation. The timing of IVC classes also obstructs discussion. The IVC rooms are in constant use and the lecturers cannot get into the rooms until moments before their classes start; when the lecture time is over the links between campuses are automatically shut down and the lecturers have to vacate the room to allow the next class to move into the room[4].

To encourage more opportunities for educational technologies to improve the opportunities and experiences of formal and informal learning, it would help if staff were encouraged to participate in training in the use of the educational technologies. Ideally this training would demonstrate the advantages and disadvantages of all the educational technologies available to staff at their institution, and then assist staff members to design their lessons to take advantage of the educational technologies they chose to use in their teaching. The next section discusses the responsibilities of

[2] Initially the IVC facilities were designed and used in a model where the lectures originated from the Rockhampton campus and were broadcast to the regional campuses of Bundaberg, Emerald, Gladstone and Mackay. Over time this model has changed and the lectures can and do originate from all campuses.

[3] These examples are taken from discussions I had with lecturers during the collection of data for my doctoral research.

[4] These examples are from observations I made when teaching using the IVC facilities.

academics and their higher-education institutions in encouraging and supporting formal and informal learning using educational technologies.

RESPONSIBILITIES OF ACADEMICS AND HIGHER-EDUCATION INSTITUTIONS

I believe it is the responsibility of academics and higher education institutions to assist students to develop and improve their lifelong learning skills in order to help individuals to achieve their life goals as well as to encourage the development of a learning society. I will discuss these responsibilities using the four pillars of education for a learning society as described by Delors (1996).

The first pillar is "learning to know", that is, the mastery of learning tools and skills such as developing one's concentration, memory skills, and ability to think. Giving didactic lectures to students where the students are not engaged in this learning does not develop these skills. Use of technology can assist in developing learning skills. By building interactive activities into the curriculum and encouraging the students to use the technology to interact with their colleagues and the lecturers will encourage the students to think more about the content of the classes.

The second pillar is "learning to do" which is the acquisition and application of skills to equip people to do the types of work needed in the future. Given that work in the 21st century has a global nature, the use of technology is essential to assist in the communication between individuals and groups across regions, states, and countries around the world. Building the use of communication technologies into the curriculum to assist in the interaction amongst students and between staff and students has the benefit that the students are learning skills that could later be applied in their workplaces. This informal learning of how to use the technology is a skill that can be adapted to technologies that students may need to use in their careers or life experiences.

The third pillar is "learning to live together and with others". This includes the development of tolerance of other people, understanding and mutual respect of other cultures in order to reduce world violence, and raising awareness of the similarities and interdependence between all people. At our university we have a large number of international students. In 2003 there were 8915 international students, which is approximately 40 percent of the total student enrolment[5]. The bulk of these students are located at the university's international campuses. Encouraging local students to use technology to communicate and work with international students would create an environment where both local and international students could learn more about each other's cultures. This informal learning will assist all students to develop skills that will help them learn to live together and with others.

The final pillar, "learning to be", states that education should contribute to the complete development of a person – mind, body, and spirit. This is the most difficult pillar to address in terms of the responsibilities of academics. Because of the way the timetable is structured (two or three contact hours a week for 12 weeks per course), there is little time or opportunity for academics to assist in the development of a student's body and spirit. This final pillar is really the responsibility of the institution to ensure that the students and staff have time and opportunity to develop their minds, bodies, and spirits while they are part of the university community. This is not an easy task for a regional university that has students spread over 13 campuses and beyond.

I believe that the higher education institutions need to take seriously the need to develop the lifelong learning skills of the students that are part of their community of learners. They need to do this by ensuring their policies and procedures take into account the requirement to build lifelong learning skills into the formal learning and provide opportunities for informal learning. They also need to put in place structures that can assist staff to develop their own lifelong learning skills and assist them to include activities in their courses that help students to develop and practise their lifelong learning skills. In addition, the institution needs to ensure that the educational technologies it utilizes are: easy to use; applicable to the unique needs of the students and staff; well maintained; and that there are staff trainers available to assist the academics to use the technologies.
Given the complex structure of our university with the multiple campuses spread across large distances, the use of advanced communication

[5] Data obtained from CQU planning and analysis unit.

technologies such as interactive video-conferencing is an important tool for facilitating the development of formal and informal learning of our dispersed student population.

CONCLUSION

This paper described the challenges faced by a particular multi-campus, regional, university as it struggles with how to integrate lifelong learning skills into the curriculum. Examples were given using one educational technology – interactive video-conferencing. Though the discussion has focused on a particular technology at a particular institution and how it hinders and assists formal and informal learning the lessons can be transferred to other higher educational institutions.

A theme in this paper has been the importance of informal learning to lifelong learning and how technology can be used to enhance the opportunities for informal learning. Educators must not forget how important it is to assist people to learn to know, to do, to live together and with others, and to develop as a complete person. Educational technologies can be valuable tools in supporting both informal and formal learning.

Ideally the federal government and the universities would work together to achieve the goal of creating a learning society through their policies and by ensuring that adequate funding was provided for the development of both formal and informal lifelong learning in the higher education environment.

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THE ART OF PREACHING: SHOULD WE PRACTISE WHAT WE PREACH OR JUST PREACH LOUDER?

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ABSTRACT

This paper investigates the effectiveness of a peer-assessment innovation within a teacher education program at a regional university in Australia. A qualitative methodology was used for this study. While the majority of students involved in the process agreed in principle with the notion of peer assessment, personal involvement was contested on the grounds of inexperience. Students moved from initial scepticism to a deeper understanding of the possibilities and values inherent in peer assessment.

BACKGROUND TO THE STUDY: WHERE I AM NOW

I speak to you as an early researcher who has just discovered a path through the haze of research methodologies. Using Clandinin and Connolly's personal-experience method (Denzin & Lincoln, 1994, p. 416), I plan to elaborate on a story of formal peer assessment, where university students grade the work of their peers. Throughout this story I use multiple "Is" as I assume the roles of school teacher, lecturer, commentator, research participant, and theory builder (p. 416); and I will be "simultaneously focused in four directions, inward and outward, backward and forward" (p. 417). Clandinin and Connolly define "inward" as the internal conditions of the researcher, the "outward" as the researcher's environment, and the "backward" and "forward" as temporality – past, present, and future. This paper is more than just a report. It shares my reflections on past actions and future directions as an educator and researcher.

Two years ago I was seconded from Education Queensland to work in a regional, Queensland university whose Faculty of Education had undergone a major reformation resulting in the change of the Bachelor of Education program into the Bachelor of Learning Management (BLM) program – a degree whose graduates could demonstrate " a futures' perspective of teaching and learning… expert pedagogy…professional behaviour… maintain learning networks and partnerships…and support for learners to take responsibility for and manage their own learning" (Central Queensland University, 2002, unpaged). An analysis of the components of the BLM degree emphasises this point. Ten standards are stipulated within the four domains of the degree: Networks and Partnerships (1 standard), Futures (1 standard), Professional Knowledge (1 standard), and Pedagogy (7 standards). The principle of continuous improvement pervaded the faculty as staff members and general staff were then, and still are, often engaged in conversations to ensure that student experiences are as rich as possible.

I joined the faculty when the new degree was in its second year of operation. I was teaching second-year students three courses: *Ensuring Student Success, Study of Society and the Environment (secondary),* and *English (secondary)*. In my endeavour to help my students to become as work-ready as possible upon graduation, I wanted to ensure that they would be prepared for the role of assessor – one that they would continually play in their profession. In each of these courses, students were asked to complete two assessment tasks – one small-group, oral task; and one written task. In each course I followed a similar procedure. Initially, I suggested to students that as future teachers, they needed to gain a deep understanding of assessment practices, and to develop confidence in their ability to make judgements of the assessment products of others. Therefore, I invited them to become intimately involved in the assessment procedure for each of the courses. I wanted to provide them with multiple opportunities to "think systematically about practice, learn from experience and revise practice" (Pultorak, 1993, p. 288). They were assured of my support in this process and were told that they would be strongly supported. Students were given copies of both the tasks set for the course and the particular graduate standards that the course addressed. We began in workshop mode, where they considered all relevant documents and eventually – collaboratively – devised a set of criteria against

which final grades would be awarded. Only the oral task would be peer assessed and the grade for this task would equate with 50 percent of the total course grade. I emphasised that peer assessment focuses on practising the skill of personal detachment – judging a product and not a person. To ensure students felt supported as they experimented with the process of evaluation, each judgement would be made by a panel of three or four peers. These student panels would be given tutorial time to discuss their initial judgements and to arrive, collaboratively, at a final-grade decision. Students were asked to individually provide feedback on individual mark sheets which would be then collated as one, group-awarded result. I would act as the final arbitrator. In one course, all presentations would be videotaped because not all presentations were completed in the same tutorial room, and in all cases, students had the right of appeal. In this regard, video taping assisted lecturer accountability.

To prepare students for this process, we reviewed each of the criterion and its descriptor. In these early days of teaching 12-week courses – where time seemed always in short supply, and no paper or videotaped evidence of peer assessment at a university level existed, and students had no prior experience in this arena – the preparation for the process was not as thorough as it was in the following year. Throughout the process I adopted the role of reflective teacher, one who constantly evaluates and seeks to improve. Beedle (2002) views reflection as more than a passive mental activity and states, "Reflection is for purpose, geared to action. It should be explicit and systematic, but personal and meaningful" (p. 12). I had not yet made the transition to researcher and saw myself as a reflective practitioner, always refining my teaching craft. The procedures I adopted at university were derived from my many years in a secondary classroom. I was pleased to discover they could all be substantiated through research.

BEING A TEACHER AND REFLECTIVE PRACTITIONER

It was at a time when I was teaching a Year 10 English class (15 year-old students) four years ago that my commitment to peer assessment commenced. The unit was *Parliamentary Prattle*, a vehicle through which I planned to lead the students in their discovery of the principles of Australian democracy. I wanted to establish procedures for students to make decisions important to their worlds. I intended to give them multiple opportunities to exercise power at a variety of levels and to operate in their classroom environment as active citizens. At the beginning of the school year when I first encountered this student group, its members assumed control of the running of the elections for the Student Council. This representative body consisted of approximately 25 students elected from a total population of 1000 students. Groups of students were allocated various tasks: calling for nominees for all positions, designing ballot papers, distributing campaign flyers, staffing the polling booth (our classroom) during voting times and, finally, vote counting. They experienced the necessity of working collaboratively with others during this rather busy time. Completion of the elections completed the orientation phase of this unit.

Next, the students from my class organized themselves into political parties, held elections, formed and operated a class parliament, and operated a committee structure. Each committee assumed responsibility for organizing a major function – one committee initiated a Year 10 "semi-formal" social event for 200 students. These committees met weekly and each student maintained a learning log. We decided collaboratively upon the criteria students would use to self-assess this writing task. Students also engaged in peer assessment and each of the criteria was negotiated. Every student allocated a criterion-referenced mark to each member of his or her group for contribution to the group. In the synthesising phase of the unit, students in pairs were given the task of producing a newsletter for distribution to the Year 10 population. The criteria used to evaluate this task were also negotiated and, in pairs, students were requested to judge the work of two peers, with the teacher as final arbitrator.

It was the intellectual, emotional, social, and ethical gains made by these students when they were involved in awarding grades – the ultimate exercise of power in the classroom – that made me a devotee of peer and self assessment. I had dabbled with this notion before, both in my teaching and in my capacity as a head of department, and considered it a useful strategy to ensure student engagement, but these previous experiences had not revealed the power of the tool to me. Perhaps these earlier experiences had refined my abilities and caused me to realise some of the potential of peer and self assessment. The capacity for problem

solving, decision making, and effective communication skills; and the ability to plan and organize activities, and to collaborate with others, are key components of the national goals for schooling in Australia (MCEETYA, 1999); and I witnessed each of these aspects of learning occurring in my classroom during this unit. If university education faculties wish to move in the spirit of these national goals, then it follows that they are obliged to ensure that graduates possess these attributes, and that they have or acquire the skills necessary to ensure their future students become critical thinkers capable of living successfully in a complex world. I believe peer assessment is one type of exemplary pedagogy that produces productive citizens. My reflections on school-based experiences – as discussed above – acted as a springboard for considering the possible role of peer assessment in the education of future professionals.

WHAT THE LITERATURE SAYS

Peer assessment has been an issue in university practice for the past 25 years (Zariski, 1996). A variety of justifications and exhortations have been voiced in favour of peer assessment at university including, the importance of lifelong learning, metacognition, students involved in accepting responsibility for learning, and the acquiring of professional expertise. Zariski asserts, "Students should be encouraged to think of their university degrees as a milestone in the life of learning rather than a terminal in their intellectual development" (p. 1). Zariski (1996) cites Stefani's strong argument:

> …life-long learning requires that individuals are not only to work independently but also to assess their own performance and progress. Involvement in the assessment process would hopefully heighten our awareness and knowledge of the student approach to learning and enable students to make rational and objective judgements about their own strengths, weaknesses and range of skills. (p. 2)

These arguments are endorsed by other academics who offer strong support for peer assessment in the context of learning at university (Bostock, 2003; Falchikov, 1996; Freeman & McKenzie, 2002; Gatfield, n.d.) in a variety of disciplines including, law, mathematics, economics, information technology, medicine, nursing, business, and education. While one could argue that all professionals need to be committed to the process of lifelong learning and continuous improvement, it is an imperative for the education of future teachers whose professional business is learning. This paper seeks to highlight the ethical, intellectual, social, and emotional gains from introducing peer assessment into the grading operations of a university education faculty.

A FACULTY'S ROLE IN ASSESSMENT

Taylor and Biddulph (2001) report that the New Zealand Ministry of Education has long recognised the pivotal role that peer assessment can play in the development of critical thinking; a skill that future teachers need to possess as part of their professional repertoire, and one that they need to be capable of imparting to their future students. Throughout the 1990s, the ministry made a number of recommendations to include peer assessment in the school curriculum, but acknowledged the gap between recommendations and action. "These semi-official and professional proposals may be valuable but, in our experience, unless teachers have personal experience of them they are simply not aware of the issues included in implementing peer assessment into their classrooms" (National Council of Teachers of Mathematics [NCTM], 2000, as cited in Taylor and Biddulph, 2001). The NCTM issued a call to action for New Zealand education faculties to include peer assessment in the education of future teachers. The National Standards and Guidelines for Initial Teacher Education (Adey, 1998 as cited in Taylor & Biddulph, 2001, p. 476) state graduates, "should have the confidence and ability to engage in collegial peer assessment and self assessment as part of every-day work". While the BLM Graduate Standards are not as explicit as those of the New Zealand national standards, the notion of peer assessment, I believe, is implied throughout the document. This is particularly the case for Standard 3 of the Pedagogy domain: "Bachelor of Learning Management graduates will design and maintain learning environments that engage learners in meaningful, socially interactive experiences which encourage and develop the management of their own learning" (Central Queensland University, 2002, unpaged).

INTRODUCING PEER ASSESSMENT TO FIRST-YEAR STUDENTS: A SMALL CASE STUDY

A qualitative case-study method (Merriam, 1998) was selected to investigate the process of peer assessment in two courses that I first developed, then delivered, late in 2003. These two courses, *Designing for Optimal Outcomes* and *Understanding Inclusion in Education* were the first two of an elective suite of four courses designed to broaden and deepen students' understandings of the notion of inclusion. It is acknowledged that the modelling of explicit teaching of inclusive strategies is embedded throughout all courses of the BLM, but Education Queensland requested students be offered the opportunity to develop some expertise in this area. From my school experiences came a deep awareness of the fundamental link between self-esteem, understanding assessment, and the achievement of educational goals. I viewed this as essential learning for students who had chosen to complete this suite of courses.

Case study is an appropriate research methodology due to its potential to yield insights into education students' beliefs, practices, and challenges associated with peer assessment through maximizing opportunities for each participant to explain their views and actions (McLuskie & Zipf, 2003). Data were collated through a pre-course and a post-course questionnaire. This study was conducted in intensive mode at the conclusion of the students' first year of university. The minimum total of 72 hours of the course was delivered three days per week over a period of five weeks. Peer assessment was practised thoroughly in one course and implemented as the assessment form for the second assignment in the other course. The procedure used to implement peer assessment was the same as outlined above. While only 13 students were enrolled in the trial course, the implications of this case study have strongly influenced our future academic direction.

THE PRE-COURSE QUESTIONNAIRE

Results from the pre-course questionnaire revealed these first-year students had a small level of understanding about peer assessment. They had been involved in the process of evaluating oral presentations in two subjects. In *Numeracy in the Classroom,* small groups of students had constructed written feedback on oral presentations. In *Futures*, again in small groups, students had graded peer presentations against a criteria sheet. These were designed as learning experiences only and did not contribute to final grades. Little preparation of the students for the construction of such feedback was undertaken. In both of these tasks the evaluation criteria had been predetermined. When asked what assessment forms could be used, every respondent suggested oral tasks. Perhaps this response comes from their university experiences where they had not been exposed to peer assessment of written tasks. Prior to commencing this research I too had only contemplated peer assessment on oral tasks. Other academics, however, have reported successful outcomes on formal peer assessment of written tasks. They expound the value students perceive from developing the skill of giving written feedback (Falchikov, 1996; Knoy, Lin, Liu, & Yuan, 2001; McLeish & Shaw, 1999). Knoy et al. discuss the uses of peer assessment as a copyediting tool; yet another application I had not considered. The vast majority of student respondents felt peer assessment was not a valid form of assessment because they perceived themselves as lacking such expertise.

The responses revealed a level of uneasiness among relationships between members of the newly assembled group. I was not aware of this until after reading the responses and, as a result, I followed the advice of Ljungman (2003) in carefully constructing relationship-building activities to provide students with opportunities to reflect on their own reactions to certain situations and to see themselves as trainee professionals before we negotiated the protocols of peer assessment**.** Ljungman argues that self reflection is an essential prerequisite for developing professional competencies, yet higher-education assessment practices frequently miss the mark in this regard.

Ljungman (2003) also suggests that peer assessors should be anonymous markers. This notion is supported by Milton (2001). I argue that students need to gain confidence in their ability to make decisions and fully comprehend the ethical issues of this procedure. Zariski (1996) claims peer assessment is an essential component of expertise in professional, business, and academic life. He asserts that building students' confidence in their abilities to make judgements about themselves and others is

part of assuming a professional role. Students expressed feelings of discomfort with the thought of peer marking and stated they would need support in the process through collaboration with peers, construction of feedback, and positioning the lecturer as final arbitrator. During the initial phase of their learning with this process, they also argued the marks awarded should be formative only, or that they should only be allocated a minimal weight towards the final result. This concept is also common among some advocates of peer assessment in higher education (Falchikov, 1996; Sparrow, 1997; Taylor & Biddulph, 2001). While it may be workable in some faculties, I believe it is inappropriate in an education faculty. Peer assessment encourages students to move away from the transmission model of teaching and learning, where full responsibility falls on the lecturer to ensure that transcribed information is given and received, and towards becoming more involved in the production of their own professional knowledge.

THE POST-COURSE QUESTIONNAIRE

Data collected from the post-course questionnaire revealed that 12 of the 13 students now felt comfortable about the peer marking process and could recognize its contribution to their understandings of the craft of teaching. A 1-5 scale was used where 1 indicated the lowest level. When asked whether they now possessed a deeper understanding of peer assessment and the assessment process, had further developed their interpersonal skills, and now felt more confident in their ability to judge the assessment product and not the person, all of the participants responded with ratings of 4 or 5, with the exception of two students who responded with a 3 rating. Most participants indicated a 3 or 4 rating for the validity of peer assessment for their learning, although some indicated they did not have the confidence to assume the role of sole marker. I had no intention of introducing this concept but wanted to gauge student responses to the possibility. Seven participants marked this notion with a 3 rating.

When asked whether students should be involved in the process of designing the task and criteria, all were in strong agreement (i.e., all gave a 5 rating). Student input into task and criteria design as an essential component of the peer assessment process is supported in the literature (Falchikov, 1996; Isaacs, n.d.). Every student respondent allocated ratings of 5 to the videotaping of presentations, the lecturer as the final arbitrator, the process being modelled, and the allocation of class time to practise this type of decision making and to reflect on their learning.

The level of trust in the group also scored highly, as did the students' new belief that peer assessment in schools would lead to better student understandings of the assessment process. Only one participant indicated difficulties in remaining objective during the marking process. When asked whether they saw peer assessment as a method of reducing lecturer workload, the majority replied strongly in the negative. Sparrow (1997), and Freeman and McKenzie (2002) suggest that in the delivery of online courses with large enrolments, lecturer and tutor workloads could be significantly reduced after the course was established. Students strongly agreed that it is one method that could reduce the possibility of lecturer bias and make the allocation of grades more transparent.

LOOKING TOWARDS THE FUTURE

As I conclude this paper, I would like to share some reflections with you, the reader. The skill of giving and receiving feedback has assumed greater prominence in my thoughts about teacher education, and I now believe it to be an area teacher educators should more explicitly address; in other words, ensuring that graduates attain this skill. The extension of peer assessment of written work in a university setting is another area I now wish to explore. Even though I used peer assessment of written work in a school setting, I had not visualised it as part of a tertiary-teaching toolkit. The group of university students who constitute this study, while agreeing philosophically with the notion of peer assessment, were, at the beginning, strongly opposed to its implementation. I was surprised by the very strong reactions to peer assessment that were revealed through the initial questionnaire. I had assumed that, as adult learners, they could see the inherent value in the process. When asked to indicate how many of their courses should contain at least one assessment task evaluated by peers, a typical response was, "None in which peers give a mark." Another common comment was that peer assessment should be formative only due to the lack of experience of the markers.

These comments were in strong contrast to the data collected following the implementation of formal peer assessment. One of the participants in the case study endorsed peer feedback and wrote she had read somewhere, "Feedback is the pathway to greater understanding". This struck a chord with me, an early researcher and one not accustomed to the professional challenge of peer review. Another student commented, "All courses should have at least one assessment item peer assessed, especially in our program. As future learning managers we need lots of practice, practice, practice, practice!" Yet another student discussed the critical approach she now feels capable of employing as she listens to her peers and lecturers. She wrote, " I believe peer assessment is great as we have the opportunity to ensure we become fair assessors and have lots of experience with marking." It is clear from these typical statements that students now perceive peer assessment very differently to how they originally viewed it. They can now make the intellectual connections between decision making as individuals, as university students, and as future professionals. As a tutor I was very pleased with the depth of knowledge the students now possess about some of the many complex issues surrounding assessment practices. I now practise what I preach, hoping that group peer assessment of both oral and perhaps written tasks will become part of each participant's professional toolkit. With my colleagues, I advocate the macro-level embedding of a variety of types of peer assessment throughout the degree's core courses, confident that this will enable our graduates to "develop and maintain a commitment to the teaching profession through the appropriate application and continual renewal of essential professional knowledge" (Central Queensland University, 2002).

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LIFELONG LEARNING, GEOGRAPHICAL SPACES, AND NOMADIC NECESSITY

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ABSTRACT

This paper interrogates my personal experiences of being "situated" as an educator within a regional context. Current dominant discourses encourage individuals to take responsibility for their own lifelong learning and imply there are opportunities available in regional locations to use this knowledge and "education". While the desire to contribute to the social fabric of place and community may be keenly felt, the impact of globalization and economic rationalism ultimately constrains opportunities and undermines lifelong-learning discourses. I conclude this paper by suggesting that Central Queensland University could play a role in building sustainable regional communities through fostering local growth in employment opportunities.

INTRODUCTION

In this paper I reflect on the way that government policies within contemporary Australia have impacted on my own positioning, both geographically and occupationally. My "living space" and my "work space" are domains that are constantly changing in response to global issues and events. I indulge in the pleasure of exploring the multiplicities, competing discourses, ethics, and values that make up the place in which I live and the space that I occupy as a female body. To do this I divide my paper into three sections. The first section deconstructs the notion of place (McDowell, 1999) and positionality, where I establish the contexts associated with work, occupation, and lifelong learning in a specific geographical space. Very broadly, I summarise social indicators and present a snapshot of Rockhampton – the place where I currently reside and work. In the second section I use the concept of "multiple mes" to explore my own positioning within diverse communities – both real and imagined. In the last section I raise the issue of nomadic necessity and divide this section into two subsections. In the first subsection I use the notion of the nomad (Braidotti, 1994) to outline my journey through occupational groups and opportunities in Rockhampton. In the second subsection I explore the ways in which I am also positioned as a non-nomad by my desire to contribute to the social fabric of the local community culturally, educationally, and occupationally; I constantly negotiate tensions between the desire to remain and the necessity to go if I want to pursue a professional career, problematising the notion of sustainable regional communities.

PLACE AND POSITIONALITY: BEING A COMMUNITY

McDowell (1999, p. 100) contends that the concept of community carries with it visions of warmth and solidarity with the corresponding

assumption that a lack of community is a bad thing. Community is also used to label groups, sometimes negatively and often establishing stereotypes (McDowell, 1999, p. 100). In this paper I use the term "community" in specific ways denoting both place and group; place meaning geographical location, and group meaning occupational community. Geographic location comprises many different and diverse members located in one specific geographic location while an occupational community involves a group of workers in the same occupation that are located across many sites or locations thus forming imagined communities. Virtual communities follow a similar pattern, but rather than being held together via occupational interest they are held together by way of the Internet and information technologies in relation to both personal and public spheres.

Because of their discursive positioning it is possible to argue that women and men occupy place and space differently. For example, the home is a place that many men often seek as a haven from the pressures of the outside, public world. Therefore these men use this site as a place of relaxation and leisure. For most women the home is a site of housework and childcare; work rather than leisure. This is not to say that women don't gain pleasure from their home, but for some women home can be a site of violence, despair, and loneliness. I argue in the following section that, while Rockhampton is a community moving towards transformation of home and community, there are competing discourses present that serve to discursively position women in specific ways that impact on how women are seen in both the private and public spheres of the community.

Place and community: my geographical isolation

Rockhampton, Central Queensland, has a population of approximately 60,000 people, and it services a large, rural, geographical sector west from the Capricorn coast. The regional population in February 2003 was approximately 261,204 (State of the State, 2003). To give some dimensions of the geography of the area of Central Queensland, Rockhampton is a six-hour drive north of Brisbane and is geographically situated just inside the Tropic of Capricorn, hence the local name of "Capricorn Coast". Yeppoon lies 45 kilometres east of Rockhampton on the coast, while Longreach is a seven-hour road journey to the west. There are road, rail, and air services to and from the city. Rockhampton was the original campus for Central Queensland University (CQU), which has since expanded to locate regional campuses at Bundaberg, Mackay, Gladstone, Emerald, and Noosa. There are also campuses located interstate and overseas that cater for international students. Table 1 indicates the percentage of graduates in three of the regional communities at two different times.

Place	2003	1996
Mackay	6.3%	5.1%
Rockhampton	6.9%	5.7%
Gladstone	6.5%	5.1%

Table 1. Percentage of bachelor degrees: comparison between 2003 and 1996 (State of the State, 2003).

This table shows that there has been a marginal increase in the percentage of people with bachelor degrees; however, the percentages are low considering that regional campuses of CQU exist at these three locations. Table 2 indicates the change in unemployment in these same communities.

Place	2003	2001
Mackay	6.9%	9.2%
Rockhampton	9.6%	10.8%
Gladstone	7.1%	9.2%

Table 2. Percentage of unemployment: September 2003 and September 2001 (State of the State, 2003).

Table 2 shows that there has been some decrease in the number of unemployed people across these three sites. Both Rockhampton and Gladstone have undergone extensive industrial development. About a quarter of the Australia's coal exports go through Hay Point (Mackay). This port and Port of Gladstone moved AUD$9.4 billion in exports during 2002, but Rockhampton had the Lakes Creek Abattoir close in July 2002 with the loss of 700 jobs. Although the "beef capital" (Rockhampton) is attempting to reinvent itself as an educational and cultural hub for the Central Queensland region (State of the State, 2003), currently there is still a shortage of medical specialists, and the university is cutting back on staff despite healthy enrolments.

Cameron Forbes (2001), a journalist, revisited Rockhampton after a long absence and reflected,

in an article in the Weekend Australian newspaper, on some of the changes that he saw.

> For many of my generation Rockhampton was a place to leave, one of those regional centres stuck between the bush and the big smoke, places of broad horizons but limited opportunities …Rockhampton regarded Brisbane with resentment and suspicion … It was a tough old town founded on the dispossession of the Darambul people, the "wild dogs" whose survivors lived out of sight in reserves or in near invisibility on the town fringes… It was a macho town, the self-proclaimed beef capital of Australia with a predilection for scattering statues of bulls through the streets. Mayor Rex Pilbeam who dominated politics for three decades … instituted council policy against employing married women and said that working mothers caused a litany of social evils.
>
> Things have changed. The girls are back at the Rockhampton Grammar…. Women are everywhere now … sitting in the mayor's seat is Margaret Strelow, married with 4 teenage children and the Federal member for Capricornia is 31-year-old Kirsten Livermore [but] about 40% of the Rockhampton population seems to be below 25 and the rest are much older. There's a middle missing … (p. 7).

What Forbes is describing is a site of competing discourses. Rockhampton is a regional centre that has strong ties to rural industries and agricultural families. This means that there are also strong beliefs about the place of women and what women should or should not do, in or outside of the house or farm gate. Generations of the same families have lived in this region, and until the 1990s there had not been much movement of migrants into the region. Many of the local families have sons and daughters who return to the region after finishing boarding school or have remained here because of family ties, but many, like Cameron Forbes, prefer not to return on a permanent basis. While there has been minor change with the public appearance of women in some positions of status, attitudes in many sectors of this community are still traditional. Gatens (1998, p. 3) reminds us that families are perceived as "natural" entities rather than institutions shaped by dominant or prevalent historical, social, and political relations of power that underpin particular ideologies. This illustrates that movement towards transformation in Rockhampton is gradual rather than radical.

Discursive constructions: being a woman in Rockhampton

There are some fairly traditional normative practices that are firmly entrenched within the white, Anglo-Saxon community living in Rockhampton. These emerge from certain beliefs and cultural values pertaining to the role and position of women. Discourses and discursive practices are embedded in such institutions as the family and the workplace (Lindsey, 1994; Weedon, 1987). Discourses related to the family are highly emotive and powerful and form our cultural values, norms, and beliefs. At the same time, the family is the most significant socialising agent in shaping and constituting gender norms. We learn how to be male, female, mothers, fathers, workers, and providers within this institution and from imitating those close to us.

There is an expectation of the second wage, but childcare and housework still fall primarily to women (Lupton, Short, & Whip, 1992). While there has been some movement of women into the public sphere of Rockhampton and into leadership positions such as Mayor, Vice Chancellor (CQU) and Federal Member, these are not enough to change attitudes towards the roles and position of women generally. Many women work in full-time positions in traditional "service" occupations such as nurses, teachers, retail assistants, and hospitality workers. At the same time, there are women who work on rural properties alongside husbands and partners. Probert (2002) contends that while women are encouraged to enter the workplace, discourses around domesticity and motherhood remain relatively traditional.

MULTIPLE MES: POSITIONING AND BEING POSITIONED

While Kenway, Willis, Blackmore, and Rennie (1993) suggest that women learn how to be women (in the culturally endorsed sense) through the discourses of the everyday, Davies (1990) contends that women learn to choose between different discursive constructions, thus taking up some and rejecting others. Some discourses are clearly more powerful than others within different historical or cultural contexts

and are legitimised within various institutions (Kenway et al., 1993; Kenway, Willis, Blackmore, & Rennie, 1997). What I term as "multiple mes" (i.e., various forms of me) is helpful here. I contend that the concept of multiple mes (Moore, 2003) is a device for explaining how competing and contradictory discourses are negotiated and reconciled. Because a woman may negotiate a number of discursive fields – mother, wife, daughter, worker, student, or academic, for example – she holds a different subject position and can be seen as a different "me" in each of these fields. This multiplicity may be contradictory, that is, she is both a mother and a daughter. Coupled with this are markers of difference such as age, race, ethnicity, and physical ability; all providing constructions of how this woman is seen by society and demonstrating differences found among women (Braidotti, 1994). These multiplicities can allow many women to challenge the limited and narrow traditional constructions of "woman" in a rural environment such as Rockhampton. The concept of multiple mes is significant because it demonstrates that context is important and that choices are made in non-neutral contexts.

Being 'me' in Rockhampton: my occupational isolation

When I first arrived in Rockhampton I was able to continue my commitments to my New Zealand employer regarding nuclear-medicine training for radiographers by belonging to a virtual community. In my tangible community I did short-term locum work, covering for staff on annual leave, in the nuclear-medicine section of a private radiological practice. I also covered for radiographic staff when times got very busy and when regular staff were unavailable. As well, I covered for staff at the base hospital in a similar arrangement. There was not enough work or funding for either a full-time or part-time position at either site. After about two years of this I enrolled in an Arts degree at CQU. I become involved with the local Women's Health Centre (WHC) as a member of the management team. Here I met a diverse range of local women; I had also met other migrant women through more formal channels associated with my own allied health work and my husband's work. As a woman without children, I was told by a couple of local women I was "abnormal". As a wife, I was viewed suspiciously when stating that I wished to continue my career. Both of these situations challenged the traditional construction of "woman" in this community.

Taking on lifelong learning discourses

Neither did I readily fit the image of the "CQU domestic student" because my aim was to learn about Australian society rather than re-train for a job. I was demonstrating a commitment to lifelong learning at the local university, thus taking up a prevailing discourse in the local community. The university offered a way to value add to my existing skills and knowledge. At the time I was occupationally isolated but felt I should be able to apply my new knowledge in this region. Axford and Moyes (2003) consider that lifelong learning has a particularly close resonance with current debates regarding the needs of both workers and organizations that form the globalized market place. There is a strong discourse that ties continual upgrading of skills to economic success.

Although I enjoyed my voluntary involvement at the WHC I did not want to work there. I applied to enrol in a PhD program – hoping to have the same supervisor as I'd had with my Honours degree. However, while my candidature was accepted, owing to re-structuring within the faculty, my supervisor suddenly became unavailable. Within the university I could see the effects of micropolitics at play. I also felt that the micropolitics of the workplace would be a good PhD topic. What came to concern me in my thesis was that transformative practice at the micro-social level (subjectivity) was not transforming the macro-social level – the workplace. There were competing discourses, but the dominant traditional discourse continued to position the women I interviewed as complementary to men. While the women I interviewed demonstrated transformative practices in their work, this was not changing attitudes towards the place of women in society. These women were valued when they took on traditional roles of caring but were devalued in research or management – roles that were more often associated with men. On reflection, the university mirrored the local community, but this wasn't just a case of oppressed women. The women I knew, and also myself, were negotiating complex and complicated lives in a context influenced by such macro-issues as drought, industry profitability, rising interest rates, workplace reform, and competition policy. Jobs, workers, and community sustainability are negotiated along a very fine line that appears to

be ultimately controlled by economic rationalist policies and cost-effective measures. There were material consequences coming from this complexity.

Economic cutbacks to the university mean that employment for many women, if available at all, may come in the form of casual tutoring. At the same time, many of my allied heath colleagues have left because of disappearing jobs. Many medical specialists and their families have also left. Community funding is under threat as places like the WHC worry whether the government will continue funding at the current level or even discontinue programs. Community groups are being asked to tender for service provision, meaning that they compete among themselves to continue services rather than complement each other. This makes for division rather than partnerships in community service. Each government bureau that centralises services back to Brisbane means a few more families leaving the district, the consequences of which are felt in declining school enrolments and fewer wages being spent in the local industries and businesses. Those banks that close their doors and expect the community to embrace online services send strong messages that people in regional areas are not valued customers. So where does this leave me? The concept of the nomad (Braidotti, 1994) is useful here.

NOMADIC NECESSITY OR RE-PROGRAMING: DO I STAY OR DO I GO?

My negotiations with the university, the workplaces and people that I have met in Rockhampton have emerged from what Suchman (1987) refers to as situated action where responses can lead into both familiar and unfamiliar spaces. As Rowan (1998, p. 22) reveals, for her, "situated action emerges from a specific context and thus can never have the reassuring familiarity of a plan". Indeed, my own journey into the community of Rockhampton has been one of unpredictability, uncertainty, and dynamic flows venturing into many unfamiliar spaces. As Braidotti (1994, p. 5) asserts "some of the greatest trips can take place without physically moving from one's habitat". Having enjoyed some of my journeys into the local community I feel I am now positioning myself as a non-nomad because of my desire to stay awhile and to contribute to the local community. Unfortunately, the jobs and investment by larger institutions are not there for me to be able to do this.

CQU provides value-added exports in the form of overseas students returning to other geographical places in the global market place. There is potential for domestic students to value-add to the local economy. Unfortunately, in regional areas such as Central Queensland the consequences of competition policy and economic-rationalist practices have resulted in declining services and employment opportunities. This has seen a movement of skilled professionals out of Rockhampton. While I am not suggesting that CQU should become a job agency, I am advocating that universities, such as CQU, could take on a leadership role in the local community by building sustainable communities through the promotion of lifelong learning and partnerships with local industry, professional groups, and government agencies. At the same time universities could critique government policies that have negative consequences on regional areas. CQU could re-position itself as an advocate for sustainable regional communities within its campus locations.

CONCLUSION

In this paper I have explored the notion of community in relation to both geographic location and occupational groups. An image of community was provided through rich descriptions of Rockhampton, a regional city located in Central Queensland. This community is a site of multiple positionings for women where dominant discourses tend to construct women in traditional ways. There are women who challenge this positioning, and to explain the negotiation and reconciliation of competing discourses the concept of multiple mes was useful. Using my own experiences of both geographical and occupational isolation I reflected on a complex, exciting, and uncharted journey into the community that is Rockhampton. Undertaking this journey also meant immersing myself in the local university culture as a lifelong learner. The university has the potential to act as a leader and partner with their community to build regional sustainability in Central Queensland.

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PORTFOLIO CAREERS AND LIFELONG LEARNING: WHO TAKES RESPONSIBILITY?

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ABSTRACT

In this paper I explore the notion of *portfolio* careers for women. Globalization and economic rationalism draw attention to the changing nature of the workplace where these ideologies are shaping the performances of workers. When this context is coupled with discourses around lifelong learning, some significant questions are raised such as who takes responsibility for ensuring that workers involve themselves in lifelong learning, who gains from the promotion of lifelong learning, and what can be called legitimate lifelong learning within a portfolio career.

INTRODUCTION

There has been much discussion and debate over the past thirty years concerning women and their entry to the workplace. In this paper I continue this discussion by exploring three key themes that draw attention to issues pertaining to the positioning of women in contemporary workplaces, the ongoing debate about childcare and parenting responsibility, and discourses around lifelong learning. The first theme centres around the notion of *portfolio* careers, once the domain of successful, high-flying male executives and now the domain of part-time and casual workers. The second theme highlights the changing nature of the contemporary workplace that is under the influence of globalization and economic-rationalist policies. The third and final theme of this paper draws the first and second theme together to interrogate the discourse of lifelong learning and how this intersects with women workers in the contemporary workplace.

THE PORTFOLIO CAREER

The notion of a portfolio career is not new or particularly novel. Many middle-aged executive men have been involved in such careers for years (Waite, 2002). However, this concept has also become an attractive option for some women. Waite (2002, p. 92) uses the well-known corporate identity, Margaret Jackson,

now chair of Qantas, as an example of a woman who has opted for a portfolio career. She has declined traditional partnerships for a series of board appointments and consultancy work. On the one hand Margaret Jackson appears to be following on the male pathway of corporate executives, but Waite also raises the point that portfolio careers can be happening without the worker realising. What is meant here is that many of us combine job juggling with study, part-time work with childcare and family responsibilities, and sport, entertainment, and leisure activities. In other words, for many women and men, life is a portfolio career.

Waite (2002, p. 92) defines a portfolio career as a combined life and work package where women are now rejecting the norm of nine-to-five work patterns and opting for a combination of paid and unpaid work. The idea of a portfolio career is not necessarily new, as women have been doing this kind of job juggling for years. However, the term portfolio career is gaining legitimacy as many professional men are either combining a series of positions within a portfolio or working more than one job at any one time as a "work package" (Waite, 2002). Traditionally, this portfolio work pattern was an exclusive male domain where certain privileged men were granted, as a sign of their merit, worth, and status, positions of power in the corporate world. These men could be described as "pillars of patriarchal society" who had reached this level of "expertise" through years of work within possibly the same company, or who were connected through that "old boys" network from school and university days. These men often had privileged education and family status and, as wealthy patriarchs, could only be challenged by the entrepreneur, who gained a similar position by creating wealth through innovative or creative businesses. These men stalked the corridors of power knowing that women were less likely to be found in this arena. In other words patriarchal systems work to maintain a sexual division of labour.

This sexual division of labour also serves to reinforce the division between the public and private realm. As Spivak (1990, p. 377) explains, the political, social, professional, economic, and intellectual belong to the public; while the emotional, sexual, and domestic are part of the private. These binaries have consequently associated men with the public realm and women with the private realm where a sexual division of labour has then neatly allocated particular jobs on a biologically determinist argument. Challenging this biological determinist argument, Butler (1990) declares that it is through repetitive gendered performances by specific bodies, that have been labelled male or female, that this allocated sexual division of labour has come to be seen as "natural" and "normal". However, the consequences of this division have meant that in contemporary times child rearing and domestic responsibilities have remained both an expectation and a reality for Australian women (Wearing, 1996, p. 143). This expectation and reality stems from a traditional norm within Australian society of the nuclear, patriarchal family where the men go to paid employment outside the home and women do unpaid work within the home. Gatens (1998, p. 9) points out that the hours that women devote to household labour and childcare are hours that are not available to paid work, unlike men, who gain these hours when they leave housework and childcare to partners. This becomes a significant point when considered in relation to women's participation in the workplace.

Women are entering the workplace for diverse reasons, they include but are not restricted to the following;

- the need to supplement the household income,
- they may be the sole breadwinner for that household unit,
- many women desire to continue their careers.

I would also like to suggest another reason why women want to enter the workplace: to create time for themselves (a theme I will raise again in a later section). Women's entry to the public space of society is happening in a complex, dynamic, and changing workplace context and it is influenced by processes of globalization and policies of economic rationalism.

THE CHANGING NATURE OF THE WORKPLACE

The second theme of this paper concerns the changing nature of the contemporary workplace. This theme draws attention to the diverse range of work patterns within an equally diverse range of workplaces. The workplace is an arena of contesting, ambiguous, and competing discourses that shape the performances of those working within it, as well as impacting on the way those same workers negotiate the

circulating discourses. In Australia, as a consequence of second -wave feminism and women's activism during the 1960s and 1970s, women have been entering the public sphere and the labour market in increased numbers (Probert & Wilson, 1993; Zajdow, 1995). Perhaps as a consequence of globalization, women are now seen as vital to the labour market, thereby moving towards a feminisation of the labour market.

While the traditional full-time job is still present, these jobs are more likely to be held by males and those women who either do not have children or who are in a position to get full-time childcare. However, this so-called feminisation of the labour market is more likely to see women concentrated in particular occupations – and more specifically, in part-time work away from the core of valued workers. This is highlighted through a common status within the peripheral labour market where many women are employed on the basis of short-term contracts, consultancies, and casual and on-call arrangements. Beechey (1987) suggests that married women have functioned as a disposable labour force that disappears and re-appears when services are demanded, supporting the notion of the "'reserve army" of workers. Not only have women always been cheaper to employ but they have been prepared to work in both part-time and casual jobs to gain some flexibility in the hours worked. The availability of childcare, and family responsibilities, still remain as important considerations for employed women in the new work era. For many women then, part-time and casual work has enabled them to combine work with family responsibilities.

Currently I would argue that, while this reserve army is still present, it is not just married women making up its ranks. Not only is the composition changing to include married and single women, but men also, are part of this reserve army. In fact, this army is becoming the norm within the processes of globalization that are now shaping the notion of work generally and women's work specifically. In an era of economic rationalism where the bottom line is cost cutting, many employers have opted for a "more flexible breed of employee" (Balogh, 2003, p. 13). Balogh (2003) suggests that there are five new employment relationships:

- fixed-term contracts – where there are the same benefits and entitlements as full-time employment, but lack security;
- casuals – where there are more flexible hours and an increased loading in lieu of benefits such as sick leave and holidays;
- part time – where if permanent enjoy entitlements but fewer hours, popular with those wanting to combine work and family;
- contractors – where workers are not bound by any minimum pay, superannuation, other entitlements or unfair dismissal;
- labour hire – where these are just casual, daily sign on arrangements (p. 13).

According to Thomas (1999), 80 percent of the jobs created in Queensland since 1989 have either been casual or part time, with one in three jobs now casual and heavily concentrated among women workers. This casualisation of the workplace has often been promoted under the guise of "flexible" and "friendly" working conditions for mothers, but in reality there is often little choice of when these hours are worked. A recent study by Probert (2002) suggests that few women actually earn enough to be independent, and the new Fordist economy is characterised by growing sectors of feminised employment; examples being the retail and hospitality industries which pay barely a living wage. Manufacturing and telecommunication industries use female outworkers as "working fodder" with Milliner (1998) pointing out that for some companies, flexible working hours mean they can call on workers to come and go as the demand requires; that is, for example, four hours today and maybe two hours tomorrow.

This highlights the changing nature of work from that of a production regime to one that better suits service industries, an area increasingly made up of women workers. This sector ranges from the delivery of education (teachers) to the commodification of care (nurses, childcare workers, beauty therapists, psychologists). Women are also entering non-traditional jobs as, for example, engineers, academics, medical specialists, and accountants, just to name just a few. While on the surface this change appears to be moving towards a transformation of the workplace, Australia reflects traditional trends present in other OECD (Organization of Economic and Cooperative Development) countries in terms of work/gender segregation. Australia has the highest number of occupations and industries segregated by sex, with male workers having a much greater choice than women (Zajdow, 1995, p. 3). For those

women returning to the workplace after the birth of their children or when their children have started school, there are extra pressures within a context of lifelong learning. Complicating this changing workplace are the discourses associated with lifelong learning.

LIFELONG LEARNING AND THE WORKPLACE

Axford and Moyes (2003) state that lifelong learning is a "catch all" term used by politicians and policy makers to combine the diverse range of education and training issues that have emerged with concurrent technological and economic changes happening within a context of globalization. Lifelong learning has therefore become a concept synonymous with ongoing education, training, information management, information communication, and globalized workplaces. To be on the cutting edge in the new workplace is to be involved with technology and this is intimately connected to the "need" for lifelong learning (Albon & Trinidad, 2002). As Jarvis (2000) points out, lifelong learning is intimately linked to global capitalism which may enhance the lives of some workers but denies opportunities for other workers who do not have appropriate training. Consequently, the individual who, by definition of being a worker in this current era, needs to be constantly updating skills and knowledge to remain a valued and flexible member of the labour market. A dominant discourse in the labour market promotes flexibility, creativity, and innovation. These qualities, along with communication skills, are key attributes that most employers require; one just needs to read the job-vacancy sections of the major Australian newspapers to confirm this view. The question then becomes – what does that actually mean – and whose responsibility is it to maintain lifelong learning?

Axford and Moyes (2003) consider that lifelong learning has a particularly close resonance with current debates regarding the needs of both workers and organizations that form the globalized market place. There is a strong discourse that ties continual upgrading of skills to economic success. In other words, to be seen as economically successful, staff are required to be "on the cutting edge" of their occupation or profession. According to Axford and Moyes (2003) this means that educational and training outcomes are being directly linked to job placement and human-resource planning. For Jarvis (2000) this kind of link brings an ethical dimension to lifelong learning. The link implies that in order to get a job in a specific place a corresponding "certificate" from a recognised training institution is required (see also Reid-Searl & Anastasi, 2002). When these kinds of links are made, it could be argued that responsibility for upgrading or even obtaining a recognised piece of paper noting particular skills and attributes lies with the worker. This also generates niche marketing within training institutions for short courses that, in turn, shifts the cost of training from a workplace onto the potential employee, and thus fitting neatly into a user-pays ideology (Reid-Searl & Anastasi, 2002).

Whilst generating new training courses would, in turn, establish further employment for trainers, I suggest that this could homogenise workers' attributes, masking instead of celebrating differences among employees. When one considers that the pressure to embrace this notion of lifelong learning occurs within a highly gendered workplace, the increasing priority given to "recognised qualifications" has significant consequences for those women desiring part-time employment. Probert (2002) contends that while women are encouraged to enter the workplace, discourses around domesticity and motherhood remain relatively traditional. There is an expectation of the second wage, but childcare and housework still fall primarily to women (Lupton, Short, & Whip, 1992). As a result, there are competing discourses of motherhood and caring (traditional) and women and working (challenging traditional discourses) present, where these discourses are more likely to be negotiated by women in the private sphere (Lafferty & Fleming, 2000).

In other words, the hours and conditions under which many women work are determined by their private responsibilities as much as by their public desires. As stated earlier, reasons for some women returning to employment may be to supplement household income, a desire to maintain a career, or to gain some time for themselves – by this I suggest that some women work to regain an identity separate from that of being a mother. I would argue that working women who are married and who have children are thought of as wives or mothers first rather than individuals with their own personalities, multiple subjectivities, and identities. Being part of the workplace gives these women an identity

that is not tied to being an object, that is, someone's wife or someone's mother. Returning to the workplace enables women to incorporate skills developed in the private sphere with those gained from formal training. Feminist activism in the 1970s and 1980s drew attention to the concept of "merit" where skills and attributes could be equated to "experience".

The concept of merit is a slippery notion where there is potential for further gender discrimination (Blackmore, 1999). As merit is a constructed term, the criteria used, rather than the concept itself, needs to be kept in check. For those women who opt for part-time work to combine their public and private spheres of life, the notion of merit could be extended to include (and value) those attributes finely tuned by running household budgets, organizing timetables and activities with school demands and children, negotiating and allocating tasks inside and outside the house, and keeping to deadlines in order to feed the family at meal times; thus demonstrating the ways in which the contemporary woman worker/mother/wife is firmly entrenched in a portfolio career. Because these attributes are still seen as an extension of women's biology and do not come with a recognised "workplace certificate" (marriage certificates do not count), many women may lose out before the interview phase because they do not meet the selection criteria. These same women may not be in a position to gain further qualifications in a context that sees lifelong learning as a personal investment and therefore the responsibility of the individual not an organization or workplace. Workers no longer have the same job for life and face retraining and career changes as the norm, with the onus on the individual to value add to their portfolio career.

CONCLUSION

When portfolio careers are coupled with changing patterns of employment from full-time to part-time and casual hours, opportunities to transform the workplace emerge. There is the possibility whereby both men and women can gain from a redistribution of working hours and parental responsibility. The notion of running concurrent, negotiated, and valued portfolios between parents and those workers who wish to reduce their stress levels, workloads and hours of work could be appealing, but only if accompanied by suitable wages. The changing nature of the workplace provides a new context within which to negotiate and revalue skills and attributes that can cross the public/private divide. This has resulted in the responsibility for lifelong learning moving to the individual as a personal investment in their portfolio career. It also allows for the valuing and extension of lifelong learning that is "other" to formal training and qualifications.

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SOCIAL CAPITAL, LIFELONG LEARNING, AND AUSTRALIAN OCCUPATIONAL TRAVELLERS: IMPLICATIONS FOR REGIONAL, RURAL, AND REMOTE EDUCATION

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ABSTRACT

This paper examines lifelong learning according to alternative understandings of capital. The authors argue that a more nuanced and contingent conception of capital is needed to understand the lifelong learning of Australian occupational Travellers. The paper considers implications of this argument for lifelong learning in regional, rural, and remote locations.

INTRODUCTION

An enduring debate about lifelong learning is its role in replicating existing social structures vis-à-vis its potential for creating new networks and relations. This debate is particularly important in regional, rural, and remote communities, which are often depicted as being under threat of diminution if not extinction.

This paper examines the conceptual links between lifelong learning and alternative understandings of capital. On the one hand, it considers Bourdieu's (1977, 1990, 1993) analysis of different forms of capital and its implications for education as an agent of socio-economic stratification. On the other hand, it presents the position that such an analysis does not provide a complete view of social capital conceived as regional, rural, and remote community development in Australia.

We contend that understanding the role and potential of lifelong learning in contemporary regional, rural, and remote education – particularly in an Australian rather than a European context – requires a more nuanced and contingent conception of capital than that provided by Bourdieu, the significance of his contribution notwithstanding. We illustrate this conceptual argument by reference to the educational aspirations and opportunities of Australian occupational Travellers – specifically mobile circus and show communities. We assert that the forms of educational provision – including lifelong learning – for these communities need to engage with the Travellers' generation and exchange of varied forms of differently valued capital.

More broadly, we argue, the paper has important implications for lifelong learning in regional, rural, and remote locations. In particular, Australian occupational Travellers have three key characteristics in common with residents of such communities that suggest that responsibility for, and contributions to, lifelong learning in regional areas require dynamic and reciprocal social networks and partnerships.

It is important to explicate this paper's articulation with, yet also to differentiate it from, the three preceding papers about Australian occupational Travellers in the lifelong learning

conference series. Coombes, Danaher, Anteliz, and Danaher (2000) used a comparison between "generic skills" and "life skills" to argue against an approach to lifelong learning that homogenises the lived and educational experiences of such marginalised groups as university pre-undergraduate bridging students and occupational Travellers. Danaher, Coombes, Danaher, and Anteliz (2002) drew on these same groups to advocate an ethically informed discourse of lifelong learning. Danaher, Moriarty, and Danaher (2002) conceptualised lifelong learning in terms of its vertical and horizontal dimensions, as cooperative communication and as problem-based learning, and illustrated that conceptualisation by reference to Australian circus people. This paper uses a different conceptual resource – forms of capital – and focuses on a different set of implications – the sustainability of regional, rural, and remote communities – to present the same general point underpinning all four papers: the crucial and urgent responsibility of all of us concerned with lifelong learning to be alert to the potentialities of alternative and multiple knowledges and experiences, and to be attentive to the easily overlooked needs and aspirations of the traditionally silenced, in relation to educational provision.

LIFELONG LEARNING AND ALTERNATIVE UNDERSTANDINGS OF CAPITAL

One of the contributions of more contemporary conceptualisations of "capital" has been to extend the notion beyond the economic realm. This move escapes the limitation of the conventional Marxist position in which an economic base is conceived of as playing a deterministic role in cultural and social life. It also challenges an economic rationalist perspective that configures the practice of a diversity of institutions (media, education, government, and so forth) within models derived from the field of business.

Pierre Bourdieu (1977, 1990, 1993) has been an enormously influential theorist in rethinking the value of capital (Webb, Schirato, & Danaher, 2002). He distinguished among economic, cultural, social, and symbolic capital. While economic capital refers to financial resources, cultural capital refers to qualifications, attributes, talents, and tastes that represent value within particular fields; social capital refers to connections and networks that are built up within and across different fields; and symbolic capital refers to attributes of reputation such as honour and prestige. Each of these forms of capital is integral to the practice of learning, including lifelong learning.

Yet Bourdieu's conception of diverse-though-connected forms of capital raises significant questions for our research into the movement of travelling communities within regional areas: What forms of capital are valued within different settings, and by whom? To what extent and on what basis can valorised, authorised, and sanctioned forms of capital be challenged? What are the effects and tensions involved in this challenge?

Within the field of education, Bourdieu's studies have tended to focus on the effect of socially sanctioned forms of schooling and higher education upon a student body divided along social class lines. Within this context, he finds that schools and universities tend to play a role in reproducing social relations of domination and subservience. The lower classes' lack of access to the cultural, social, and symbolic capital of the upper classes – capital that implicitly informs the educational values and practices of schools and universities – means that they face a comparative disadvantage within these institutions that has the effect of confirming their relatively impoverished social position. Far from being agents for creating a more equitable society in which all can enjoy the fruits of knowledge and learning, educational institutions for Bourdieu tend to act as sites in which existing social divisions are confirmed and validated.

While a number of Australian educational theorists have taken up Bourdieu's theories in order to make sense of educational practice in this country (for example, Mills & Gale, 2003), and while we regard his contribution to thinking about these issues as significant and valuable, in this paper we seek to emphasise the limitations of this thesis for making sense of lifelong learning in regional areas. In doing so, we align ourselves with more recent theoretical work that has looked at the prospect of a more finely nuanced conception of the possibilities embedded in the concept of social capital (see for example, Baron, Field, & Schuller, 2000; DeFilippis, 2003; Field, 2003). Firstly, Bourdieu's focus within the French educational system in which forms of social stratification and cultural distinction have evolved over

centuries doesn't translate easily to the Australian context in which a more egalitarian spirit, together with opportunities for educational innovation, create a potentially more propitious set of circumstances. Secondly, his focus on formal educational institutions overlooks the lifelong learning taking place within other institutions: workplaces, friendship groups, families, and entertainment clubs, for example. We regard these sites as playing, at least in many cases, as significant a role (if not more) in shaping the lifelong-learning experiences of the individual as do formal educational institutions. As the next section demonstrates, this is certainly the case with the lifelong-learning experiences of Australian occupational Travellers, a situation with important implications for conceiving of social capital as regional, rural, and remote community development.

LIFELONG LEARNING AND AUSTRALIAN OCCUPATIONAL TRAVELLERS

The authors of this paper are members of the Traveller Education Research Team at Central Queensland University. The team has examined and followed the educational progress of Australian travelling show people and their children since 1992, and of Australian circus people since 1998. One of the most significant outcomes of this research is the mounting evidence against a deficit view of mobile populations that depicts them as marginalised from the mainstream popular conceptions of social capital (Danaher, 1998, 2001).

Typically, deficit views of mobility have emphasised the negative impact of mobility on travelling populations as well as the communities through which mobile people move (see, for instance, Edwards, 2003; see also Danaher, 1998, 2001). For example, many Australians will be familiar with the negative connotations attributed to show people visiting rural towns (Broome with Jackomos, 1998), and yet many people would also willingly acknowledge that the agricultural show is traditionally an important event in any town's annual calendar – particularly any regional or rural town. The fact that rural communities have a public holiday to afford local people the opportunity to attend the show must indicate at least a degree of recognition of the importance placed on that event.

Recently, the document, *Changing schools: Its impact on student learning* (Commonwealth Department of Education, Science and Training and Commonwealth Department of Defence, 2002), in redefining student mobility and its impact on learning, acknowledged the challenges that mobility can create, but also, in its redefinition of the term, acknowledged that there can be both positive and negative outcomes of mobility for student learning.

> A revised definition [of student mobility and its relationship to learning] centres on the following statement:
> Mobility has the potential to impact either positively or negatively on student learning outcomes where:
>
> - a student has more than two moves in three years; or
> - patterns of family movement involve students in relocating school or periods of time when they do not attend school. (p. 26)

This definition and the ensuing reference to the establishment in 2000 of the Queensland School for Travelling Show Children do not, however, address the potential that the school has realised not only in improving the educational opportunities and outcomes for show children, but also in maintaining the existing social capital within and among the families of show children. Contrary to more popular conceptions, mobile communities such as agricultural shows and circuses possess a tremendous amount of rich social and cultural capital that has accumulated over generations and can be preserved through the provision of innovative educational programs that cater specifically for the needs of Traveller children.

The nature and extent of social and cultural capital connected with show and circus communities cannot be recognised by an annual visit to the show or circus. In-depth and extensive interviews with personnel from these communities over a long period reveal a much richer picture that indicates the importance of innovative programs such as that provided by the Queensland School for Travelling Show Children in preserving social and cultural traditions considered crucial by the travelling communities. Prior to the establishment of the "Show School", when parents' choice of education for their children was restricted to options that either were quite unlikely to lead to

a good basic education or resulted in family disruption (Danaher, 2001, p. 255), it was virtually impossible to combine the higher educational standards demanded in society today with the continuation of a rich, traditional, mobile way of life.

Long before the idea of lifelong learning became so important and prior learning began to be recognised and valued, show and circus personnel provided for one another and the upcoming generations education and training in a range of areas connected to the preservation of their lifestyle. For example, circus families and communities trained their members to take on a variety of roles (Danaher & Danaher, 1999; Danaher & Danaher, 2000; Danaher, Moriarty, & Hallinan, 2000) and, while this training could be considered to be informal and did not attract formal qualifications, it made members employable and dependable and ensured that the show could continue. Our research on the circus grounds conjures images of young children being taught simple acrobatic moves and older people teaching one another more advanced moves and critiquing their performances. Other forms of knowledge and skill related to such areas as making costumes, performing maintenance on heavy duty vehicles, and serving customers with food. Skills in business management and the ability to negotiate dates, terms, and conditions with communities where they wished to perform were also prominent. Without these and many other skills, the unique lifestyle of the show and circus communities could not be maintained.

Show and circus people recognise that their children need a better education than was available to earlier generations, regardless of whether they wish to remain with the show or circus in the future or would like to adopt other career options. The drive for formal qualifications, and even the ability to develop accepted levels of literacy, are both part of the solution to, and part of the problem with, the futures that the current generation of young mobile people face. Improved educational opportunities can widen options for future work and living but can also take these children away from their families in ways and to extents in which many of the rich cultural traditions are less accessible as the children grow further apart from their families.

The establishment of the Queensland School for Travelling Show Children, as its name suggests, enables show children to access effective and sustained primary school education while being able to travel with their families and so, to have continued contact with a rich lifestyle that has been in their families for generations. The Show School appears to be the ideal solution for show people who have also acknowledged that their children learn an enormous amount about a range of topics as they travel the circuits. It is interesting to note that parents of show children have recognised the effectiveness and importance of authentic experiences for generations, while it appears that educators who work with children of predominantly fixed residence – and the educational authorities in Australia that oversee their work – are only just beginning to be more serious about providing practical, rich, and authentic experiences for children.

After operating for more than four years, the Show School will face challenges that many not have been anticipated previously. For example, the time that children spend in travelling classrooms and not directly on the show circuits could continue to lead to improved educational outcomes as the children focus more on their schooling. When this lifestyle is combined with increased access to modern entertainment and communication technologies in the evenings and less informal time with their parents and grandparents, stories about the traditional way of life may be less likely to filter to and direct the lives of the children. In gaining a “better” education in a formal sense, therefore, these children could become increasingly disconnected from the traditional social and cultural capital of which their parents and grandparents are so proud.

Whether this dilemma emerges as a more significant problem than the restricted access to formal education did in the past will remain to be seen. Considering the enormity of the task that show people faced in convincing authorities that they needed an educational provision that accommodated their lifestyle and that helped to keep families and show traditions and forms of employment intact, they are well qualified to address other situations as they arise. The next few years, as the school and its impact are reviewed, will be important for taking stock of a range of outcomes that include reference to the forms of social and cultural capital that make their lives so rich and meaningful.

Finally, in terms of lifelong learning, while some theorists have configured the occupational Travellers' lack of access to formal educational institutions in terms of a deficit model that regards them as being relatively educationally impoverished in comparison to other groups (see, for example, Edwards, 2003), we suggest that a more nuanced understanding of capital in the context of conceptions of lifelong learning allows a very different picture to emerge. That is to say, if we take lifelong learning to mean both, in a vertical sense, the learning experiences with which an individual or group engages throughout her, his or its life, and, in a horizontal sense, the learning experiences with which an individual or group engages across different sites such as workplaces, sporting fields, and so forth (Danaher, Moriarty, & Danaher, 2002), then, far from being relatively impoverished, the learning experiences of occupational Travellers seem particularly enriched. Many occupational Travellers come from families involved for several generations in the business, and given the sheer wealth and diversity of different tasks and roles that they take on, there is ample evidence that occupational Travellers are able to generate considerable cultural and social capital. There is a consciousness among these communities of their relative lack of socially sanctioned capital in terms of formal educational outcomes. What our research has found is the complex ways in which occupational Travellers are seeking to exchange and translate the capital that they generate in other sites into outcomes that benefit them in formal educational terms, thereby arguably strengthening their social capital. This has meant engaging with diverse social networks and partnerships, and using fluid and flexible negotiation practices.

LIFELONG LEARNING IN REGIONAL, RURAL, AND REMOTE LOCATIONS

The starting point for this account of the broader implications of the preceding discussion of social capital, lifelong learning, and Australian occupational Travellers is Howley and Harmon's (1999) identification of "the mythological principle" whereby "rural people are necessarily lesser, more backward, and decidedly uncultured people", and "rural and urban places make one another" (p. 3). We contend that this "mythological principle" encapsulates three crucial ways in which occupational Travellers and residents of regional, rural, and remote communities parallel one another.

Firstly, just as Travellers' identities are predicated on a "settled-residence/itinerancy" binary, so the residents of such communities are constructed as "other" to their urban counterparts. In both cases, the absence of a "level playing field" means that Travellers/regional residents have less access to resources and services than permanently settled/urban residents.

Secondly, just as Travellers' lives reveal the existence of multiple, even if differentially valued, forms of capital, so too do the members of regional communities rely on – and for their survival, must rely on – networks and communities that are differently constituted from those in metropolitan settings. Social capital in these contexts tends to be tied to longevity of residence, association with local heroes, and localised and specialised knowledge (for example, of particular places and/or of specific cultural practices such as farming). This kind of social capital is typically devalued, or not recognised at all, vis-à-vis the centrally-sanctioned social capital of urban residents, yet it is often considered crucial to the resilience and the sustainability of regional communities.

Thirdly, in combination, the absence of a level playing field, and the presence of locally-valued social capital, create particular pressures for lifelong learning to address the unique needs and aspirations of regional residents as much as those of Travellers. This suggests that responsibility for, and contributions to, effective and meaningful lifelong learning in regional areas must be conceptualised as multifaceted, intersecting, and involving a multiplicity of competing and overlapping interests. Furthermore, these interests must be expressed and addressed through dynamic and reciprocal social networks and partnerships. The significance of social capital in this complex situation cannot be overestimated: without it lifelong learning is likely to conceal the imposition of a homogenising and centrally-controlled agenda; with it lifelong learning is likely to provide an invaluable vehicle for individual and community enrichment and empowerment.

CONCLUSION

As with our previous papers in this conference series, we have used this paper to insist that lifelong learning must engage with and celebrate difference and diversity, rather than be complicit in the imposition of a narrowly instrumentalist socioeconomic and political agenda. The concept that we deployed to underpin this argument on this occasion has been social capital, in relation to which we added a distinctively Australian twist to Bourdieu's (1977, 1990, 1993) valuable account of different, and differently valued, forms of capital. Those differences were illustrated starkly in our account of the lived and educational experiences of Australian circus and show people, who for generations have exchanged and negotiated multiple forms of capital. That account has important implications for mapping and interrogating lifelong learning provision in regional, rural, and remote communities: properly harnessed, social capital and lifelong learning can sustain and potentially transform such communities; kept asunder, they can do nothing for fostering the resilience of such communities. All of us – academics, educators, policy makers, community leaders, citizens, and residents – have a fundamental responsibility to work towards this kind of sustainability and transformation; without our respective and shared contributions, it simply will not occur.

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RE-READING BIBLICAL TEXTS: A FEMINIST THEOLOGICAL CONTRIBUTION TO LIFELONG LEARNING

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ABSTRACT

This paper focuses on theological lifelong learning for Christian women; acknowledging the ground-breaking work of feminist biblical scholar Elisabeth Schüssler Fiorenza. Key elements of her theoretical framework and reading strategies are presented, and their application is demonstrated in a lifelong-learning project undertaken by a small group of Australian Catholic women.

INTRODUCTION

Traditionally, Christian women have been relegated to subservient working roles in the church and been positioned in marginal relationships with lifelong, theological learning: the work of studying and producing theology has largely been the domain of men (Schüssler Fiorenza, 1996). However, since earliest Christian times, some women have rejected the association of masculinity with learning and have actively participated in the production and distribution of theological knowledge. This activity became increasingly prolific during the late twentieth century when significant numbers of women claimed women's authority to engage in lifelong, theological learning by producing and distributing multiple feminist re-readings of androcentric biblical and doctrinal texts.

Elisabeth Schüssler Fiorenza (1983, 1984, 1992, 1997) has led the way in this endeavour, with her work making an impact on many people worldwide. Amongst these is a small self-support group of Australian Catholic women, the Sophia group,[1] of which I am a member. In the late 1990s we undertook a study of Matthew's gospel. I designed the study using Schüssler Fiorenza's feminist theoretical framework and reading strategies. The study positively contributed to participants' theological lifelong learning and to their personal growth and development.

The term "lifelong learning" is used in this paper to encompass all formal and informal endeavours towards personal development – based on an understanding of learning as a lifetime's "work in progress". I concur with Longworth's (2002) assertion that lifelong learning is about "continuous education for everyone controlled by individuals themselves, and mediated within the group of learners" (p. 10). Hence I do not view it as being synonymous with "worklife learning", the focus of global capitalism's politico-economic discourse on lifelong learning (Jarvis, 2000).

This paper begins with a synopsis of Schüssler Fiorenza's feminist theoretical framework and reading strategies which shaped the construction of the Sophia group's gospel study. Attention is then focused on the Sophia group and their lifelong, theological learning project. Snapshots from the group's responses to Matthew 8:14-15 are presented as a demonstration of women's

[1] The Greek word *sophia*, meaning wisdom, is used in scriptural texts to represent God as Woman-Wisdom.

capacities to enact change and to productively engage in lifelong learning. Finally, a brief conclusion emphasises the importance of Christian women engaging in theological lifelong learning and knowledge production.

SCHÜSSLER FIORENZA'S FEMINIST THEORETICAL/THEOLOGICAL FRAMEWORK – TOWARDS LIBERATION

For Schüssler Fiorenza (1983), "all historiography is a selective view of the past" (p. xvii) and this includes biblical texts which have their origins in patriarchal cultures. Hence Christian women need to negate this bias in order to recognise ourselves as both "historical subjects and theological agents", for "although we are scripted, contradictions and fissures in the script and between scripts make a reading against the grain possible" (Schüssler Fiorenza, 1992, p. 90). So she proposes a historical reconstruction of early Christianity and a critical feminist hermeneutics that exposes the politically-interested androcentric construction of biblical texts, and she has comprehensively detailed this ground-breaking proposal (Schüssler Fiorenza, 1983, 1984, 1992).

Elisabeth Schüssler Fiorenza contextualises her work in feminist theology and biblical interpretation in the personal and social experiences of women and other marginalised persons. She argues that "feminist biblical interpretation must place at the center of its attention everywoman's struggles to transform patriarchal structures, both in biblical times and in our own" (Schüssler Fiorenza, 1992, p. 8). She grounds her feminist theological theorising in the struggles of oppressed women, and she names women's experience of struggle as her key interpretive metaphor. She states,

> I owe my interest and ability to develop such a critical feminist hermeneutics not to theological studies but to the second wave of the women's movement in the churches and to the emergence of feminist studies. If I were to identify a key interpretive metaphor for my feminist theoretical work, I would choose that of struggle (Schüssler Fiorenza, 1997, p. 224).

To help women in the struggle for self-liberation and to encourage Christian women's participation in theological lifelong learning and knowledge production, Schüssler Fiorenza has mapped a fourfold hermeneutical and rhetorical strategy for feminist biblical interpretation. I focus attention on these strategies now, as they have shaped my own interpretation of scriptural texts as well as the Sophia group's gospel study.

RE-READING BIBLICAL TEXTS: SCHÜSSLER FIORENZA'S FEMINIST STRATEGIES

In writings such as *Bread not stone* (1984, pp. 15-22) and *But she said* (1992, pp. 51-76), Schüssler Fiorenza charts an overarching methodology for feminist biblical interpretation detailing four interactive reading strategies that include both deconstructive and reconstructive assignments. The four strategies – suspicion, reconstruction, evaluation, and imagination – were initially defined in terms of hermeneutical goals: inquiry about the meaning(s) in the text (Schüssler Fiorenza, 1984); and later in terms of rhetorical goals: inquiry about the way the text functions (Schüssler Fiorenza, 1992).

The first strategy – a hermeneutics of suspicion and rhetorics of liberation – seeks to de-naturalise the text revealing the oppressive structures and power relations incribed in it. It involves ideological critique and investigates who and what is excluded from the text and how the inclusions are constructed as well as questioning the rhetorical effects of these on the reader (for example, by raising the issue of whether or not the text is descriptive of what actually happened or prescriptive of what "should" be happening).[2]

The second strategy – a hermeneutics of remembrance (reconstruction) and rhetorics of differences – seeks re-readings of the text from different social locations and oppressive situations (such as gender, race, class, sexuality) so as to reclaim the "dangerous" memory of the oppressed and create a liberating remembrance or reconstruction of early Christianity "as memory and heritage for women-church" (Schüssler Fiorenza, 1992, p. 62). Through this strategy, marginalised persons and events are restored to and/or recentred within the text and different identities and subjectivities of readers are (re)constructed.

[2] For brief overviews of the four reading strategies see Schüssler Fiorenza (1992, pp. 52-55, 131-132; 1993, p. 370; 1997, p. 236).

A hermeneutics of evaluation (proclamation) and rhetorics of equality is the third reading strategy. It seeks to critique the contemporary uses made of biblical texts in worship, study groups, religious teachings, and spirituality programs. This strategy calls for an ethical evaluation of the effects of proclaiming texts within different socio-political locations and for consideration to be given to the liberative needs and desires of peoples experiencing different forms of oppression.

Finally, the fourth strategy – a hermeneutics of creative imagination and rhetorics of vision – is an imaginative re-visioning of scriptural texts from a feminist perspective. It uses artistic creativity expressed in music, drama, art, dance, and/or literary activity to diminish the oppressive patriarchalism within the text and to make present God's vision of justice and freedom for all.

In sum, all four reading strategies are interdependent and have as their goal a feminist theological reconstruction of the past capable of initiating ongoing transformation of the present. With this in mind I now focus on one contribution towards this goal: the Sophia group's theological lifelong learning project. Some of the group's responses to the biblical story of Peter's mother-in-law (Mt 8:14-15) will be presented to exemplify the transformative theologising of these women. I begin by situating these responses in two contexts, firstly the broad context of women's theological lifelong learning and secondly the specific context of the Sophia group.

THE SOPHIA GROUP'S THEOLOGICAL LIFELONG LEARNING PROJECT

Broader context: Women take up the theological lifelong learning challenge

As I have noted earlier, historically, Christian women have been denied access to theological learning and have been excluded from the work of theological knowledge production. However, during the late twentieth century increasing numbers of women became involved in these activities. Within the Catholic church in Australia, for example, this increase was noted in a report on the participation of women in the Catholic church in Australia (Macdonald, et al., 1999) which detailed the findings of research conducted in the 1990s on behalf of the Australian Catholic bishops. The report stated that, "Of those studying theology in Australia at present, women form the majority at both undergraduate and postgraduate levels" (n. 9.9.5).

Of these, many have been touched by and identify with Schüssler Fiorenza's feminist theological work. For example, Schüssler Fiorenza (1995, p. ix) recounts the story of a group of women from Alice Springs who studied her ground-breaking work, *In memory of her* (1983), with the help of a dictionary and an encyclopaedia. Though it took them two years to complete, the women's personal lived experiences compelled them to persevere: no matter how difficult this lifelong learning exercise was, these women would not give up.[3]

Schüssler Fiorenza's (1983) monograph marked a key milestone in my lifelong-learning journey too, though I was advantaged by studying it with the support of other scholars in an academic environment.[4] When I joined the Sophia group towards the end of 1993, I found among group members various levels of familiarity with key insights and concepts of this work though we did not study the book as a group.

Specific context: the Sophia group

The Sophia group's eight members came together out of a need for mutual support; all were actively committed Australian Catholic women brought up in a pre-Vatican II church. Each participant had experienced and recognised the institutional church's marginalisation and disempowerment of women. Though not all group members had formal theological qualifications, we all saw ourselves as lifelong learners and we were all comfortable theologising and learning together in the safe environment that we established at our informal gatherings. Participants happily consented to my using the group's theologising as data for a doctoral thesis, and this led to the Sophia group undertaking a guided study of Matthew's Gospel, which I designed and facilitated.

The focus questions I posed for the study were influenced by Schüssler Fiorenza's feminist

[3] See Schüssler Fiorenza (1997, pp. 224-225) for a similar story about an African-American woman.

[4] Some theologians (Carroll, 1995; Wainwright, 1994a) have written reviews and commentaries on Schüssler Fiorenza's works that help make them accessible to more women.

biblical hermeneutics and her four-fold reading framework.[5] This factor and the participants' experiences of marginalisation as women members of the Catholic church shaped the Sophia group's interpretations. I did not formally outline Schüssler Fiorenza's reading strategies for participants; rather, in sharing our responses to the scriptural texts, I clarified links between what we were discussing and Schüssler Fiorenza's feminist theoretical framework and reading strategies. Moreover, before the study began, I drew attention to Matthew's Gospel as a narrative construct, explaining that the gospel was a story with characters, settings, plot, and narrative patterns and devices (Powell, 1990; Malbon 1992; Malbon and Anderson, 1993; Rhoads and Michie, 1982). I indicated that our study would focus on some of these narrative elements, and this focus is in evidence in the snapshots from the Sophia group's theologising which are presented below.

Within the limits of this paper, I have chosen to illustrate the types of theological issues and insights explored by the women in the Sophia group with selected responses to the story of Peter's mother-in-law from Matthew's Gospel (8:14-15). The two questions discussed below implicitly invited participants to apply one of Schüssler Fiorenza's four reading strategies, namely a hermeneutics of suspicion and rhetorics of liberation.

Reading Matthew 8:14-15 through a lens of suspicion

Matthew 8:14-15, the story of Peter's mother-in-law, was the focus of the Sophia group meeting held in January 1996. Before the meeting, participants studied the gospel text in context and prepared responses to the focus questions. The gospel story itself is short, consisting of the following two verses, "When Jesus entered Peter's house, he saw his mother-in-law lying in bed with a fever; he touched her hand, and the fever left her, and she got up and began to serve him" (Mt 8:14-15).

Catholic canonical interpretations of this story have emphasised Jesus' healing ministry; traditionally the woman's discipleship and leadership roles have been overlooked (e.g., Viviano, 1990, pp. 647-648). Hence, in order to reclaim this story as a woman's story, the second focus-question of the study asked participants to identify narrative devices that mask the discipleship and leadership roles of Peter's mother-in-law. This encouraged participants to employ a feminist lens of suspicion and liberation.

Responses from the women in the group included that the woman is given no name (Kimberley, Frances, Cecilia, Anne); she is described in relation to a man, Peter, and not given her own identity (Cecilia, Wendy); she is not given a voice (Wendy); her daughter is not named or mentioned (Frances); she was depicted as ill and dependent (Cecilia, Anne); the woman's perspective – her thoughts, feelings, reactions – are not given (Anne).[6] As well, Kimberley and Wendy, both wives and mothers, empathised with the woman and the position she found herself in. Kimberley expressed it this way: "When she was cured she got up and served them, when they should have been more sympathetic and served her. She should have been taking it easy. The minute she was well there were expectations on her" (Transcript p. 3).

The third study question noted the similarity between Mt 8:14-15 and the stories biblical scholars refer to as "call" stories (Mt 4:18-20, 4:21-22, 9:9) which tell of Jesus inviting specific men to join him in his work. While the story of Peter's mother-in-law (Mt 8:14-15) may seem like a miracle story and contextually is surrounded by miracle stories, Jesus does not usually assume the initiative in miracle stories; he waits to be asked for help. Jesus does, however, take the initiative in the call stories, as he does in Mt 8:14-15. Moreover, Mt 8:14-15 has a similar pattern to the call stories, as shown in Figure 1.

Call Stories	**Peter's mother-in-law**
* Jesus comes along * Jesus sees * Jesus calls * men follow	* Jesus comesalong * Jesus sees * Jesus touches * a woman serves

Figure 1. The pattern of the "call" stories and the "Peter's mother-in-law story.

[5] The study also drew on Elaine Wainwright's (1994b) article on Matthew's Gospel.

[6] Responses come from the January 1996 meeting transcript (in my possession) or from individual's written submissions (if they could not attend). Except for my own name, pseudonyms have been used.

The study question encouraged participants to consider how and why the pattern for Mt 8:14-15 differed from the pattern of the other call stories. I noted that Jesus calls the men (Mt 4:18-22; 9:9) whereas he reaches out to the woman and touches her, then the fever leaves her. Although the story does not say that Jesus healed the woman, the implication is that he did. Hence, unlike the men called to follow Jesus, the woman's relationship with Jesus seems to have been marked by dependence on Jesus' intervention and subsequently on indebtedness to him. At the Sophia group meeting, this insight came from Kimberley who noted,

> But with the tax collector [Mt 9:9], Jesus calls and he just stops what he's doing, puts it all down and follows immediately. With the woman, she needs a miracle touch in order to follow. It only takes a word for the men to respond, but Jesus has to do something for the woman and then she is left having to repay him for what he has done for her (Transcript p. 5).

Cecilia believes the discrepancy between Mt 8:14-15 and the other call stories is a result of the impact of the story's cultural context. She noted,

> "It would have been more culturally acceptable for a woman to 'serve' while the men 'followed' – the roles are fairly stereotyped. Perhaps it was a way of *controlling* Christian women, presenting the ideal role for a woman in that society' (Cecilia, written submission).

Kimberley and Cecilia, as well as the other Sophia group members, read "against the grain" of the text and adopted a hermeneutical lens of suspicion in identifying aspects of the text that could be viewed as oppressive for women. Yet, a more positive appraisal of the text for women was also possible and this was discovered by participants when Schüssler Fiorenza's other reading strategies were applied to our re-readings of Mt 8:14-15. However, because this paper's main focus is on lifelong learning, I will not detail the Sophia group's responses to Schüssler Fiorenza's reconstructive reading strategies here. What I do need to note is that participants came to recognise and value Peter's mother-in-law as a true follower; that is as a disciple, of Jesus. This profound realisation had a significant impact on members of the Sophia group.

Outcomes

The Sophia participants' upbringing in a pre-Vatican II Catholic church meant that our original understandings of Mt 8:14-15 had been shaped by androcentric canonical Catholic discourses. Yet in the context of this study with its overtly feminist framings and participants' developing skills as readers of biblical texts, the women in the Sophia group were able to view the text from a different perspective: that of the woman. Discovering Peter's mother-in-law as a true disciple of Jesus and as an early church-community leader proved to be a transformative learning experience for group members. Kimberley, in particular, drew attention to this at the end of the Sophia group study of Mt 8:14-15 (in January 1996) when she exclaimed, "I was saying to Wendy this morning, how could two lines, just two lines, be so thought provoking? So much has come from those two lines!" (Transcript p. 8).

Group members had come to value Peter's mother-in-law, an unrenowned woman, as a person in her own right – with thoughts, feelings, and a capacity to exercise agency in response to the pressures and expectations she confronted in her patriarchal socio-cultural context. Inevitably, this re-visioning of Peter's mother-in-law, her relationship with Jesus, and her roles within one of the early church communities, invited – and indeed challenged – group members to re-vision and re-image ourselves, and in doing this to reassess our own roles as women members of the contemporary Catholic church.

Furthermore, similar invitations to self-transformation were received many times throughout the group's extended study of Matthew's gospel. And after the completion of the gospel study, the Sophia group continued to meet and theologise together, though less formally. In fact at this point in time – more than ten years since the group first formed – six members still gather on a regular basis. Hence the Sophia group's theological lifelong learning project is genuinely proving to be a "work in progress", and one that exemplifies Longworth's (2002) definition of lifelong learning as "continuous education … controlled by individuals themselves, and mediated within the group of learners" (p. 10).

In continuing to do the work of theological knowledge production – teaching and learning from and with one another in an informal lifelong learning context – the Sophia women help keep the work of Schüssler Fiorenza and other feminist biblical scholars relevant and transformative for ourselves and also for other women and men whom we encounter in our homes, workplaces, churches, and other social communities. Androcentric, canonical, Catholic discourses still dominate current church teachings, structures, and practices. However, long-term positive outcomes for the whole church community might yet be achieved, if enough women – like the members of the Sophia group – persist in the struggle towards self-transformation, in response to the ongoing challenges of feminist liberation theologies as these are encountered in multiple and meaningful lifelong-learning contexts.

CONCLUSION

This paper has focused on Christian women as lifelong, theological learners and knowledge producers, and has demonstrated women's authority and agency in overturning our historical exclusion from the theological workforce. I have done this by highlighting Elisabeth Schüssler Fiorenza's leadership in clearly articulating a feminist hermeneutical framework and fourfold reading strategy for biblical interpretation, and I have demonstrated that her ground-breaking work has inspired other women, inside and outside the academy. In particular, the responses of the Sophia group to two focus questions on Matthew 8:14-15 have shown that mature-age Catholic women, scripted by pre-Vatican II canonical Catholic discourses, are able to shatter the effects of this scripting and enact liberative re-readings of biblical texts "against the grain" of these androcentric texts.

However, just as Jarvis (2000) raises the issue of the control of learning by institutions, I note that the all-male teaching authority of the institutional Catholic church continues to control mainstream Catholic theological teaching and learning. Hence, it is vital that Catholic women worldwide persist in the work of theological lifelong learning and knowledge production and distribution well into the twenty-first century. The need is there for women to continue to challenge the traditional association of masculinity with theological learning, and to create ongoing lifelong-learning opportunities to teach and learn and to theologise with, from and through one another in multiple and appropriately life-giving spiritual and theological contexts. The subsequent personal development of individual Catholic women may even, at some time in the near future, promote far-reaching reforms of the institutional church itself.

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TEACHING AND LEARNING: A MULTIMEDIA-MEDIATED APPROACH TO PROBLEM-BASED LEARNING

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ABSTRACT

A multimedia-based project was used as an instructional tool to provide a problem-based learning (PBL) environment. Students worked in groups and used the multimedia development process (MDP) to solve problems. This paper focuses on the structuring of the learning process and the mapping of the MDP activities to the constructivist learning framework.

INTRODUCTION

The problem-based method in teaching and learning was developed in response to the weaknesses in the traditional directed instruction, which is generally teacher-centred. This teacher-centred mode does not encourage active engagement of students in their learning. It does not encourage students to become active, independent, and autonomous learners. The problem-based approach to teaching and learning, however, involves students actively in learning while solving a problem, focuses on the learners, and offers more flexibility for learners to enhance creative and critical thinking skills and problem-solving abilities. One of the problems facing many nations today is that graduates from many educational institutions do not have the appropriate skill-sets that are required by existing IT industries. Many of the current graduates are found to be lacking in creativity, communications skills, analytical and critical thinking, and problem-solving skills (Teo & Wong, 2000; Tan, 2000). This mismatch has created a need for educationists to seek new ways to transfer the appropriate skills and knowledge to the students in order to meet the rising expectations of the IT industry.

Currently, many institutions are moving towards problem-based learning (PBL) as a solution to this problem, and as a way of producing graduates who are creative and can think critically, analytically, and solve problems. Since acquiring knowledge is no longer an end in itself but a means of creating better problem solvers and, of encouraging lifelong learning, problem-based learning is becoming increasingly popular in educational institutions as a tool to address the inadequacies of traditional teaching. Traditional approaches such as face-to-face methods are teacher-directed instruction and therefore "do not encourage students to question what they have learnt or to associate with previously acquired knowledge" (Teo & Wong, 2000). The concept of problem-based learning, on the other hand, is seen as an innovative measure to encourage students to "learn how to learn" via "real-life" problems (Boud & Feletti, 1999). Since this learning mode is constructivist in approach, the students participate actively in their own learning and construct their own knowledge (Jonassen, Peck, & Wilson, 1999).

THE MULTIMEDIA-MEDIATED PBL MODEL

Multimedia is changing the way we communicate with each other. It has introduced important changes in our educational system and has impacted on the way we communicate information to learners (Neo & Neo, 2000). With multimedia, users have the flexibility to use this technology in numerous ways in the classroom. Because of its multi-sensory ability, multimedia can be used as an instructional tool to represent and present concepts and ideas using the various media types such as text, images, sound, animation, and video. Thus multimedia can be used to enhance the traditional "chalk-and-talk" method of teaching through multimedia-based instructional strategies.

The evolution of multimedia has provided new possibilities for learners to become involved in their work. With multimedia technologies, students can create multimedia applications to satisfy part of their project requirements. This can make the students active participants in their own learning processes, instead of just being passive learners of the educational content. Multimedia application design offers new insights into the learning process of the designer and forces him or her to represent information and knowledge in a new and innovative way (Agnew, Kellerman, & Meyer, 1996).

With the problem-based approach to learning, the focus moves away from the traditional learning of content towards problem solving, as this approach provides a more realistic and real-world environment for the learners. Figure 1 describes the traditional model of teaching, whereby the lecturer lectures the content to the students; and the conventional PBL model, which changes the role of the lecturer into a coach and of the students into problem-solvers while the environment's emphasis is on solving real-world problems (Tan, 2003). Tan (2000) postulates that the PBL environment "emphasises real world challenges, higher order thinking skills, multi-disciplinary learning, independent learning, teamwork and communication skills". However, this conventional PBL model can be further strengthened with the inclusion of multimedia technology into this problem-based learning environment to enhance the students' learning experience. The reinforced model or the multimedia-oriented, problem-based learning curriculum model incorporates the use of multimedia in the form of a multimedia project into the conventional PBL curriculum model, thus extending the conventional PBL model suggested by Tan (2000).

In this model, students are given a multimedia-based project to create that is based on a real-world problem described to them by their lecturer. In this manner, the students will have to develop the multimedia project through a process known as the multimedia development process, which is at the centre of this model as it provides the students with the means and steps by which they can create multimedia applications. Thus, by using the MDP to create a multimedia project to solve the problem at hand, the students essentially become problem-solvers, while the role of their teacher is transformed into that of a facilitator. Eventually, through the creation of a multimedia-based project, the students will enhance their critical thinking skills, their problem-solving skills, their communication skills and expose them to group or team work of a type which is now required in real-world situations. Multimedia has thus provided a new way for learners to become involved in their work.

With the use of multimedia projects, students are able to construct the knowledge that is presented to them by their teacher in a multi-sensory manner and make learning more meaningful to them. As stated by Agnew et al. (1996), "Student-created multimedia projects are beneficial, in addition, because they often involve substantial work, open-ended assignments, theme-based activities, and knowledge and experiences that the students draw from a wide variety of sources" (p. 9) Multimedia-oriented projects are "a way for students to achieve high self-esteem, to increase their ability to function as self-directed learners, to learn to think effectively, and to practice problem-solving and decision-making."

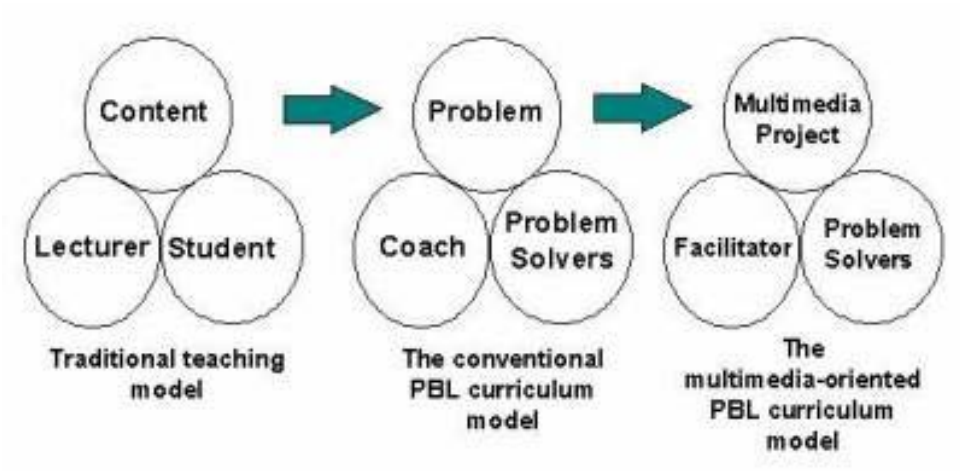

Figure 1. The traditional, conventional, PBL, and multimedia-mediated PBL models. Modified (with permission) from Tan (2003, p.44).

The multimedia-mediated PBL course

This study was based on observations made of the work of 46 students who were enrolled in a course that focused on multimedia concepts and multimedia project development. As such, students taking this course were placed in a constructivist problem-based learning environment. Since the class was structured to be a problem-based learning course, an ill-structured problem was posed early on. Students were told to form their own groups, with each group consisting of 4-6 people. The problem at hand was for them to create a multimedia application that was based on their knowledge, experiences, and research. The students in each group had to discuss and decide on the topic, which they wanted to explore. Once they had decided on the topic, each group had to develop a multimedia content application based on that topic. In order for the students to complete this project, they used the multimedia development process or MDP, which is a series of steps that enable the user to develop and create multimedia content.

THE MULTIMEDIA DEVELOPMENT PROCESS (MDP)

There are six levels to the MDP, which are as follows: (1) planning the project, (2) acquiring the resources, (3) converting the media elements to digital, (4) editing or creating media, (5) multimedia authoring, and (6) packaging for delivery. By using the MDP for creating the multimedia projects, students also take part in activities which are vital in a problem-based learning environment.

These activities are: (a) engaging in identifying problem and solution, (b) research, investigation, and media representation, (c) building a multimedia solution to the problem, and (d) consulting with the teacher. Figure 2 depicts the MDP model (Luther, 1994; Neo & Neo, 1998), which is mapped to the PBL activities.

Planning the project

In this phase, a project plan was made which defined the scope of the final multimedia project. The plan identified the aspect of the project that the students wanted to explore, the overall concept of their project or solution, and the target audience. The proposal included their group storyboard (which expressed the overall solution of their project), the specific interfaces of each screen, the media elements to be used, the information that is to accompany the screen design, and the navigational structure that they intended to use. Each screen of the application was sketched and the entire storyboard was submitted on paper.

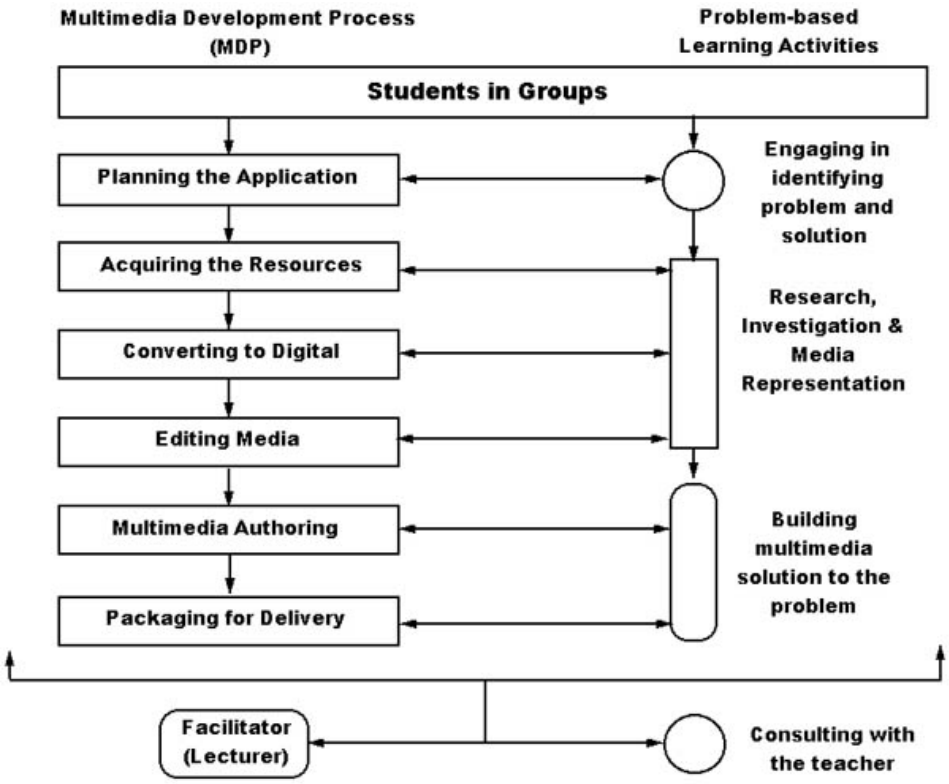

Figure 2. Mapping the MDP model to the PBL activities.

Acquiring the resources

When the topic of the project was agreed, students had to conduct their own investigation and inquiry through researching the topic of choice. They had to gather information on their interest through surfing the Internet or websites related to their topic of choice. Students also went out into the field to gather information through using technology and through interviews and meetings with third party sources who were in fields that related to their topic.

Converting the media elements to digital form

After all the materials had been collected and assembled, the students had to convert those materials that were in analogue form into a digital format. Examples were images in printed form which had to be scanned, or video clips which had to be digitised. These digital media were then saved in different computer files in a variety of file formats.

Editing or creating media

Once the media elements had been digitised and stored in the PC, they were then edited or modified by using software packages. Editing of various elements is an important step in MDP because the students have to use their creativity and skill, as they have to enhance, modify, and even remove elements that deviate from their focus. Since different images, colours, sounds, and video can effect how the user perceives the application, proper editing was conducted to ensure that the media was in line with the focus and direction of the students' multimedia process as they had discussed in the planning stage.

Multimedia authoring

At this stage, elements of interactivity and navigation were incorporated to involve the user in the application and to create a multi-sensory experience, as students continued their solution-building process. The primary authoring tool was Macromedia Director. The students were taught the basics of Director and were given tutorials in creating interactive applications almost every week during the 14-week course.

Once they had completed their applications, which included testing them according to their storyboard as the solution to the problem, they were ready to enter the final step of the MDP, which is packaging for delivery.

Packaging for delivery

At this stage of the process, the multimedia applications were completed. All the groups opted to deliver their applications via CD-ROMs as it was the cheapest and most viable solution. They also had to design a CD-ROM cover for their applications based on the conceptual representation of their final multimedia application. This was to give them authentic experiences in packaging applications for market distribution.

ROLE OF THE TEACHER

Throughout the course, students were encouraged to discuss the progress of their projects with their lecturer. The student groups would debrief the lecturer on their ideas and the direction of the project. The role of the teacher thus changed to that of a facilitator or project manager. The lecturer's task was to provide guidance and to set up some criteria that the students could use to help complete their projects. Students would also come to the lecturer for advice on technical as well as design problems. This provided the lecturer with the opportunity to monitor the students' progress and to make sure each group was not left behind. Certain problems that affected many of the groups such as technical issues, content, team management, and group conflict issues, were highlighted during lecture time. These problems were few and were solved amicably during the classes. However, the biggest problem encountered in the project was the scheduling of meetings between students but they overcame this by using emails and chatrooms to communicate with their peers as well as the teacher. Class lectures that were near the end of the semester were converted to consultation periods for both the students and the lecturer to gather feedback from one another. Once the project had been completed, each group had to give a final presentation in front of the class. This allowed other students to see what their course mates had done and to provide feedback to the presenting group where necessary. This also provided the lecturer with the opportunity to give some comments regarding each group's work. Once all the presentations were completed, groups submitted their final applications on CD-ROMs to the lecturer.

THE CONSTRUCTIVIST LEARNING FRAMEWORK

The multimedia development process (MDP), used in designing this multimedia project, can be described basically as a constructivist learning environment which has embedded in it seven main characteristics (Cunningham, Duffy, & Knuth,1993). These are: (1) provide experience with the knowledge construction process, (2) provide experience in and appreciation of multiple perspectives, (3) embed learning in realistic and relevant contexts, (4) encourage ownership and voice in the learning process, (5) embed learning in social experience, (6) encourage the use of multiple modes of representation, and (7) encourage self-awareness of the knowledge construction process.

The activities involved in the design of this multimedia project, the MDP, reflect the various characteristics of the constructivist learning paradigm. Table 1 shows the characteristics of the constructivist learning and the matching activities in the MDP.

Thus, the activities involved in the MDP can be seen to embrace the important features of the constructivist learning mode. As illustrated in Table 1, the features of the constructivist learning are fulfilled by the activities of the MDP (Luther, 1994; Cunningham et al, 1993). Hence, a multimedia design project essentially can serve as a suitable tool to structure a constructivist learning environment and fulfill its basic requirements.

DISCUSSION

This approach to learning provides a sharp contrast to the traditional, directed-instruction learning mode, which is still used in many institutions of higher learning. In the traditional teacher-directed approach, students are passive learners, do not participate in their learning process, and have very little interaction with one another or with the teacher. In this problem-based learning project, however, students were active learners, participated actively in their learning process, and learned by interacting with their peers and their teacher. They collaborated and cooperated together to solve the targeted problem which was at the centre of their learning. They used the multimedia

development process (MDP) to build their project and multimedia elements to represent their concepts and ideas in constructing the solution to the problem.

In this process, students were engaged in constructing their own knowledge and determining their own learning path in order to reach their own learning goals. In this process, students learned content by a process of knowledge construction rather than knowledge absorption and reproduction as occurs in the traditional learning mode. Besides that, they were also engaged in their learning process, thus learning "how to learn" which will encourage them to be lifelong learners. In constructing this multimedia project, students also learned the essence of team spirit. They learned that in order to achieve success in their group project, they had to regard group interests above individual interests. They learned to cooperate and collaborate together rather than compete against each other for individual grades.

CONCLUSION

This project has clearly shown that the problem-based approach to student learning can be structured as a constructivist learning framework by incorporating a multimedia design project into the conventional PBL curriculum model of learning. The learning process is enhanced and provides student-centred learning activities whereby students enjoy a considerable amount of learning autonomy and control in their learning process. In this study, students learned by socially interacting with their peers and teacher, managed their own learning processes and learning goals, and thus became "owners" of their own learning outcomes.

Constructivist learning environment characteristics	Activities of the Multimedia Development Process
(1) Provide experience with the knowledge construction process	In using the MDP to design a multimedia project, students become active learners and participate in their own learning process instead of being the passive receivers of the educational content. It focuses on the process of knowledge construction rather than knowledge reproduction.
(2) Provide experience in and appreciation of multiple perspectives	This experience enables students to research, plan, and organize the content of the project and structure solutions to the problems. The design of the multimedia project by students can result in different solutions i.e., the problem has multiple perspectives.
(3) Embed learning in realistic and relevant contexts	The design project is anchored in the problem-solving contexts and the design problem is a realistic and authentic task, which is relevant to the students' learning, which they can understand and recognise and can solve by using their previous knowledge and experience.
(4) Encourage ownership and voice in the learning process	In the design project, students are engaged actively in seeking their own information and knowledge and finding their own solutions to the problem based on their previous experience and prior knowledge, thus giving the students ownership and voice in the learning process.
(5) Embed learning in social experience	By incorporating digital media elements into the projects, students are able to learn better since they use multiple sensory modalities, which would make them more motivated to pay more attention to the information presented and better retain the information. Students work in groups and learn from one another by interacting socially among the peers and the teacher, helping one another to achieve the overall group objectives.
(6) Encourage the use of multiple modes of representation	With multimedia projects, students can make use of the knowledge presented to them by the lecturer, and represent it in a more meaningful way, using different media elements such as graphics, audio or video to represent their information, thus the process encourages students to use multiple modes of representation.
(7) Encourage self-awareness of the knowledge construction process.	This process encourages and supports collaborative peer learning while the teacher acts as a facilitator and consultant, guiding students in solving their problems. After completing the projects, students make their presentations; thus having an opportunity to critique and reflect on their works. This process encourages a thoughtful reflection on their experiences, thereby making them aware of the knowledge construction process.

Table 1. Mapping the activities of the MDP to the constructivist learning paradigm (Luther, 1994; Cunningham et al., 1993).

The activities of the multimedia development process or MDP, which is the core of the multimedia design process, echo and reflect all the characteristics of a constructivist learning environment as stated by Cunningham et al., 1993). This constructivist learning is student-centred and provides a complex and media-rich learning environment which can provide optimal development for the students' intellectual and academic capacity. It is a viable and effective alternative to the traditional instructional method.

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THE 'POINT-AND-CLICK' GENERATION: Y NOT START HERE?

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ABSTRACT

This paper is an open discussion about worlds within worlds. It will consider the "point-and-click" generation and what is meaningful to its members in relation to the practices and approaches in academic libraries. The paper will include some suggestions and examples drawn from the literature and from our own experience.

INTRODUCTION

Good practice in learning and teaching has become a core activity for academic libraries. Despite our concerted efforts and most compassionate approaches, many students still prefer to use the frameworks they bring with them. To facilitate the building of bridges, we can initiate dialogue by using the students' framework, of experiences and processes, as a starting point, and not as a model of deficiency.

This paper is not going to leave you gasping with disbelief, nor will it be espousing any groundbreaking theories. It might even be annoying to some because its message is so simple that it's like stating the obvious. But this message is capable of making such a profound difference that it cannot be overstated. At times we may seem a little over zealous, some might even say pedantic, but passion and exuberance lose their purpose when diluted with professional decorum.

Through professional observation and experience we have come to believe that,

- there is a lack of fundamental understanding that our learners and a certain carelessness about respecting and acknowledging the frameworks and processes they bring with them;
- students are not information "illiterate" when they come to the library in their first year;
- it is critical to establish an initial dialogue with our students to create a context and role for what we do in terms of how it has meaning in the frameworks that they use.

Information literacy initiates, sustains, and extends lifelong learning; it is, in effect, a prerequisite. It is common to all disciplines, to all learning environments, and to all levels of education (CAUL, 2001, p. 2). Learners demonstrate a conceptual grasp of lifelong learning when they are able to transfer what they have learned from one contextual environment to another, and when they reach an understanding of underlying structures and frameworks of meaning. Our students are failing to demonstrate lifelong learning as it is traditionally defined; particularly with respect to information literacy. This paper hopes to examine some of the reasons for this, and to acknowledge the skills and creativity students already possess.

RECOGNISING PRIOR EXPERIENCE AND KNOWLEDGE

In November 2003, the University of New South Wales (UNSW) published a paper *Guidelines on Learning that Inform Teaching at UNSW* (UNSW, 2003). The 5th guideline reads, "Learning is more effective when students' prior experience and knowledge are recognised and built on" (p. 41). This guideline demands respect for the student, and their prior learning and experience, and asks us to set an educational context. That is, to explore with the students where the class fits within their experience and course of study, and how it is relevant to them.

The underlying premise is that our students do not enter the classroom as *tabula rasa* (blank slates). They each bring to every learning situation ideas and theories on the topic. These ideas and theories are developed, and accurate, to varying degrees. As educators, we must acknowledge this prior learning and experience, and use it as a base for the launching of new ideas and knowledge. It is no different when teaching information skills.

By and large, the students we teach have vast experience in information seeking. They live in an information-based society and they grew up with the "information super highway," so the web is the first place they look. In a study conducted by the Online Computer Library Centre (OCLC, 2002), three out of four university students surveyed reported that they were completely successful at finding the information they needed for courses and assignments. Nearly two thirds felt strongly that they knew best about what information to accept from the Web and only 4 percent thought the quality of the information they found was not good enough for their assignments.

These students are supremely confident in their own abilities. They are people who believe they are already good information seekers. They share well-engrained beliefs that have been developed and tested over time. They do not approach searches for information haphazardly; they formulate "plans of action" which guide most searches, they think about their searches in advance, decide which resources to use, and develop a strategic approach to the chosen resources (California State University, San Marcos, 2001). If we are to successfully teach information skills to such students, we must start with what they know, or what think they know. Our job is not only to open them to new ideas, but also to dispel or modify ideas and habits that, to date, have convinced them that believe they are successful information seekers with competent strategies, i.e., they're passing aren't they?

To do this, students require an understanding of the context and role of information skills. We can begin by teasing out existing beliefs, examining and testing these beliefs in the light of our mutual experience, and then adding refinements before re-absorbing the ideas back into consciousness. Although students believe they are good at searching for information, they readily acknowledge that they find very little appropriate information when using the Web. More useful information could be gathered in less time through effective database searching (California State University, San Marcos, 2001). In many information skills classes we skip the "teasing-out-existing-beliefs" stage and do not accommodate the students' need to examine and test out the truth of our claims. We head directly to the resources, the new ideas. We say, "These are what you need" and wonder why they resist.

This resistance may be overcome through taking the time to build bridges from the students' ideas to ours. By starting with the students and their experience, we may lead them to discovering for themselves that their current methods, while possibly adequate, might be improved. This means listening to them and taking the time to set the educational context for the class. We should not assume that if we demonstrate the resources, the students will automatically see the value in them. This requires a willingness on our part to relax traditional attachments to the "best" way of seeking information, and spending more time paying attention to who our students are and what is important to them.

WHO ARE OUR LEARNERS?

Tertiary students today are very different to those of 25 years ago. The student population is more diverse and more likely to have competing priorities between family, work, and study. Some are returning to study after many years in the workforce, and others are members of "Generation Y". This group are the impossibly young-looking 18-25 year-olds dressed to the nines in Burberry and Louis Vuitton or dragging their baggy jeans behind them, looking for all the world like a Hip Hop contingent off MTV. However they are dressed most will be clutching the ubiquitous mobile phone that keeps Generation Y connected via 3rd generation technology 24x7

A subset of 18-25 year-olds, members of Generation Y are cynical, street-wise, and remarkably resourceful. They are adaptable, talented, and innovative, but they are also desensitised, skeptical and disengaged. They first want to understand the reason behind any direction, assertion, or policy. They want to know, "Why?"(Chester, 2002)

The expectations these students bring with them strongly influence their attitudes, beliefs, and teachability. Their world is online, immediate, convenient, visual, subjective, non-linear, and constantly changing. What's more, they expect this in all areas of their lives. When they come to the library and sit in our classes or attempt to use our services and collections we find ourselves staring at each other across an impassable ravine. Our library world is controlled, hierarchical, linear, factual, and highly structured (Harley, Dreger, & Knobloch, 2001). Developing a greater understanding of their priorities and what makes them "tick", and modifying our approach, will help bridge this ravine and elicit the most from this group (Chester, 2002).

CONTRIBUTING FACTORS

Not all students are the same. There is no single solution, no one type of user, nor one preferred pattern of use. But there are common profiles.

One of the terms used in the literature to describe today's students is "postmodern". Postmodernism is concerned with the organisation of knowledge. For the postmodernist knowledge is functional. There are no universal truths. One learns things to complete a task (Klages, 2004). Knowledge becomes a "thing" that you put together in pieces, its value is not intrinsic; rather it is utilitarian.

Not only does an understanding of postmodernism gives us a clue as to how Generation Y students conceptualise "knowledge", it gives an indication as to why these students have such difficulty with grasping conceptual frameworks such as information literacy. Some of the characteristics of the postmodern condition, specifically consumerism, superficiality, and knowledge fragmentation, also inform us about the way such students approach our services and, in particular, our classes (Harley et al., 2001, p. 24).

Consumerism

University students today are becoming more like consumers. They are paying ever-increasing amounts for their degrees. Becoming consumers affects their attitudes towards learning and library services. They exercise their right to choose and favour what is the most convenient (Koh, 2003, p. 185). Given the online nature of our world they will choose convenience over quality, almost every time. They want what costs the least and, for Generation Y, in particular, the most prized currency is their time, and related to that, their effort (Harley et al., 2001). This sets up an information economy in which convenience outweighs quality.

A byproduct of a consumerist attitude is the tendency to commodify. Our pedagogy must consider the effects of a culture in which everything has become a commodity.

"Generation Y students pay money to get information not to learn how it is constructed" (Harkin, 1993, pp. 5-6). Such students see what they learn at university in utilitarian terms. It's an insurance policy. You learn what you learn not to be knowledgeable but to avoid a problem further down the track if you ever find yourself in a situation that might require that specific set of knowledge skills.

Superficiality

Part of the fallout from a consumerist approach is being brand conscious so it becomes all about outward appearances. Fro example, students who aren't wealthy can still get around in Tommy Hilfiger – it's just not real Hilfiger. The clothing may be poor quality and may be breaking copyright laws and therefore be illegal, but it satisfies the need of such students to "look" the part. This has implications for the way that they seek information. A concern with outward appearances usually means disengagement with underlying structures, mechanisms or meanings (Harley et al., 2001, p. 2: Koh, 2003, p. 186). Focus is on the search results and how this is related to the assignment (and the final mark) rather than the quality of the results or the integrity of the search process. "These students just seem to want the search recipe, download an article and go!" (Owen, 2003, p. 476). They don't read search instructions and may not even realise their searches are not efficient. Harley et al. (2001, p. 3) make the fair comment that the Web reinforces a superficial approach to information and research because of the nature of its GUI (graphical user interface) point-and-click interface that "conceals more than it reveals".

Knowledge Fragmentation

For postmodernists there is no single truth; all things are to be regarded with equal consideration. This tends to lean toward a more subjective approach to knowledge where validity or truthfulness of information is an attribute assigned by individuals.

This impacts on students' abilities to critically evaluate resources, especially on the Web. The ability of the Web to allow jumping from hyperlink to hyperlink adds to the problem as it fragments knowledge into "bits", and the bits are *not* reassembled in order to create new knowledge. In the event that new knowledge is created, it is not transferred to other contexts where it may be applied. The results of fragmentation "shorter attention span, inadequate preparation, a grade and not a learning orientation … an interest in the surface and not the substance of things" (Harley et al., 2001, p. 3) seem bleak, but it's not an unworkable situation.

Keeping in mind our knowledge of this "generation" and of the unholy trinity of consumerism, superficiality, and knowledge fragmentation, how do we begin?

First and foremost, by being adaptive. Brookfield (1998) believes to be an effective teacher you must be a reflective practitioner. The reflective practitioner is constantly looking through four lenses; one's own experiences, the student's experience, the experience of colleagues, and the literature. They then adapt their teaching in response to what they discover.

Lorie Roth challenges us with the Darwinian statement, "The response to this challenging new environment and new breed of student is not to lament, prohibit, control, or ignore but to adapt" (Roth, 1999, p. 43).

Most of us, when teaching, know when it's not working. We see the SMS "texters" up the back, the people reading the paper online, or those answering their email in the middle of a class. We also see the students who have completely disengaged, with glazed expression, just waiting for the class to end. There's nothing more discouraging than this scenario; nor is there anything more wasteful. We are wasting our time and that of such students. The statement so often heard from colleagues that this scenario is "…better than nothing." Holds dubious validity. In this millennium the roles of librarians are so complex and demanding that time and resources could be much better spent, if only in finding ways to interact more effectively with our students.

Learning theorists (Toohey, 1999; Biggs, 1987) talk about learning outcomes in terms of their importance in expressing and clarifying educational purpose. Documented, expected learning outcomes open the agenda so that students know what the subject offers and what is expected from them. When teaching information skills, it's best to be mindful of this. Too often, the expected learning outcomes are flashed up at the beginning of the class and never referred to again. If we're going to write

them, why not use them to improve the effectiveness of our teaching? Use our expected learning outcomes as a stepping-stone to setting the educational context from which learning will be launched. Biggs (1987) outlines a number of requirements that lead to learning, one of which is the educational context. If the students have not agreed to the value and the purpose of the information-skills class, where is the learning to come from? What reason is there to learn if there is no context?

Set the context, and initiate the conversation about information skills by beginning the class with a mutual agreement about the expected learning outcomes. Better still, let students set their own learning outcomes. Provide a contextual map or picture of how information skills fit into their picture. Use diagrams and images; Generation Y students are visual. Suggest what an appropriate outcome might look like. Give them time to think about their current information-seeking practices and then agree on the outcomes for the class. In this way, they will be targeting which skills they find relevant to their perceived information needs, and the conversation will have begun.

Why not begin the next information class with Google? This provides opportunities to gain insight into the student experience and to impart an initial understanding of the strengths and limitations of Google and their other preferred search tools. Why not give the students a reason they can relate to that may cause them to want to start looking in other places for their information. The students need to discover for themselves the relevance of information skills and the tools we are promoting.

Setting a search question relating to their course of study is not creating relevance. We make it relevant by relating it to their experience. It becomes relevant when students are able to see how information skills are applied to their situation and are different to what they already know. Unless we've tackled the limitations of their current search methods, students don't have a reason to be listening. They believe they have a better way of doing it. We've jumped ahead of them and have become irrelevant – the connection has been missed.

The Web is not going to disappear. Students will still be using it long into our retirement. So while we have the chance to do so, we can provide them with some good modelling. Better they connect and come back than be overwhelmed and intimidated by being told that their processes are suspect and incorrect. So why not make time in our classes to ask the students to explore their current information-seeking practices? Ask them to consider the efficiencies and inadequacies of their searching. Really listen to what they say and use this feedback to adapt future classes. The effectiveness of information-skills classes may be improved through being reflective (Brookfield, 1998).

Any attempt to teach the skills required for the development of information literacy would be enhanced if the effort was also embraced by academics. Findings from Social and Behavioral Research Institute study (California State University, San Marcos, 2001) suggest that information competence needs to be viewed as the responsibility of both faculty and librarians. Many librarians are already in the faculties talking with academics; constantly devising new ways of reaching our students. There's more to teaching these skills than just planning a well-integrated class. It means having discussions that lead to authentic relevance. This type of relevance can only occur when students create their own meaningful relationship with information skills and take responsibility for their learning.

In integrating information skills classes there is the need to be aware of unintended consequences of interventions (Ramsden, 1992). Students make their own interpretation of our actions, so no matter how well-intentioned the learning activities are, students may still work around any real learning. In talking about unintended consequences, Ramsden gives two examples of situations in which attempts to foster deep learning had the opposite effect. The students responded with surface learning because their perception of the learning activity was different to the one intended.

A great deal of student learning is about adapting to the requirements of teachers. One wonders if in integrated classes, our intentions are lost in translation, resulting in unexpected student outcomes. Many integrated classes are closely tied to a single assignment. Students have learned how to fulfil the required steps without engaging in the underlying structure or creating the necessary meaning. When they can't recreate the process in a different context we may rightly assume that what has taken place

is adaptation, not learning. "The quality of learning can be questioned if the knowledge gained cannot be applied to new, dissimilar problems (general transfer) or at least to situations that are similar, but not identical" (Salter, 2003, p. 138).

One response to this may be to consciously devote a component of the integrated class to a "bigger picture" conversation with the students. It might even have to take precedence over an historical and professional urge to "cover content" and it may be that this conversation is needed with many academics as well.

CONCLUSION

This message is simple. Today's university students, particularly those in their first year, aren't responding, as we would hope – not to academic requirements and certainly not to the services traditionally provided by the library. Why? There are many reasons. How do we change it? It's not up to us; ultimately, it's up to them. As learners, they have to want it. How do we help them with this willingness? We make ourselves (and our services) more relevant to their lives. We take time off from teaching processes and start to talk about what matters. We take a considered look at their world and with an open mind ask ourselves "Why *not* start here?"

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IF GRADUATE ATTRIBUTES ARE THE ANSWER, WHAT IS THE QUESTION?

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ABSTRACT

Increasing participation rates focus university education on employability and the development of graduate attributes needed in the complex and dynamic world of work. This paper develops a coherent epistemological framework that can be used to interrogate and transform traditional courses in order to encourage the development of professional graduate attributes.

GRADUATE ATTRIBUTES AND THE EMPLOYABILITY AGENDA

The development of graduate attributes in undergraduate programs is one response to demands in many countries that universities produce employable graduates. The "West Report" presents a vision of higher education in a "learning society", a vision that promotes the role of universities in lifelong learning and that seeks to "equip our graduates to play a productive role in an outwardly-directed, knowledge-based economy" (DEETYA, 1998, p.16). Other recent Australian government reports drawing attention to the need for more employable graduates include *Employability Skills for the Future* (DEST, 2002a), and *Striving for Quality* (DEST, 2002b). In the UK, Lees (2002, p.1) argues that demands for development of graduate skills are driven by the employability agenda which is central to the government's strategic direction for economic development.

The Australian Vice-Chancellors Committee (AVCC, 2002, p.1) projects that by 2020, 60 percent of the workforce will depend on some form of higher education to maintain lifelong learning and earning skills. It is not surprising then that corporate interest in higher education is growing. As the government and business environments become more global and complex (Sennett, 2000), organizations are becoming more dependent on universities to assist in the preparation of employees who can operate in dynamic, uncertain conditions. The Business-Higher Education Round Table (BHERT) report identifies development of generic skills of graduates as a major issue in the "new workplace" (Hager, Holland, & Beckett, 2002, p.7). While a critical approach to employability and development of graduate attributes may be constructed to produce benefits for both business and universities (AVCC, 2002), such a critical approach is lacking. Much of the present debate reflects a poor understanding of the nature of employability and graduate attributes, and lacks any coherent epistemological framework to guide development of teaching and learning practice towards the effective development of professional graduate attributes.

WHICH GRADUATE ATTRIBUTES AND SKILLS?

If one accepts that it is in universities' interests to address employability, one would expect to find significant and sound research which would establish the attributes and skills that recent graduates actually use in the workplace. The literature identifies an overwhelming number of skills and attributes (examples are listed in Table 1). Holmes (2000) identifies a plethora of lists of skills and attributes related to higher education. Some of these lists identify over 100 skills arranged in various categories. Holmes identifies serious methodological problems common to such lists – many lists are products of uncritical semantic elaboration, the results of surveys and brainstorming exercises. Where authors claim that lists of graduate attributes and skills are the product of research, they rarely provide a methodological or conceptual bases for their findings or any explanation for how the lists were derived or how the categories were devised.

West Review (DEETYA, 1998)	Critical, reflective thinking / Technical competence in specialist area / Intellectual openness & curiosity / Communication skills / Research and information literacy skills / Problem solving skills / Teamwork / Self-direction and ethical behaviour
Striving for Quality (DEST, 2002b)	Initiative & enterprise skills / Information literacy / Management skills / Capacity for lifelong learning / Capacity to work in multidisciplinary contexts
Dearing Report – Key Skills [UK] (1997, p.133)	Communication skills / Numeracy / The use of information technology / Learning how to learn
Coopers & Lybrand – Employability Skills [UK] (1998)	Traditional intellectual skills (e.g., critical evaluation, logical argument) / Key Skills (see Dearing list) / Personal Attributes (e.g. motivation, self-reliance) / Knowledge of organizations (and how they work)
Lees – Literature Review (2002, Table 2)	**Personal Qualities** (ten items e.g. reflectiveness, emotional intelligence) **Core Skills** (twelve items including numeracy, self-management, creativity) **Process Skills** (seventeen items including computer literacy, political, ethical and cross-cultural sensitivity, planning, problem solving, negotiating)

Table 1. Examples of graduate attributes recommended by various authorities.

Based on a literature review of graduate employability, Lees (2002) presents employability as a multi-dimensional concept that is difficult to define. She derives a model for employability that involves interaction between an individual's personal qualities, skills, and subject understanding. The model implies an holistic view of these three elements. In Lees' words, "employability is not just about students making deposits in a bank of skills" (p. 2).

Scott, Yates, and Wilson (2001) indicate that programs and courses are rarely designed to address the real problems that recent graduates encounter in their transition to work environments. External program advisory committees often include senior professionals removed from the reality of the novice graduate. To begin to address the need for better information to guide program development, Scott, Yates, and Wilson went beyond paper surveys and conducted methodologically more robust research into the qualities of successful graduates. They conducted extended, structured interviews with selected, high-performing graduates and their supervisors. The research questions were framed around an holistic description of "professional capability" based on five linked categories:

- stance (social-emotional intelligence and personal-emotional intelligence);
- way of thinking (contingent, creative thinking, taking consequences into account);
- diagnostic maps (developed, tested, and refined from reflection on experience);
- generic skills and knowledge (e.g., teamwork, networking, communication);
- profession-specific skills and knowledge.

In addition to this evidence-based description of professional capability, the paper presented a number of valuable observations about how good graduate performance may be defined. "It is how the young graduate reacts when things go wrong, not when things are running smoothly that is a precondition for effective professional performance" (p.7). When asked to indicate what made the performance of specific graduates stand out, interviewees focused first on personal "stance" i.e., on the graduate's personal and social intelligence. The research makes clear that, for professionals, employability is multi-dimensional (Lees, 2002); it is related to the learners' knowledge, skills, and attitudes that are integrated by a sense of identity with the professional role in the context of a supportive professional community of practice (Holmes, 2000). What is important is how the graduate responds holistically, as a person; employability cannot be reduced to a set of discrete attributes or generic skills. Holmes (2002) supports this holistic notion of employability by suggesting that, at professional levels, employers seek graduates who identify with the role to be performed – candidates for interview can have all the skills and attributes a role requires and not be selected because they fail to convey the professional identity the role demands.

The research conducted by Scott et al. (2001) points to the importance of both profession-specific and generic technical skills in developing professional competency. Increasingly, the traditional focus on professional skills and knowledge is being

supplemented with a concern for the development of generic skills and knowledge. However, the processes for developing the other aspects of professional action – stance, way of thinking, and diagnostic maps – are rarely, and usually poorly, articulated in programs. However, authors like Perry (1988) and Denning (2002) have described these aspects of professional education in which knowledge emerges from profound, emotional experiences in which learners can begin to develop a personal commitment to personal values.

While the research of Scott et al. (2001) provides a valid description of professional capability and indicates *what* a professional undergraduate program of study should offer, it fails as a curriculum framework because it does not suggest *how* graduates may be supported to develop professional identity. As Heyward, Gonczi, and Hager (1992) suggest in relation to professional competency, once the curriculum need is outlined, teachers must address questions about how teaching and learning should proceed. What is required is an epistemological framework that can guide curriculum analysis and design and assist teachers and learners in beginning to understand what is involved in developing graduate attributes. The following section offers a framework that may be used to reflect upon and guide the practices of teaching and learning.

A KNOWLEDGE FRAMEWORK FOR EMPLOYABILITY

Lovat and Smith (1995) suggest a curriculum framework that can be adapted to provide an holistic approach to the development of professional graduates. Their framework is based on the work of Habermas (1996)[1]. Habermas suggests that while there is a basic unity in human knowledge, three different ways of knowing have developed in response to three different human interests in knowledge. The three interests are,

- *technical interest* with which individuals seek knowledge to make the world predictable and controllable; it applies to productive work;
- *practical interest* with which individuals seek knowledge to make and share meaning and understand relationships between ideas, it is practical in the sense it seeks "mutual understanding in the conduct of life" (Habermas, 1996, p.100) within common traditions; it is applied in the use of language;
- *emancipatory interest* with which individuals seek knowledge to release consciousness from seemingly "natural" constraints (e.g., physical, social, and psychological constraints) to establish personal autonomy with responsibility; it takes form through the medium of power.

These three orientations to knowledge – technical control, mutual understanding in the conduct of life, and emancipation from constraints "establish the specific viewpoints from which we can apprehend reality" (p. 100).

The three fields of human interest have led to the development of different concepts of knowledge and use three distinct approaches to inquiry. Technical interests are served by empirical-analytical methods of inquiry, applied most powerfully in the physical sciences, to describe the physical world in law-like order. By experiment, observation, and measurement, technical ways of knowing seek to free the inquiry process from the "irritating influence" (Habermas, 1996, p. 96) of opinion and values. Because this method of inquiry has been so powerful in developing knowledge of the physical world, the methodology has gained legitimacy and, as a consequence, this technical approach to knowledge been adopted in traditional education processes. Practical interests are served by historical-hermeneutic methods of inquiry in which facts are determined by their shared meaning (not by observation and measurement). Such understanding is always mediated by pre-understanding derived from the interpreter's initial situation (p. 100). Emancipatory interests are served by critical methods of inquiry that involve self-reflection and action that identify and respond to "frozen relations of dependence that can in principle be transformed" (p. 101).

For the development of graduate attributes, three points arise from this analysis: the first concerns the unity of knowledge, attributes, and personal identity; the second relates to levels of development of knowledge and attributes; and the third is that each way of knowing has particular pedagogical implications.

[1] The 1996 reference is to an edited version of a translated lecture titled *Knowledge and Human Interest* presented by Habermas in 1965.

The unity of knowledge, attributes, and personal identity

All three knowledge interests operate in any holistic approach to a discipline or profession. Technical, practical, and emancipatory ways of knowing are interdependent and are complementary when applied holistically (Lovat & Smith, 1995, p. 86). Emancipatory ways of knowing allow each person to bring together interest and knowledge through the power of self-reflection on experience (Habermas, 1996, p. 102). Through such self-reflection on the dilemmas and conflicts of life and professional practice, individuals develop a sense of personal identity in the professional role, developing what Scot et al. (2001, p. 7) call "diagnostic maps" that equip professionals for autonomous and responsible decision-making and behaviour. Thus, as Holmes (2002) suggests, a unity develops between one's knowledge of the professional role (and the attributes required to perform that role) and awareness of one's identity and responsibility as a professional. In summary, effective development of graduate attributes is a response to the dilemmas of practice, it must be seen as the product of personal development of professional identity, not as precursors – they cannot be learned effectively as separate, discrete attributes.

Levels of development of knowledge and attributes

In the development of knowledge about productive human activity, there is a pattern of development from technical to practical to emancipatory. Emancipatory (third level) knowledge must be grounded in technical and practical knowledge. However, "it is only when we have reached the third level that we are guaranteed true knowledge because true knowledge demands that we be free" (Lovat & Smith, 1995, p.87). Perry (1988) illustrates this process in relation to development of cognitive autonomy and ethical behaviour. From observation of student behaviour, he developed a nine-stage outline of the process by which learners develop cognitive autonomy, ranging from Step 1: total reliance on the teacher for right answers (technical), to Step 9: taking a wholehearted but evolving commitment to a position (emancipatory). Perry maintains that many undergraduates fail to move beyond practical ways of knowing in their studies.

Pedagogical implications of the ways of knowing

Technical, practical, and emancipatory ways of knowing are based on different understandings of knowledge, and on different modes of inquiry. These differences have implications for the learning, teaching, and assessment environments (see Table 2).

USING THE FRAMEWORK IN PRACTICE

The table presented above was used to review and redesign a second-year course, *Embedded Processors* in the Bachelor of Engineering (Cooperative) program at Central Queensland University. For accreditation, the Institution of Engineers, Australia (IEAust, 1999) requires that the program must "equip graduates for lifelong learning" (s. 3.1), and must "ensure that graduates … are adequately prepared to enter and continue the practice of engineering" (s. 2.1). Engineering schools are required to show that graduates have ten nominated generic attributes "to a substantial degree" (s. 3.2). These generic attributes require development of all the three ways of knowing – technical, practical, and emancipatory.

In the BE program, half the students' class time is spent in project-based learning. In second year, students must choose to specialise in an engineering discipline. For students, this represents a major change from the first-year, project-based courses which focus on the initial development of what Scott et al. (2001) call generic skills and knowledge (e.g., teamwork, networking, communication). Within this program, the *Embedded Processors* course seeks to enhance collaboration, teamwork, and professional practice skills as well as to develop competence in technical discipline skills. Students work in teams to complete two, six-week, projects using a problem-based learning process. A review of the *Embedded Processors* course indicated that there was confusion on the part of teachers and learners about pedagogical processes.

	Technical	*Practical*	*Emancipatory*
Purpose of education	Effective and efficient performance of predictable tasks within a community of practice to promote socioeconomic survival and techno-scientific progress.	Engage effectively with language and culture to participate effectively and productively in human activity including work and life.	Reflect critically on personal experience seeking to free the learner from predetermined social constructs, to develop personal autonomy and responsibility and a capacity to change the world.
Process	Reproduction.	Development.	Transformation.
Role of learner	Accept predetermined objectives and reconstruct knowledge defined by the discipline (community of practice).	Operate effectively and productively within the community of practice; enter into dialogue and develop shared meanings and intentions using appropriate discourse for given situations.	Plan and engage in life and professional activity, reflect critically on personal practice, and improve one's capacity for autonomous, responsible action to transform the community of practice.
Role of teacher	Control and direct learning and transmit knowledge.	Devise learning activities that facilitate shared construction of meaning develop effective use of discourse by learners.	Both press and support development of each learner's autonomy and responsibility by encouraging critical reflection .
Authority	Teacher decides objectively what counts as learning.	Teacher's authority is more subjective, negotiates with learner.	Learner responsible for learning; teacher is an observer.
Function of interaction	Identify errors and eliminate misconceptions.	Discuss and share to develop meaning and understanding of shared human activity.	To develop a discursive relationship that assists each learner to reflect critically on life and professional activities.
Assessment	Give correct answers (mainly summative).	Show development of understanding and effective, productive performance (formative and summative).	Describe process of personal critical, self-reflection that indicates learning from experience (mainly formative).

Table 2. Educational processes and cognitive interest (based on Perry, 1988; Lovat & Smith, 1995).

The review indicated that a major problem was that students tended to focus on "technical" ways of knowing. They tended to focus more on completing the project tasks, and insufficiently on the collaborative process (practical knowledge) and on self-reflection (emancipatory knowledge). Biggs (1999) suggests that students need to see explicit alignment between assessment, learning activities, and learning outcomes (with assessment as the critical element in this chain). The assessment requirements for the course were reviewed with the intention of using a pedagogically-sound assessment structure to make clear to students the course requirements.

Habermas' framework outlined above makes it clear that course assessment needed to address all three ways of knowing, and assessment strategies needed to direct students' attention away from their inclination to focus heavily on technical aspects of projects. It was also clear that for many students this course was their first opportunity to study electronics so their technical skills would be weak and this would lead to concerns about the adequacy of their technical knowledge.

Thus the course was built around two major projects. Students' assessment for these projects is holistic in the sense that it is based on one overall, summative assessment of a portfolio presented at the end of the course. Students are asked to assess their own portfolio and to suggest and defend a grade based on provided criteria (including peer evaluation of teamwork). The project assessments are not based on the technical success or failure of the project itself, but on what students can demonstrate they have learned from any success or failure. This is done to provide a "safe" learning environment required to support development of emancipatory knowledge, to encourage critical self-reflection, and the development of

formative, sharing relationships with peers and teachers. It also provides a supportive environment in which participants in the learning process can challenge and extend each other. This approach helps drive out the "fear of failure" common with "correct-answer", technical knowledge and performance-related, practical knowledge, and helps make clear to students that their learning is their own responsibility.

However, technical knowledge remains important, it is required to design and program electronic circuits. Use of traditional, summative, technical-assessment processes (problem sets, exams) (Aldred, Aldred, Walsk, & Dick, 1997) would give students conflicting messages about authority, responsibility, and the development of learner autonomy. Thus summative technical assessment is not used to drive development of technical knowledge, it is promoted instead by linking it closely to the major collaborative project tasks. Early in the course, students participate in structured workshops that are designed to accelerate their introduction to basic technical knowledge. The workshops use learning-centred activities in which students build something. These activities also promote practical interaction between students and the development of communication and collaboration skills. As the term progresses, students are expected to further develop practical knowledge by researching the technical knowledge required for projects. The role of workshops changes as learners do this research. Workshops then provide time for the different project groups in the class to share research findings and to ask questions about the progress of their major projects.

Final course assessment is portfolio based. Learners compile a structured portfolio that includes a reflective journal, a reflective paper (individual research), a workbook, and self and peer assessment. The reflective journal is intended to promote the development of emancipatory knowledge, providing each student with a record of their thoughts and critical reflections on their learning experiences in the course. Students are encouraged to make entries after each learning activity and are provided with support to encourage them to adopt this habit. The workbook contains bound pages, providing a record of activities and projects and the development of technical and practical knowledge. It shows design sketches, calculations, meeting notes, and details of changes to plans together with reasons for the changes. Entries are dated for cross-referencing purposes. Self and peer assessments must address stated course outcomes and criteria, and must be justified in writing.

Development of the portfolio is supported by weekly workshops, weekly team meetings with the course facilitator, and collaborative work on two major design projects in teams of three or four students. On completion, project teams present their projects to the class and must justify their design approach, and answer class questions. These meetings and presentations seek to develop collaboration and presentation skills in dialogic settings conducive to development of practical knowledge. Details of planning, reports, and self-reflections on learning that occurred are documented in journals and workbooks, and provide evidence of learning required for final portfolio assessment.

From a lifelong learning perspective, it is also important that students themselves become aware that development of professional capability requires development of different ways of knowing and different approaches to learning. The Habermas framework can provide students with a framework that they can use to reflect critically upon and, therefore, continue to learn throughout their professional lives.

CONCLUSION

Habermas' framework (Table 2) makes it clear that different kinds of knowledge are involved in developing professional capabilities in graduates. While it maintains that all three ways of knowing have legitimate, complimentary roles in developing graduate attributes, it gives priority to emancipatory learning. Use of this framework to review the *Embedded Processors* course shows the kinds of changes required to convert a traditional, content-based, transmission approach to teaching into an holistic approach that focuses on the balanced development of technical, practical, and emancipatory.

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THE TEACHER AS RESEARCHER OR, HOW I LEARNT TO LOVE LEARNING IN THE DRAMA CLASSROOM

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ABSTRACT

Lifelong learning is a notion that celebrates the willingness of the individual to ameliorate, reinvent, and expand ways of knowing. The author shares experiences of participant-observation with Year 12 students whilst they explore gendered identities in the Drama classroom. Concomitant with this is an evaluation of the author as a teacher and researcher.

SHIFTING PRISMS, CHANGING LENSES

When, in the mid 1990s, I first evaluated the direction of drama-in-eduction at the academic level, to augment my understanding of my own teaching practice and praxis, there was clear evidence that "gender", within the context of the debate, was seen as a fruitful platform for qualitative ethnographic research – a key perspective in feminist, sociological, and

educational readings – and a viable category of cultural analysis in critical theory and performance.

The context, from a professional point of view, informed my beliefs as the teacher and researcher that gender was a definitive agent of identity. My Year 12 Drama students had studied contemporary Australian plays and then had written and performed dramatic expressions that challenged or reflected gendered discourses. It was my belief that gender was determining the cultural attitudes and ideologies evident in the students' work. Boumelha (1994) succinctly states: "Gender …is implicated in every aspect of our personal, social and political existence" (p. xiv). Gender is inextricably linked to knowing self and others; thus its significance in terms of lifelong learning for the individual cannot be underestimated.

The context, from a feminist perspective, situated drama-in-education theory and practice within the realm of masculinist ideology and discourse. Dialectic fingers were pointed at practitioners such as Cecily O'Neill and Gavin Bolton, whose collective influence on drama teaching practice was significant at the time. Accusations of collusion with and reproduction of the dominant hegemony were embedded in the prevailing literature. The dominant hegemony was identified as singularly masculinist – the discourse of male authority and ways of knowing – "universal truths".

Helen Nicholson (1995b) claimed that influential theorists had "…failed to engage with contemporary debates about gender" (p. 27). She considered the impact of their engagement with masculinist discourse upon students' meaning making through drama forms, styles and, conventions as problematic. Issues were raised concerning essentialist assumptions about the universalities of human experience. Helen Nicholson (1995b), in her discussion of Gavin Bolton's work, stated, "The question raised by post-structuralist feminist theory, is who does this notion of the universal include? Who does it render invisible or as living outside of the discourse, and marginal to the education drama text?" (p. 28).

At the classroom level, drama-in-education within this context validated the status quo through a singular, Anglo-centric view of gendered roles in collusion with masculinist praxis. Through the drama text, the drama experience was guaranteed to privilege the experiences of some over others. Helen Nicholson (1995b), demanded that drama-in-education classroom practitioners act as a conduit for "…opening implicit values for scrutiny" (p. 28), so that the opportunity to hear diverse voices might be achieved. She was concerned about what students were learning in the drama classroom through their exposure to dominant hegemonic ideologies embedded in the teaching tools and practices employed in the classroom. As Nicholson (1995a) said of her own drama teaching experience,

> Far from being a gender-neutral activity, children use the context of dramatic playing to become increasingly confirmed in the sex-stereotyped patterns of behaviour…I often felt that young people were constrained by a narrow and culturally defined display of gender roles. (p. 17)

The role of the drama teacher was paramount to the process of students making sense of their life experiences and coming to know self and others.

In 1999, Helen Nicholson, in a paper titled "Drama, Education and Masculinities", stated,

> As such, the influence of peers, the attitude of the teacher, the culture of education, the social expectations of drama, and the ways in which young people actively negotiate their (gendered) identities all contribute to their learning in the drama classroom. (p. 104)

Nicholson chooses to parenthesise "gender". This abandonment of gender as an indissoluble entity is indicative of the significant shift in focus of the drama-in-education debate since the late1990s. Nicholson (1999) identifies the new direction when, in her opening paragraph, she states, "I argue that because feminism has explored the political significance of gender, it has led, perhaps paradoxically, to a reconsideration of the dramatic representation of masculinities, which has consequences for the processes of drama education" (p. 98).

It is important to explore the apparent shift in the debate as articulated by Helen Nicholson. Implicit in her statement is an acknowledgement that the highlighting of issues surrounding masculinities could threaten the power base of feminist theorists and practitioners in the field of

drama-in-education. The celebration of emancipatory change in the exploration and performance of masculinities could in itself engender universalities that, whilst freeing up the performative constraints of males acting out their gendered identities and empowering them within the drama classroom, lead to the silencing of the voices of those marginalised in the past.

Drama teachers, (in Queensland, at least), have been working with their students, in the celebration of diversity and difference through studies of gendered identities for a decade. Contemporary Australian playwrights have ensured, through their playtexts, that the complexities of living gendered lives for young people have been foregrounded and privileged as sites of personal and group validation and meaning making. Nick Enright (1997), when interviewed regarding his play, *A Property of the Clan*, described it as a work where "…the principal theme…is an exploration of male sexuality, male sexual violence – adult male sexual violence – and the way in which young men connect with young women and the other women in their lives". Philip Dean (2000), in his stage adaptation of Nick Earl's novel *After January*, gives voice to Fortuna, the female character seen by some as underdeveloped in the novel "…when Alex and Fortuna spend the night together, I gave Fortuna some moments of speaking to the audience…I didn't want only one person's view of what went on" (p. 98). Both texts investigate gendered identities and interrogate power struggles based on gender.

Helen Nicholson (1999) said in her paper "Drama, Education and Masculinities",

> I have tried to reflect the struggles which face young people in contemporary society – the struggle to find a place, to communicate with others, to articulate feelings of neediness, to learn to live with ambiguity…For drama education to participate in such a debate, and to tackle issues of gendered identities as they inhere in our teaching and children's learning, there is further work to be done (p. 107).

Nicholson (1999) advocated forcefully the significance of gendered identities in relation to learning in the drama classroom, yet she corralled gender, thus erasing its qualificatory power in relation to identities. Inclusive drama means difference and diversity are explored and performed; identity is defined by cultural distinctions (and their inherent power struggles); and meaning is elicited through the narratives of participants. If drama education is a site where conflicts "…for struggle and [the] creative possibilities for greater knowledge of self and others" (Gallagher, 2001, p. 135) are played out, then the relational knowledge of students is intrinsically embedded in their experiences as gendered identities.

How then is identity defined in the current debate? Helen Nicholson (1996) stated that, within the context of gender and drama education in the late 1990s, "…constructs of art and identity …stem from a society entrenched in patriarchal values" (p. 78), and bemoaned what was a clear exclusion of gender from the debates in drama during the 1980s. Bruce Wooding (2000), states, "Identity and culture are sites of struggle…identities are fragmented and draw from many experiences" (p. 90). Wooding supports his concept of identity through citing the opinion of Stuart Hall,

> …we are always different, negotiating different kinds of differences – of gender, of sexuality, of class. It is also that these antagonisms refuse to be neatly aligned; they are simply not reducible to one another; they refuse to coalesce around a single axis of differentiation. (p.90)

Identity is not fixed. Identity shifts and changes in accordance with situations, relationships, environments, social and cultural contexts. Gender informs identity. Gender, within the drama classroom, acts as a powerful agent of self-knowledge and a meaningful cultural location for both male and female participants.

The drama-in-education debate appears to have swung full circle since the 1980s. Nicholson and Bundy (2000) claim,

> A gender inclusive praxis of drama will incorporate the idea that there are multiple sites of power and knowledge. It will incorporate the notion of "agency" by recognising that there are a diversity of power structures and discourses evident in any society or group. (p. 23)

I turn to the work of my Senior Drama students to exemplify how significant Nicholson and Bundy's current stance is in relation to the imperative status of gender as a way of

knowing. The self-devised drama created by my students clearly signifies gender as a powerful and pervasive factor in their performative knowledge of self and making sense of their experiences both as individuals and as members of a group.

As a drama practitioner there is often the challenge of creating or devising ideas, scenarios, or situations through which the students can engage with the "realities" of others. Through applying Jonathan Neelands' "Process Drama" model the students do the story creating. The participants worked with the play, A Property of the Clan, by Nick Enright. I had hoped that the experience would empower the students and offer them the opportunity to create layered meanings where gender is realised in its performative state. However, what the students brought to the experience, as evidenced in their responses to a written questionnaire after the event, was an uncritical acceptance of the status quo. An indicative (female) response was,

> These themes [gendered discourses] are relevant to the world today, because without them we would not have conflict and misunderstanding between the two genders today. (Student)

The sense of inevitability was strong. If lifelong learning implies, in the main, a positive experiential process of knowing self and others then my concern lay with the students' willingness, as attested to above, to roll over and play dead. What did this imply about the teaching practices and working materials that I employ in the classroom? How do they construct and reconstruct images and voices of gender? What, as a feminist teacher do I bring to my teaching?

Helen Nicholson (1995b), refers to "communities of discourse" that provide a stratagem through which meaning and cultural practices are prescribed and maintained. The site of the research is the campus of a boys' boarding/day school. The participants are Year 12 Senior Drama students in a shared-subject class comprised of boys from the research site and girls from the nearby girls' boarding/day school. What I see in my classroom are the institutional practices of single-sex boarding schools contributing to and controlling students' ways of knowing as gendered beings. Self-reflexive practice highlights for me as the teacher and researcher the multiplicity of selves that I bring to the classroom; those that my students require of me overarched by those that the institution demands of me. Lifelong learning, for both the students and myself, is influenced by an institutional ideology defined and articulated through a community steeped in masculinist discourse.

To gain a sense of distance as the teacher and researcher from the dominant community ideology through what Ely (1991) calls "…making the familiar unfamiliar…" (p. 125), the students were asked to devise a script that reflected representations of masculinity and femininity. Script extracts from students' work highlight their perceptions of gendered identities. Student A's (female) monologue focused on images of physical self-obsession:

> "I look like a hippo."
> " '… now we have Ms Hugeass [sic] wearing a lovely gown, complimented [sic] by thunder thighs and donut rolls"'
> "I should be part of AA anonymous, well more like fat arse anonymous."
> "Mirror, Mirror on the wall who's the fatest [sic] of them all [?]"
> " 'You are Anna.' "
> "I know, its [sic] me my big fat thighs and stomach…no guy could ever love Miss Piggy…."

It is evident that the author is clearly aware of the insidious nature of the masculinist "view" of the female form as object. Her character knows the audience, as both spectator and the Mirror, is judging her. (Initial stage instructions state, "Her mirror is the audience.")

The character's opening lines are,

> "Shit my arse looks huge, so much for black making you look thin. I look like a hippo. *What are you looking at?*"

It is not possible to assume that the student deliberately chose the word "looks" rather than "is", however it could be inferred that this is a symbol of female ways of knowing. Note that the audience is also "looking". In the process of the character exposing herself to the audience it is possible to see that the audience as the symbolic mirror, whilst initially confronted by the character, becomes the omnipotent judge of her worth. The character cannot avoid the audience's gaze. In the character's final,

desperate dialogue she pleads with the mirror (the audience).

> "You make me fat…do you want me to go down in history as the fattest thing on earth, get me out…please. Mirror, mirror on the wall who's the thinnest of them all…I am…Anna is the thinnest of them all…."

Student A over-states the physical size of familiar domestic objects in her monologue. This is a deliberate imaging of female consciousness that allows the performance to evolve in a confronting way.

Peta Tait (1994), in her discussion of theatre spaces and their significance in relation to performance and meaning, states,

> Spatial location is crucial to the formulation of a performative identity because society orchestrates and structures space to control, contain, exclude and imprison. Therefore space is also a contested environment of signification in theatre as it is in society, especially in relation to categories of gender, class and race. (p. 132)

Tait's discussion of spatial expressions is crucial to the process of analysing student work in the search for meaning. Students' willingness to challenge cultural and social signifiers of gendered identities can be read as a powerful form of displaying an intrinsic awareness of culturally defined gender status. Senior Drama becomes a vehicle through which the individual can challenge his or her relationship with, and contest the meaning of, cultural codes that "control, contain, exclude and imprison." (Tait, 1994, p. 132) Student A has achieved this through creating a temporal relationship between the character and the objects that define her own identity.

Student B (female), in her preface to her work, states "This pressure [teenage sex], often gender-specific, gives rise to issues of equality: what difficulties must teenage men and women endure as sexual beings, and how influential is gender in relation to these?" Student B incorporates titled episodes into her script. Episode 3 is titled "Mates" where "staging is …confined to an oversized sardine tin [which] …reflects the fierce, impenetrable bond between male homosocial groups". Another episode is titled "The Ladder" where "the higher level of the female represents her moral standards, however, it is the persistence of the male to have power over the female, and his eventual success, [that] represent[s] the dominance of males…in relation to sex". Student B challenges and deconstructs male and female stories, both fantasy and real; yet, like other female students, expresses a sense of inevitability when she states "the notion of male power dominating female resistance can be identified in the female's 'mechanical' recital of two of the male's lines. This suggests that the male's words…must be dutifully followed by the female".

Student C (male) describes his play titled *No one owns females* as "…written to show the attitude that males have towards females…many males in relationships think that they have ownership over females and like to dominate what they have between them". The issue of property and ownership was significant in the discourse employed in the majority of the boys' scripts. Often the mood of the scenario the student created was aggressive; character relationships were fuelled by tension and the language of the dialogue was confrontational and base. As Student C acknowledged, power over female companions is seen as a cultural "given". Weedon (1987), as cited in Weatherall (2002), states," Power is not something that can be owned but, according to Foucault, a 'force relation' exercised through discourse…" (p. 80). This is evidenced in Student C's script.

> Jake: Yeah, f*** off, get your own women, or can't you do that you little private school poofs?
> Phil: Get over it, you don't own these girls. Piss off and leave them alone.

Ann Weatherall (2002) contends, "…the concept of gender is itself constituted by the language used to refer to it" (p. 80). Both male and female characters employ the active, violent language that is evident in many boys' scripts; however, the equally virulent words of the female characters do not impact on the events in the scenarios being played out. The power of language in the active role is the preserve of the male characters that often have to both verbally and physically fight it out with other (predatory) males. It is apparent that Helen Nicholson's "communities of discourse" prescribe and maintain dominant cultural practices in relation to gender and identity.

The debate in drama-in-education has shifted significantly since the 1980s. In the here-and-now, notions of self and others and the enactment of self-knowledge in the drama classroom, as I have observed when working with young people, are inextricably linked to gendered identities. Boumelha (1994) states, "It is impossible to stand outside the systems of gender difference…none of us can say 'That doesn't affect me'" (p. *ix*). As the teacher and researcher I continue to learn from my students about my own practices as well as their perceptions of themselves as gendered individuals. In the words of Angela McRobbie (1991) "For me… I am continually learning from my students in the same way as I hope they are learning from me" (p. 73). Lifelong learning embodies gender. Gender, as an agent for knowing self and others, is a discourse that gives form and shape to identity.

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COMPARATIVE ACADEMIC PERFORMANCE OF LIFELONG LEARNERS IN ENGINEERING AND TECHNOLOGY

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ABSTRACT

The engineering-technologist degree is an important element of continuing engineering education for many members of the engineering workforce. This paper reports on the study of close to 9000 unit enrolments to gain an objective understanding of the withdrawal, persistence, and academic-performance characteristics of both engineering-technologist and professional-engineering students.

INTRODUCTION

In many countries, including Australia, the engineering workforce incorporates the occupational classifications of professional engineer and engineering-technologist. Entry to these professional occupations normally requires the completion of a four-year and three-year, respectively, undergraduate university bachelor's degree. The engineering-technologist

degree is an important element of lifelong learning and continuing education for many members of the engineering workforce returning to study in order to upgrade their formal academic qualifications. In Australia, professional-engineering and engineering-technologist programs can be found together in the same institution, with students from both programs studying some common units.

Anecdotal reports from Deakin University academic staff indicated a perception that engineering-technologist students were not as academically strong as their professional-engineering counterparts, and were more likely to withdraw from or fail to pass units in which both student groups were enrolled. However, no formal research had previously been conducted. So, to gain an objective understanding of the withdrawal and performance characteristics of both engineering-technologist and professional-engineering students in the engineering and technology programs at Deakin University, a study was undertaken of close to 9000 unit enrolments over the period 1996 to 2000.

THE AUSTRALIAN ENGINEERING WORKFORCE

Prior to 1980, a four-year bachelor of engineering and a three-year diploma of engineering were available in Australia as undergraduate university programs. Both these credentials led to professional-engineering status and full membership of the Institution of Engineers, Australia (IEAust). After 1980, in an effort to standardise entry qualifications and clarify educational pathways, the IEAust removed the diploma route to professional-engineering status. This change created an occupational gap between professional engineers and two-year qualified engineering associates. A 1989 report on lifelong learning, which articulated education for the engineering workforce, recommended the recognition of a new, three-year professional qualification for the distinct occupational category of "engineering-technologist" (Lloyd, Stokes, Rice, & Roebuck, 1989). The IEAust supported this move and incorporated this occupational category into its National Generic Competency Standards that provides the framework linking occupational classification, educational preparation, and professional recognition in Australia. The modern Australian engineering workforce consists of,

- professional engineer – four-year university qualified;
- engineering-technologist – three-year university qualified;
- engineering associate – two-year university and/or vocational sector qualified;
- engineering technician – one-year vocational sector qualified;
- engineering tradesperson – trade qualified (Institution of Engineers Australia, 1999).

THE DEAKIN UNIVERSITY ENGINEERING AND TECHNOLOGY PROGRAMS

The Deakin University School of Engineering and Technology offers a three-year bachelor of technology (BTech) program, a four-year bachelor of engineering (BE) program, and Masters and Doctoral engineering programs in flexible delivery mode. The BTech program provides an exit point with a nationally-recognised, professional qualification for those students aspiring to the occupation of engineering-technologist, as well as for those intending BE students who, for academic, employment, or other reason(s), are not able to complete the four-year course. The BTech program also provides a staging post for students who are unsure of their capacity to complete the BE course to "test the water" and to swap courses if their preliminary studies provide confidence boosts.

The BTech degree at Deakin is an important avenue for continuing engineering education; a previous survey of graduates of the School of Engineering and Technology's undergraduate programs (Palmer, 2002) revealed that BTech students are older (more likely to be mature-age students) and are more likely to study off-campus (because of work and other commitments) than their BE counterparts. Survey respondents had been graduates for four years or less, and the average age of BTech respondents was 33.5 years, compared to 28.0 years for BE respondents – this was significantly different ($F_{41} = 6.031$, $p < 0.019$). The proportion of BTech respondents studying in the off-campus mode was 52.9 percent, compared to 12.0 percent for BE respondents – this was also significantly different ($X^2_1 = 8.311$, $p < 0.004$). 40.5 percent of respondents were BTech graduates, hence BTech students comprise a significant group amongst all undergraduates in the Deakin School of Engineering and Technology.

An investigation of the attributes or competencies required by the engineering professional accrediting bodies in the UK (Engineering Council), USA (Accreditation Board for Engineering and Technology), and Australia (IEAust) for the occupational categories equivalent to professional engineer and engineering-technologist reveal,

- a high degree of consistency between the three countries,
- the differences between the two occupational categories are of degree or depth rather than kind (Lloyd, Ferguson, Palmer, & Rice, 2001).

This similarity and difference is reflected in the Deakin BE and BTech programs for the Manufacturing discipline. BE students complete 32 units of study over four years (or equivalent) while BTech students complete 24 units of study over three years (or equivalent). The BTech course contains four elective units, and of the remaining 20 units, all but four (hence 16) are identical to those taken by the BE students. The four units unique to the BTech course are two units of mathematics and a unit of physics that employ an algebraic foundation rather than calculus, and a single-semester, final-year project unit. The BE course contains four elective units, the 16 units common with the BTech course and an additional 12 units (equivalent to one and a half years) unique to the BE program. These 12 units include a calculus-based mathematics and physics foundation, a broader range of engineering technology units, additional engineering design units, an additional management unit, and a two-semester final year project.

With 16 common units between the two programs, there are a significant number of classes with both BTech and BE students. Perhaps because the BTech course has reduced secondary-school mathematics and science entry prerequisites compared to the BE course, there has been an anecdotal perception amongst some academic staff that BTech students are not as "academically strong" as their BE counterparts and hence, in BE/BTech common units, more prone to withdrawing from study prior to the exam and/or more likely not to pass the unit. Given that BTech students form a significant proportion of the school's total undergraduate enrolment, it was considered important to objectively determine the academic performance of the two principal classes of students in the school. This was not intended to fuel any debate about which was the "better" student group; rather, it was intended to assist the academic staff of the school to understand the different characteristics of these two student groups so that teaching and learning strategies could be appropriately adapted.

METHODOLOGY

This research study aimed to discover quantitative relationships between academic performance and course of study via a longitudinal statistical analysis of student academic results in a representative cross-section of study units from the undergraduate engineering programs at Deakin University. Ten units of study were selected from the first two years of the Deakin engineering programs. The list was chosen to include units common to both the BE and BTech programs, as well as some units prescribed only for the BE program but which include some BTech-enrolled students who elect to study at a higher level and/or hope to change courses. Another selection criterion was to use data from units having relatively large enrolments. This was done in order to enhance the validity of the statistical comparisons. The inclusion of level-one and level-two mathematics, management, and materials units allowed issues of first-year progression in these subject areas to be considered. The range of subject areas covered by these units included physics, mathematics, computing, engineering science, and engineering management. The list of units included in the study, and their nominal year level, is included in Table 1; those shaded are prescribed for the BE program only.

From the university student information database, enrolment and results data were downloaded for each of the units identified in Table 1 for the years 1996 to 2000 inclusive. The following statistics were compiled for each unit in each year;

- number of students enrolled – (all, BE, and BTech);
- percentage of enrolled students withdrawn (student terminated unit enrolment) – (all, BE, and BTech);
- chi-square test of independence of course enrolment and withdrawn status;
- large sample inference test of the proportions of withdrawn students in the BE and BTech groups;

Unit code	Unit name	Year level
SCC172	Basic programming concepts	1
SCM113	Discrete mathematics	1
SCM124	Introduction to mathematical modelling	1
SCM228	Engineering mathematics	2
SEB121	Fundamentals of technology management	1
SEB221	Managing industrial organizations	2
SED102	Engineering graphics and CAD	1
SEM111	Materials 1	1
SEM212	Materials 2	2
SEP101	Physics 1A	1

Table 1. Units included in the research study.

- excluding withdrawns, chi-square goodness-of-fit test for the distribution of final grades (fail/pass/credit/distinction/high distinction) between BE and BTech;
- excluding withdrawns, mean final mark/score – (all, BE, and BTech);
- excluding withdrawns, one-way analysis of variance (ANOVA) test of mean final score for BE and BTech groups;
- excluding withdrawns, percentage of students who failed (to pass) – (all, BE, and BTech);
- excluding withdrawns, large sample inference test of the proportions of failed students in the BE and BTech groups;
- percentage of enrolled students "wasted", that is, the percentage of withdrawn and failed students combined;
- large sample inference test of the proportions of "wastage" in BE and BTech groups.

For each unit the data for the five years 1996 - 2000 were combined and the above statistics were re-compiled to provide an overview of each unit. Finally, all the data collected were combined and the above statistics were re-compiled to provide an overview of student performance in the engineering and technology programs at Deakin University. For this research project, a significance level of 0.01 was used.

RESULTS

The data collected represents 8915 student enrolments in individual units of study (subjects). 6380 (71.6 percent) of these enrolments were BE students and 2535 (28.4 percent) were BTech students. Table 2 presents the results compiled for each unit from the combined summary unit data over the period 1996 to 2000. Any significant deviation in the data for particular years compared to the combined summary results is noted in the discussion below. Table 2 also presents the overall results compiled from all of the collected data combined. Where there is a statistically significant difference between on- and off-campus results ($p \leq 0.01$) the data pair is shaded. Figure 1 gives the distribution of final grades for BE and BTech students based on all data combined.

DISCUSSION

Overall

Combining all collected data, the following observations were made. Overall, the BTech withdrawal rate was about 20 percent higher than for BE students, whether a student withdrew or not was highly correlated to course enrolment ($X^2_5 = 40.107$, $p < 1.5 \times 10^{-7}$) and the rate of withdrawal was significantly different between the two student groups ($Z = -6.027$, $p < 1.7 \times 10^{-9}$). There was no significant difference between grade distribution, mean final mark or failure rate between the student groups. Because of the higher rate of withdrawal for BTech students, the corresponding overall wastage rate was also found to be significantly higher ($Z = -5.155$, $p < 2.6 \times 10^{-7}$).

Unit	Course	Enrolment (no.s)	Enrolment (%)	With-drawn	Mean score	Failed	Wastage
SCC172	BE	676	68.0 %	32.7 %	58.8 %	19.6 %	45.9 %
	BTech	318	32.0 %	34.9 %	55.3 %	29.0 %	53.8 %
	All	994	100.0 %	33.4 %	57.7 %	22.5 %	48.4 %
SCM113	BE	746	87.8 %	23.7 %	59.8 %	22.5 %	40.9 %
	BTech	104	12.2 %	35.6 %	62.5 %	14.9 %	45.2 %
	All	850	100.0 %	25.2 %	60.1 %	21.7 %	41.4 %
SCM124	BE	889	89.3 %	41.1 %	52.0 %	31.7 %	59.7 %
	BTech	106	10.7 %	50.0 %	49.6 %	39.6 %	69.8 %
	All	995	100.0 %	42.0 %	51.8 %	32.4 %	60.8 %
SCM228	BE	537	82.1 %	27.8 %	59.7 %	16.2 %	39.5 %
	BTech	117	17.9 %	19.7 %	63.4 %	11.7 %	29.1 %
	All	654	100.0 %	26.3 %	60.4 %	15.4 %	37.6 %
SEB121	BE	585	64.3 %	31.5 %	62.0 %	17.7 %	43.6 %
	BTech	325	35.7 %	35.1 %	59.5 %	15.6 %	45.2 %
	All	910	100.0 %	32.8 %	61.2 %	17.0 %	44.2 %
SEB221	BE	588	58.8 %	31.6 %	63.1 %	14.7 %	41.7 %
	BTech	412	41.2 %	35.9 %	64.9 %	9.1 %	41.8 %
	All	1000	100.0 %	33.4 %	63.8 %	12.5 %	41.7 %
SED102	BE	727	66.0 %	39.5 %	58.0 %	23.0 %	53.4 %
	BTech	374	34.0 %	52.1 %	53.1 %	27.4 %	65.2 %
	All	1101	100.0 %	43.8 %	56.6 %	24.2 %	57.4 %
SEM111	BE	643	66.8 %	42.2 %	63.6 %	17.2 %	52.1 %
	BTech	319	33.2 %	53.0 %	60.7 %	18.7 %	61.8 %
	All	962	100.0 %	45.7 %	62.8 %	17.6 %	55.3 %
SEM212	BE	211	65.3 %	19.9 %	62.1 %	13.6 %	30.8 %
	BTech	112	34.7 %	25.9 %	63.0 %	14.5 %	36.6 %
	All	323	100.0 %	22.0 %	62.4 %	13.9 %	32.8 %
SEP101	BE	778	69.1 %	25.5 %	60.9 %	19.8 %	40.2 %
	BTech	348	30.9 %	33.9 %	55.1 %	36.5 %	58.1 %
	All	1126	100.0 %	28.1 %	59.3 %	24.6 %	45.7 %
All units combined	BE	6380	71.6 %	32.6 %	59.6 %	20.4 %	46.4 %
	BTech	2535	28.4 %	39.3 %	58.8 %	21.6 %	52.4 %
	All	8915	100.0 %	34.5 %	59.4 %	20.7 %	48.1 %

Table 2. Summary results for individual units and all data combined.

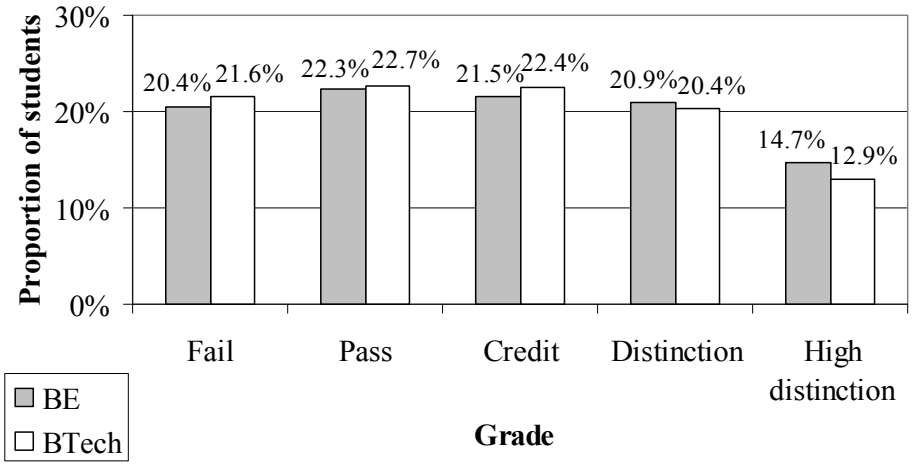

Figure 1. Distribution of final grades based on all data combined.

Persistence

Considering the combined summary results for each of the ten units, in only one unit, SCM228, was the BTech withdrawal rate lower than the corresponding BE rate. However, this is a second-level engineering mathematics unit, and BTech students enrolled in this unit must have already completed the level-one BE mathematics. So, presumably, any BTech students struggling with BE mathematics will have already left the BE mathematics stream.

This is suggested by the significant BTech withdrawal rates observed in the level-one BE maths units SCM113 (35.6 percent) and SCM124 (50.0 percent). In four of the ten units considered, the higher observed BTech withdrawal rate was statistically significant and, when all data were combined, the overall BTech withdrawal rate was significantly higher.

When withdrawal and failure rates were combined to yield wastage, again SCM228 is the only unit where the BTech rate is lower than the corresponding BE rate, presumably for the same reason(s). In three of the ten units the higher observed BTech wastage rate was statistically significant and, when all data were combined, the overall BTech wastage rate was significantly higher.

Academic performance

After combining the five sets of data for each unit, only one of the ten grade distributions was significantly different, that was for the physics unit SEP101. As noted previously, when all data were combined, the overall grade distribution was not significantly different – see Figure 1. Two units out of ten had a mean final mark that was significantly different, SED102 and, again, SEP101 – in both cases the mean BE mark was about 5 marks higher than the BTech result. As noted previously, when all data were combined, the overall mean final mark was not significantly different. Two units out of ten had a BTech failure rate that was significantly greater than the BE rate, SCC172 and, again, SEP101, where the BTech failure rate was approximately twice that of BE students. As noted previously, when all data were combined, the overall failure rate was not significantly different.

While overall there was no significant difference in academic performance between the two groups, the unit SEP101 Physics 1A, stands out as the exception, with significantly poorer academic performance by BTech students. This unit requires strong mathematics and science preparation, which BTech students may not have completed at secondary school. BTech students would not normally be enrolled in SEP101, but those considering transferring to the BE stream would take this unit instead of the unit SEP115 Physics for Technologists. SEP115 is an alternate version of the BE physics unit that covers principally the same topics, but employs an algebraic approach to the underpinning mathematics, rather than the calculus-based mathematics used on SEP101. Originally, all students were required to take SEP101, but poor results from BTech students resulted in the development of SEP115. The results obtained here suggest that the calculus mathematics continues to be a problem for BTech students, and supports the decision to introduce the alternate unit SEP115 for BTech students.

General

As noted previously, BTech students are more likely to be studying in off-campus mode and/or to be mature-age students. The literature suggests that students studying off-campus are less likely to complete their studies than their on-campus counterparts, but that those that do persist achieve comparable academic results on average. Glatter and Wedell, in 1971, suggested, “The purely quantitative data on wastage in correspondence courses indicates two things: that it is much higher than would be expected in full time oral courses; and that it is particularly heavy in the early stages of a course...At examinations, correspondence students seem to do as well or better than their counterparts taught the same subject orally.”(p. 49) McIntosh and Morrison report on two Australian studies in 1965 and 1967 that show an average 33 percent withdrawal rate for first-year correspondence students, with only 34 percent eventually graduating (McIntosh & Morrison, 1974). Woodley and Parlett reporting on Open University of the United Kingdom (OUUK) students in 1982 found that 28 percent of provisionally enrolled new students did not complete their final registration; for all students finally enrolled, 24 percent withdrew prior to their course examination. Furthermore, the failure rate for those that sat their final examination was 6 percent; giving a overall “wastage” figure of 29 percent of all enrolled students (Woodley & Parlett, 1983). Urban et

al., in a 1997 review of Australian students who commenced their studies in 1992, found that full-time students had the highest completion rate (73 percent) while external students had the lowest completion rate (37 percent); the mode of study was significantly correlated to academic outcome (Urban et al., 1999).

Many off-campus students are also mature-age students; electing to study in the off-campus mode so as to be able to combine their work, study, family and/or other commitments. Eaton reported that mature-age students have comparable failure and withdrawal rates to conventional entrants, but achieve higher academic results than their younger counterparts (Eaton, 1980). In a 1980 review of Australian literature on the academic performance of mature-age students, Eaton and West report that mature-age students perform better than conventional entrants do (fewer failures and higher average grade), but have a higher dropout rate (Eaton & West, 1980). Shah and Burke using Australian student data in 1996 concluded that the probability of course completion decreases with the age of the student (Shah & Burke, 1996).

CONCLUSION

Based on a longitudinal study of 8915 unit enrolments in first- and second-year level units in the undergraduate engineering and technology programs at the Deakin University School of Engineering and Technology, it was found, overall, that

- the BTech withdrawal rate was about 20 percent higher than for BE students,
- whether a student withdrew or not was highly correlated to course enrolment,
- the rate of withdrawal was significantly different between the two student groups,
- the grade distribution was not significantly different between the student groups,
- the mean final mark was not significantly different between the two student groups,
- the failure rate was not significantly different between the two student groups,
- the overall wastage rate (withdrawn rate plus fail rate) was significantly higher for BTech students (principally due to the high rate of withdrawal for BTech students).

The higher BTech withdrawal rate may be due to the fact that BTech students are more likely to be studying in off-campus mode and/or be mature-age students. While this result is compatible with the suggestion from the literature that these classes of student have a higher rate of withdrawal from studies, further research exploring the individual reasons for student withdrawal is required for a definitive answer. For those students that persisted in their studies, generally, there was no overall significant difference in academic performance in terms of grade distribution, mean final mark, and failure rate. The anecdotal perception that BTech students are not as academically strong as their BE counterparts is not supported by these findings, and this result has been conveyed to staff at the school in an effort to counter this perception. The findings do not suggest that changes in current teaching approaches are required, but do provide support for the dual-stream mathematics approach – algebraic maths for BTech students and calculus maths for BE students, with bridging options for those transferring between the courses.

This research suggests that when lifelong learners study alongside conventional entry students, educators should take into account the likely higher withdrawal rate of off-campus and mature-age students, and provide appropriate alternative learning paths that consider the likely difference in educational preparation of those enrolled.

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A WHOLE NEW BALL-GAME: GENERIC SKILLS IN AN ENGINEERING SCHOOL – ARE THEY TAUGHT, OR MERELY CAUGHT?

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ABSTRACT

This paper explores the self-reported changes in the perceptions of 13 engineering students over a semester-long course, *Communication, Technology and Science*, (CTS) in their degree program. The CTS curriculum builds awareness of students needs for a broad range of lifelong learning abilities through generic skill development in a professional engineering context, and includes opportunities for students to develop such skills.

INTRODUCTION

Griffith University, in common with all Australian universities, recognises the importance of lifelong learning for its students and graduates, and indeed, builds its mission statement on the centrality of lifelong learning to personal and professional development throughout life. Similarly, it is committed to the development of students' generic skills while at university and after graduation, with its sponsorship over a number of years of the Griffith Graduate Project[1] and the primacy given to its statement of graduate skills and attributes in its Strategic Plan (2003-2007):

> Griffith graduates will be known for their expertise and ability to apply their multi-disciplinary knowledge and skills in innovative ways to novel problems. They will possess high levels of skills in: oral and written communication; problem solving; analysis and critical evaluation; information literacy - and the ability to: undertake independent life-long learning; initiate and lead enterprises; work effectively as a member of a team; assume responsibility and make decisions; undertake employment or further study, nationally and internationally - combined with high ethical standards.

This paper will outline one of the ways in which the university's commitment to lifelong learning and generic skills development has taken hold in an engineering school which traditionally, and not unusually for the discipline, has eschewed such notions as "soft" and "irrelevant." It represents a case study of a teaching and learning innovation designed to demonstrate to students the importance of self-awareness, self-knowledge, and self-development by providing structured opportunities for self-monitoring and reflection.

[1] The Griffith Graduate Project is sponsored through the Vice-Chancellor's Strategic Development Fund and has run since 1999 at Griffith University.

THEORETICAL FRAMEWORK

A variety of reports have recognised the need for a broad set of skills in addition to discipline content knowledge for a graduate to be well placed in obtaining employment after graduation. The AC Nielsen Research Services (2000) report, "Employer Satisfaction with Graduate Skills", in particular notes the following, "skill deficiencies in new graduates: creativity and flair, oral business communication and problem solving." The report also cites employers' dissatisfaction with graduates' "communication skills, interpersonal skills and an understanding of business practice." Of particular interest to engineering faculties is the finding that "graduates of engineering are perceived to be poor in many skills, particularly at problem solving and oral business communications and interpersonal skills."

Engineers Australia is the accrediting body for all engineering programs in Australia, and in its 1996 *Review of Engineering Education* (Engineers Australia, 1996) it stated that engineering graduates, while needing a "sound base of mathematics and engineering technology" also must be equipped as communicators, with a broad understanding of, and ability to interact in the broader society in which their profession operates. Indeed, to maintain credibility as an engineer, one must be committed Carnevale's (1990) statement that "In today's workplace, learning is an integral part of every-day life. The skill of knowing how to learn, or learning to learn, is a must for every worker."

These requirements challenge the engineering profession, and it is particularly difficult to engender an understanding of this need in students whose typical and consistent response to classes involving oral or written communication is, "But I'm training to be an engineer. Why do I have to know how to write or speak?" Roman (2002) asserts that "poor communication skills is the Achille's heel of many engineers, both young and experienced – and it can even be a career showstopper. In fact, poor communication skills have probably claimed more casualties than corporate downsizing." As one engineering employer stated during research into graduate skills development in the Griffith Graduate Project:

> I told my English teacher, "I don't care, I'm going to be an engineer and I don't need English skills," and he told me "You'll see that there's a lot more English than Maths," and I can really vouch for that now! … [Universities need to] fix up their [students'] English skills before they get out. (Employer)

Surprisingly, another criticism leveled at engineering graduates, and often engineers in general, is that they have poor problem-solving skills. Briggs & Hodgson (2000) note that "the practicing engineer operates in an environment characterised by uncertainty, where the use of judgment in defining problems and establishing parameters for their solution is more important than the techniques to be used." This need for problem-solving skills, particularly for the engineer, is perhaps the skill that engineering schools believe they most successfully develop in their students with the discipline's heavy reliance on mathematical style thinking with its absolute and replicable results. However, little or no attention is paid to the broader skill of problem solving per se. Many, including Beder (2000), have placed the blame for this perception of engineering students on the fact that engineering is seen as having absolute, black or white, correct or incorrect answers and solutions. For a discipline based on mathematics and physics, this is not surprising and, in fact, technical solutions need to be well grounded in black and white maths and physics. However, as Beder (1999) further asserts, "In the business world, engineers are often seen as being preoccupied with technical issues to the exclusion of all else," and Bradshaw (1985) states that the possession of a degree, while indicating the ability to think at a certain level, is not of itself sufficient for the world of work.

As engineering students move through their academic experience, one would expect they should build an awareness of the generic skills required in professional practice. However, this is largely not the case, as noted by Harvey and Knight (as cited in Toohey, 1999). Academics generally agree with employers on the need for generic skills but they believe students will simply "catch" these skills as they move through university, not realising that unless they themselves place an overtly high value on, and formally "teach" skills, students will neither learn nor value such skills. Bowden, Hart, King, Trigwell, & Watts (n.d.) also comment that to avoid chance playing the major role in the acquisition of generic skills, their teaching should be "explicit rather than implicit".

Toohey's (1999) report on Boyatzys' study also emphasises the fact that the very skills valued by students' teachers, are the skills in which students show the greatest gains between entering and graduation. On the other hand, the skills which teachers did not overly value show little or no change.

BACKGROUND

The School of Microelectronic Engineering at Griffith University has a core course for students, *Communication, Technology and Society* (CTS), in its combined degree programs. This course is one of several within the program which raise students' awareness of a variety of issues related to professional engineering practice and is one of two which overtly address generic skills development. The learning objectives for this course were developed specifically to equip students for on-going, lifelong learning. However, it is the only course which clearly identifies and articulates the need for specific skill acquisition and the role of generic skills across a student's life. Across a semester timeframe, in the second semester of their second year (of a four-or five-year degree), students spend four contact hours per week in lectures, tutorials, and workshops. Lectures address the professional and ethical aspects of modern engineering. Tutorials provide students with opportunities to practise critical thinking, especially in relation to ethical issues, with all students participating in case study debates. Students are allocated to either side of the debate just minutes prior to the debate beginning, so they need to come prepared to argue both sides of an ethical dilemma. On the weeks when they do not participate in the debate, students submit a written list of arguments for both sides of the dilemma. In the workshops, students spend a two-hour session examining specific generic skills in a format that allows for the presentation of theory, real-world practice, debate and dialogue, and activities and simulations which provide opportunities to experience practical associations of the theory presented. Assessment connected to these workshops simulates a board meeting where students prepare for a specific role (e.g., engineer, manager, accountant, safety officer). Thirty minutes is devoted to a "board meeting" in which the students can engage in dialogue about an issue which may confront an engineering organization (for example) and reach a resolution regarding the issue's solution as a group. Students are then required to reflect and comment on the team and meeting processes. The style of teaching in this course specifically aims to respond to research that shows generic skills are "best developed by active approaches" (Moy, 1999, cited in Hager, Holland, & Beckett, 2002). It also responds to Callan (2003) by ensuring that assessment weighting emphasises to students the importance of skill acquisition. It is particularly important that the course provides this opportunity, as there is strong resistance to including generic skills assessment in the content-specific discipline courses in the rest of the degree. The method of teaching also responds to Bowden et al. (n.d.), Toohey (1999), and Boud, Cohen, & Walker (1993) in ensuring contextual variety, simulation of situation, the engagement of students in the process, and reflection. While ethics and communication are widely taught across the university and, of course, have their own specialty areas, it has been felt by the School of Microelectronic Engineering that its students need to be taught communication and ethics in an engineering-specific environment; a belief also held by Bowden, et al. (n.d.), who state that "the development of generic capabilities has little meaning until they are elaborated within the context of a discipline" and only take on "life and practical meaning when interpreted and elaborated within specific disciplines or fields of study."

METHODOLOGY

In Week 11 of second semester, 2003, 16 students completed elements of the Self-Assessment of Generic Capabilities (SAGC) prepared by Dr Alf Lizzio as part of the Griffith Graduate Project[2]. The SAGC measures students' perceptions across 14 domains of generic skills and abilities. An accompanying booklet succinctly describes each of the domains. After students have rated themselves on four subsets for each of the 14 domains, they then indicate the relevance of the 14 domains to three environments – their present course at university, their future work, and their personal interest in further developing the skill. The ranking of the subsets and domains are on a 7-point Likert scale, with 1 being *Not at all characteristic of me* and 7 being *Very characteristic of me*. Students were asked to mark the point on the Likert scale with a square

[2] This instrument can be accessed at: http://www.gu.edu.au/centre/gihe/griffith_graduate

box to indicate where they felt they were at the commencement of the semester, and to use a circle to rank their perceptions in this regard at the time of completing the survey.

The 14 domains in the survey are Interpersonal Skills, Self Management, Learning and Adaptability, Problem Solving, Conceptual and Analytical Skills, Oral Communication, Team and Group Skills, Information Literacy, Written Communication, Career and Vocational, Organisational Membership, Community and Citizenship, Personal Effectiveness, and Professional Effectiveness. Of the 16 survey responses, only one student ranked their perceptions at the commencement of semester. Two other students put the box and circle over identical numbers on the scale for each of the three environments in all 14 domains. These two students handed their survey in at the same time, so collusion is assumed. Hence 13 surveys were collated.

RESULTS

The survey was applied only once, towards the close of semester. Once the data from 13 surveys were collated, the following results were ranked by students' relative interest in further developing the skill at the time of the survey and the difference, or growth in awareness, between the two rankings. After 11 weeks of teaching, the survey results showed all domains to be more relevant to future work than to students' present course at university. This replicates the findings of Lizzio and Wilson's (2004) research. Results from the two surveys are shown in Table 1.

The most notable increases in awareness were in the domains of Interpersonal Skills, which had a 1.76 aggregate rise across the three environments; and in the need for Oral Communication and Written Communication in the future work environment. Another domain of interest is Information Literacy, which students ranked as being highest priority in the environment of present course (6.30) and future work (6.53), yet ranked at only 4.84 in interest in further developing the skill.

DISCUSSION

Two students from the class were asked to comment on the data and they gave their insights into the results. They noted that the highest ranked domain for further development at the close of semester was Personal Effectiveness and the second highest was Self Management, which they believed reflected the fact that they were most interested in developing skills that related to them as people, rather than as future workers. Brennan et al. (1993, as cited in Hager, 2002) note that there is a "demand amongst graduates themselves for a greater emphasis on a broader general education in those skill areas which can be seen to make for a 'competent person'."

Lizzio and Wilson's (2004) research argued that "the value students place on capabilities is the key factor in influencing their level of motivation for further development," and, furthermore, that "…students' perceptions of the relevance of capabilities to future work was the strongest predictor of levels of interest." In this study, while it was true in the domains of Self Management, Problem Solving, and Oral and Written Communication skills, it did not follow in the domain of Learning and Adaptability, which fell from equal first place in importance to future work, to 10th place in interest in further developing the skill. Information Literacy also fell from equal first to 14th, or last place in further developing the skill. Students' comments on this ranking showed that because they were studying to be engineers, the students were well aware of, and highly valued, information-literacy skills, but almost certainly, regardless of the description given about Information Literacy in the SAGC instrument, they perceived it to be largely to do with technology and, "being engineers after all," were already highly proficient in that domain. They also commented that while they could recognise the relative importance of Interpersonal Skills, both to present study and future work, it was perhaps the "personality," or nature of engineers which mitigated against them being interested in further developing those skills.

	How relevant you consider skill to doing well in your **present course** at university.			How relevant you consider skill will be in your **future work.**			How personally interested currently in **further developing** the skill.		
Skill	**Prior**	**Close**	*Diff*	**Prior**	**Close**	**Diff**	**Prior**	**Close**	**Diff**
Information Literacy	5.15	6.30	**1.15**	5.46	6.53	**1.07**	3.69	4.84	**1.15**
Community & Citizenship	3.46	4.15	**.69**	3.53	4.84	**1.31**	2.76	5.0	**2.24**
Interpersonal Skills	3.69	5.76	**2.07**	4.30	6.38	**2.08**	3.92	5.07	**1.15**
Oral Communication	3.84	5.30	**1.46**	3.92	6.23	**2.31**	4.0	5.15	**1.15**
Learning & Adaptability	4.76	6.07	**1.31**	5.23	6.53	**1.30**	4.76	5.38	**.62**
Conceptual & Analytical Skills	4.92	5.30	**.38**	4.84	5.92	**1.08**	4.53	5.46	**.93**
Career & Vocational	3.76	4.38	**.62**	5.15	6.0	**.85**	4.53	5.46	**.93**
Team & Group Skills	3.84	5.07	**1.23**	5.07	6.15	**1.08**	3.92	5.53	**1.61**
Organisational Membership	4.15	5.0	**.85**	5.15	6.23	**1.08**	4.15	5.53	**1.38**
Problem Solving	5.07	5.92	**.85**	5.84	6.53	**.69**	5.07	5.61	**.54**
Written Communication	4.53	6.15	**1.62**	4.15	6.23	**2.08**	4.23	5.61	**1.38**
Professional Effectiveness	4.15	5.38	**1.23**	5.30	5.84	**.54**	4.3	5.69	**1.39**
Self Management	5.0	5.76	**.76**	5.23	6.53	**1.3**	4.15	5.84	**1.69**
Personal Effectiveness	4.5	5.33	**.83**	5.16	5.83	**.67**	5.0	6.16	**1.16**
TOTAL – All skills	4.32	5.39	**1.07**	4.85	6.08	**1.23**	4.19	5.39	**1.20**

Table 1. Results from SAGC surveys conducted in 2003.

In commenting on the overall increase in awareness of the existence and importance of each of the domains, the students indicated that the hands-on, experiential methods of the tutorials and workshops were highly effective. As one of their assignments required them to examine the relevance of two, self-selected, generic skills to their future professional careers, the students noted that in investigating any of these skills, it soon became apparent that many of the skills were closely linked, reflecting the finding of Bowden, et al. (n.d.) that it is "difficult to differentiate, say, between teamwork, communication and problem solving in a real-life project. The idea of working with others to deal with a real situation necessarily implies all three." In reality, the different skills – while they can be looked at individually, "overlap and interweave like the threads in a carpet" (Hager, et al., 2002).

Students from the class had the opportunity, in a variety of ways, to comment on the relevance of the course structure and teaching methods. The two students who were interviewed while this paper was being written made comments; all students in the degree have an opportunity to rank and comment on the course at the end of each year of their study; and students who undertook the course in 2002 were specifically invited to give feedback. A mid-semester ranking in 2003 on the content of lectures and style of delivery gave a result of 9.02 on a scale of 1-10 (with 0.9 standard deviation).

Comments included,

> My first reaction to having to prepare for both sides of a debate was that it was unfair, but it forced me to look at both sides. It also prepared me better to argue for my preferred side because I was better able to rebut arguments for the other side of the debate.

> The hands-on experiential exercises we did in teams were effective. During the exercise I was able to relate them to the list of other skills.

> [I am now] very aware of the importance of generic skills and not to avoid them.

Comments on the effectiveness of workshop style of delivery included the following.

> I think the combined [workshop] format tended to bring the group closer together.

> Very effective as instead of listening to a lecturer ramble on while we sleep, we all became involved in conversation and discussion.

> I think it was very effective as we were more likely to come as if we didn't we missed both [lecture and tutorial] for the week.

CONCLUSION

This research showed a substantial increase in students' awareness of the relevance of generic skills in a one-semester period. This was as a result of their exposure to the overt teaching of, and emphasis given to, the need for the skills, and the interactive, experiential style of learning involved. Despite this course being one which most students perceive, prior to their involvement, as being irrelevant to their future careers as engineers, it received a ranking in 2003 of 8.5 on a scale of 1-10 for overall appreciation of the subject. Given that most engineering-content courses have little significant focus on generic skills development, this course has provided a mechanism to raise student awareness and skill levels, and to build their awareness of the "individual worth" placed on them by the university with "experiences that satisfy more than students' technical accomplishment" (Bowden, et al., n.d.).

Some of the positive benefits from undertaking this course can be found in the words of students on completing the subject.

> I used to think that my job as an engineer would not involve much communication. I used to really fear oral presentations, but now I know how important communication is for an engineer, and I have a better understanding of its complexities.

> The best way for students to learn how to work effectively in teams is to work in teams to complete small tasks in a situation where there is little or no pressure. Basically, just like we have been doing in CTS …Investigating the different roles that people play within teams and seeing how teams can work both positively and negatively (as we have been doing during this course) an also help students to learn good teamwork.

As the SAGC survey was administered only once, close to the end of semester, it is intended that this survey will be replicated across a wider group of students, both at the beginning and end of semester in 2004. We anticipate that the methods adopted in this course will continue to attract high student ratings and to generate positive graduate outcomes, though it will only be possible to measure these longitudinally. As Fallows and Steven (2000) state,

> It is the adoption of innovative teaching methodologies which blend skills provision into the academic content which is perhaps the most exciting and likely to have the greatest long-term impact on teaching and learning.

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SUCCESSFUL STRATEGIES FOR CONTRIBUTING TO LIFELONG LEARNING IN REGIONAL, RURAL, AND REMOTE COMMUNITIES

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ABSTRACT

The ability to be a lifelong learner is a quality that the University of South Australia seeks to develop in its graduates. Its only regional campus also contributes to the lifelong learning of community groups outside the university through a range of initiatives providing expanded educational and networking opportunities.

INTRODUCTION

The University of South Australia is committed to developing in its graduates various generic qualities: the ability to operate with a body of professional knowledge, a commitment to lifelong learning, problem-solving ability, the ability to work individually and in teams, a commitment to ethical action and social responsibility, the ability to communicate effectively, and the possession of international perspectives (University of South Australia, 2001). Here we focus on the ability to be a lifelong learner and the development of this attribute in community members beyond the university.

The university's only regional campus at Whyalla, 400 kilometres from the capital, is much smaller than any of the metropolitan campuses, having only 600 students, with more than half of these being off-campus. Nevertheless, this campus has demonstrated its ability to contribute to the lifelong learning of other members of the communities it serves, as well as to inculcate lifelong-learning skills in its on- and off-campus students and graduates. While content and assessments throughout courses target the development of this ability to be lifelong learners – along with the other graduate qualities (see *School of Social Work and Social Policy*, 2001) – it is also reinforced as students witness what the university is attempting to accomplish in the wider community.

After considering the nature and importance of lifelong learning, and of a university focus on developing the mindsets and skills required for it to be part of the lives of its graduates, examples of successful approaches for extending this more widely are briefly described below, with a closer examination of two of these approaches. They include contributions to the education of older citizens, the provision of educational workshops and seminars on health issues for various community groups, other information sessions to meet expressed needs of particular groups, and the continuing education of health professionals. Such programs provide community members with educational experiences and opportunities that may otherwise be lacking in their geographical location. In such places, feelings of marginalisation may spring from various sources, including distance, poor provision of continuing education, lack of professional networking opportunities, and lack of resources.

THE CONCEPT OF LIFELONG LEARNING

Lifelong learning

Lifelong learning as a concept was given impetus by the recommendations in 1971 of UNESCO's International Commission on the Development of Education, and was an indispensable component of more recent Australian reports such as the Finn Review of 1991 and the Carmichael Report of 1992 (both, as cited in McKie, 1993). In 1993 the Higher Education Council commissioned a project to investigate "the characteristics of undergraduate education which enable and encourage graduates to participate in formal and informal learning throughout their lives" (Candy, Crebert, & O'Leary, 1994, p. iii). The controversial West Report on financing higher education (DEETYA, 1998) also focused on the importance of lifelong learning, which was the theme of a speech by the current Leader of the Opposition to introduce Labor's education platform in the same year (Latham, 1998). The South Australian Government's establishment in 1999 of a Centre for Lifelong Learning and Development (based at Flinders University) showed its recognition of the importance of the concept.

The pace of change in our times obviously necessitates continual learning in order to keep up with developments, not only in trades and professions but also in everyday life as a citizen and consumer. However, people also experience needs for ongoing learning activities as part of satisfying other than basic needs, e.g., their need to know and understand and to develop fully as persons. As Huczinski and Buchanan (2001, pp. 240-242) suggest, a number of such needs in Maslow's hierarchy may prompt and be satisfied by continuing learning activities. With these wider needs in mind, we can agree with Chapman et al. (2003) when they cite Chapman and Aspin,

> …the expansion of cognitive repertoire and increasing one's skills and competencies is an undertaking that can – and indeed must – continue throughout life, as a necessary part of growth and development as a human being, as a citizen in a participative democracy, and as a productive agent in a process of economic change and advancement. (p. 2 of executive summary)

Real learning for adults is transformative (Mezirow, 1991), involving changes to learners' frames of reference. Such learning may include "changes in locus of control, personal competence or self concept" (p. 220). Some of the learning experiences described in this paper give evidence of a broadening of outlook, an ability to make informed decisions affecting participants' lives, and the health and enrichment of quality of life. The university is committed to such transformative learning.

Lifelong learning as a graduate quality

The University of South Australia's success in producing graduates who are "prepared for lifelong learning in pursuit of personal development and excellence in professional practice" (University of South Australia, 2001), is shown by the extent to which graduates:

- locate, evaluate, manage, and use information in a range of contexts – i.e., be information literate
- understand the limitations of, and have the capacity to evaluate, their current knowledge
- understand and accept personal weaknesses, strengths and preferred learning styles, have knowledge of a range of learning strategies, and take responsibility for their learning and development
- respond confidently to change in a flexible and adaptable manner
- maintain a positive concept of self as capable and autonomous
- sustain intellectual interest and critical thinking as a mature professional. (University of South Australia, 2001)

For many years people have been aware that being literate in today's world means a lot more than being able to read and write. In 1982, Hade expressed this as,

> To be literate in an information society, one will have to be competent in the manipulation of the various forms of media in each of the elements. The elements are understanding, translating, creation, and evaluation. The media are print, aural, visual, and computer communication. (p. 10)

This broader view of literacy now includes the ability to engage in activities such as using mobile telephones for text-messaging. The "computer communication" of the above quotation now encompasses so much more than it did in 1982. The ability to "read" other people, involving understanding of non-verbal communication, cross-cultural sensitivity, and empathy can also be regarded as a form of literacy.

Within our university, a concern for information literacy needs and skills, described by McKie (1993), was reflected in University Quality Improvement Plans in Teaching and Learning. The University's subsequent information-literacy project focused on this pre-requisite for lifelong learning in the modern world (Flexible Learning Centre, 1999). To the indicators of this graduate attribute (listed above) were added a list of characteristics of the lifelong learner, most of which are also accepted as marks of someone who is information literate:

- recognises the need for information
- accesses information from appropriate sources
- develops skills in using information technology
- critically analyses and evaluates information
- organises and processes information
- applies information for effective and creative decision making
- generates and creatively communicates information and knowledge
- develops attitudinal objectives which lead to appreciation of lifelong learning
- appreciates their own developing position as a learner in relation to the field of knowledge or profession. (Flexible Learning Centre, 1999)

Currently a number of resources related to lifelong learning are assembled on the QILLL database (Quality Information for Lifelong Learning) on the lniversity's website, (http://www.unisanet.unisa.edu.au/learningconnection/staff/tchlrn/life.asp).

WHYALLA CAMPUS AND LIFELONG LEARNING

Regional campus staff have been involved in the University-wide project mentioned above. While the university's primary focus has been on the lifelong-learning orientation of its graduates, it has also been involved in reaching out to the community. The regional campus has had a strong involvement in such outreach and has succeeded in contributing to lifelong learning through its dedication to ploughing professional knowledge back into practical use by the community.

The table below summarises some Whyalla Campus outreach programs and initiatives. While many of these are health-related, all have an educative aspect, and all are characterised by engagement with the community. Further discussion focuses on the initiatives marked with an asterisk.

ACTIVITY/INITIATIVE	OBJECTIVE
Health-education sessions for the community.*	To educate the community about health-related issues.
Annual health fairs.*	To conduct health checks and health-promoting activities at Whyalla and elsewhere.
Health and wellness program at a remote Indigenous community.	To undertake individual and community assessments and health promotion activities at Oodnadatta.
Continuing education.	To assist health professionals with further education for personal and professional growth and development.
Careers expo.	To link industry partners with students to inform them of the many opportunities in rural and remote areas.
University of the Third Age (U3A).	To support U3A in its activities and contribute to its program.
Outdoor Education Centre.	To enable participants to gain knowledge and skills in outdoor activities, e.g., abseiling, rock climbing, art.
Research Office seminar series.	To welcome community members to campus research seminars and disseminate research findings.

Table 1. Whyalla Campus outreach programs and initiatives.

The School of Nursing and Midwifery of the campus equally values and pursues research and community service by contributing to the community's health and welfare. This is why the school has been offering educational sessions for the public and other health-related initiatives, including organizing annual health fairs.

Health-education sessions

In the last four years, the School has conducted educational sessions on various health issues and health-related topics, offered in response to requests by members of various community groups. The purpose of the forums is to increase awareness and knowledge of particular health areas such as conditions and diseases affecting the population (e.g., stress, drug abuse, prostate and testicular cancer, incontinence, and insomnia), quality use of medications, basic life support, and understanding biological and medical jargon.

Annual health fairs

Health fairs are another initiative of the school. These have reached over 600 people in the last two years. Students under staff supervision undertake health assessments and health promotion activities at a local mall in Whyalla, at the same time enhancing the students' practical experience. Students provide free health checks consisting of measuring height, weight, body mass index, respiration and heart rate, cholesterol and sugar levels, and blood pressure. Following the health check, there is opportunity for students to talk about the impact of lifestyle issues on health and how health may be improved, based on the screening results. The static displays provide information relating to nutrition, exercise, sexual and mental health, and stress management. There are plans to duplicate this initiative in other rural areas in the future. (A health fair, as listed in Table 1, was also a component of the Oodnadatta health and wellness program.)

DISCUSSION

Candy and Crebert (1991) describe universities' role in lifelong learning as having three components: "vertical linkages" relating to universities' occupying a stage (or stages) in individuals' lifelong learning journey; "sideways linkages" in the provision of learning needs of particular groups including people in mid-career or non-traditional students with particular needs; and "forward linkages" in the achievement of lifelong learning skills and aspirations in graduates. This paper has considered mainly the second of these components, though the activities involved also contribute to the development of the lifelong-learning orientation of the undergraduate students involved.

The educational initiatives discussed contribute to lifelong learning by,

- providing learning opportunities to meet expressed and potential community needs,

- developing skills in participants to enable them to access further learning;
- developing and/or enhancing decision-making abilities,
- influencing undergraduates in ways that will encourage them to replicate such community activities as professionals.

These objectives are realised by providing foundational information, presented by experts that are receptive to questions, and a structure on which the community members can build as they approach related learning areas (e.g., further health matters). Knowles's principles for meeting the needs of adult learners (summarised in Feuer and Geber, 1988, p. 33) of creating an environment that fosters learning, involving learners (in planning, identifying learning needs, formulating objectives, designing learning plans, and evaluating their learning) and assisting them to carry out their plans, are reflected in many facets of the initiatives described.

Responding to needs

As already mentioned, many of the sessions have been designed in response to needs expressed by various groups within the community. Some of these groups are the Whyalla Branch of the University of the Third Age, a primary school in another regional city, and the Whyalla Filipino Cultural Association.

The participants in the forums are familiarised with management strategies so that they will be able to apply the knowledge they have learned in their everyday lives. Health-promoting behaviours and control of risk factors are also emphasised in these educational sessions which have the goals of increasing understanding and awareness of the health issue, providing practical strategies to assist people in making decisions regarding their health and, ultimately, assisting participants in improving their health outcomes.

These activities have generated positive feedback from individuals and groups, including encouraging comments indicating a desire to participate in further seminars. There is, likewise, always excellent community response to the health fairs, with feedback questionnaires confirming their usefulness and the positive regard community members hold for them.

Developing skills in health-promotion and maintenance

A proactive approach to health care, rather than a reactive one, is emphasised and encouraged in these endeavours. For example, in the health-education sessions it is not enough for people to learn that insomnia is of various types and is affected by various factors. What is of practical value is that individuals may take various actions to address insomnia. Likewise in conducting health fairs; the School stresses proactive measures. Community members are motivated to maintain a high level of wellness and encouraged to seek assistance to maintain and promote their health. They are also taught that a regular 10-15 minute health check provides much useful information about their health status and that they can use many strategies, such as walking, and eating fruits and vegetables, that will prevent chronic conditions or diseases in the future. Also, the participants are enriched by learning how to "listen to their bodies" and examine themselves, e.g., breast and testicular examination. Students participating also benefit greatly from the experience.

Tools for decision-making

As participants are introduced to scientific evidence and research discoveries, they are influenced to look at these topics in a rational way, expecting to see evidence for proposed courses of action in medical and other situations. As they are shown how to find information for themselves, they become more independent, less likely to accept without question what someone else tells them, and more likely to challenge entrenched beliefs, practices, and traditions – critique, as Mezirow (1991) states, "is an inherent function of adult learning" (p. 206). At the same time they may also receive validation and affirmation for their own efforts at health maintenance and promotion. They thus gain tools for making decisions based on knowledge, distinguishing between what is relevant and what is not, and therefore reducing uncertainty (Hade 1982). By being able to explain processes, principles, and concepts to themselves and others they can really feel that they have gained understanding. They come to appreciate that learning comes from discussing and reflecting as well as from reading and listening. In so doing, they come to exhibit many of the characteristics of a lifelong learner.

Many Australians seek medical attention when they are sick or when the condition does not improve after the use of some remedies. Some postpone medical care until the condition is unbearable. Members of particular groups may be less likely to undertake regular health checks (Cayetano-Penman, 2001). For this reason, initiatives such as the screenings included in health fairs and educational sessions can provide an easy means of access to health advice, information, and checks for individuals who would otherwise lack this opportunity. When community members are educated and vigilant about health, they are empowered to make beneficial decisions and are likely to contribute positively to society at large.

Continuing community learning

Our educational sessions and health fairs may well contribute to the positive transformation of regional communities because local people are viewed and valued as social agents. These initiatives may incorporate what Brookfield calls a "trigger event" that will start off a learning process (Cranton, 1994); a process that involves change and often difficulty. Hence educators need to be supportive (Cranton, 1994; Mezirow, 1991). Through the support provided by the university, community members may be transformed into successful adult learners, thus becoming a community resource that increases the human and social capital of the community. As people tend to have preferred learning styles (as described by Kolb and others), related to personality and influenced by culture, upbringing, and stage of life (Cranton, 1992), it is important to incorporate a range of diverse learning opportunities. These regional campus initiatives accomplish this.

CONCLUSION

The activities discussed are contributing to the lifelong learning of regional communities by facilitating opportunities for community members to meet their current learning needs and gain skills for continuing to learn. Additionally, the initiatives discussed have an influence on the lifelong learning of our current undergraduate students. Also, it is to be hoped that those students will continue such initiatives in a professional context, following their graduation.

Such endeavours add to other campus initiatives to bridge the gap between "town and gown", breaking down barriers, and helping community members to feel comfortable about venturing onto the campus and into university facilities, such as the library. This may facilitate later consideration of the university as a provider of formal learning opportunities for themselves or their family members. How the community views the campus is both a determinant of its ability to provide lifelong learning opportunities and also a consequence of the successful provision of such opportunities.

Because we live in a world where change is inevitable and continuous, people must be equipped with lifelong-learning abilities in order to continue their development in their daily life, whether in a work situation or family context or coping with a range of varied circumstances. These abilities also enable them to satisfy personal development learning needs.

> Lifelong learning is about developing a range of skills – being able to identify problems and ways of tackling them and to find and use information effectively. It is also about understanding and extending ways of learning to gain and apply new knowledge and skills. (QILLL database, 2003)

The activities discussed in this paper have enabled members of the community beyond the campus to develop such skills. These initiatives also show that a regional campus can be a focus for community educational innovations. They enable a small campus to play a significant part in attaining the aspirations expressed in the university's positioning statement, "Educating professionals, creating and applying knowledge, serving the community".

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RE-ENCHANTING EDUCATION: THE RECOVERY OF TEACHING AS A SACRED ACTIVITY

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ABSTRACT

This paper argues that higher education in Australia is suffering from a lack of enchantment. Dominated by the discourses of economic rationalism and by an objectivist epistemology that distances teachers from both their students and their subjects, education is losing its energy and passion. Through rediscovering enchantment, however, teachers may recover the sacred nature of their vocation.

INTRODUCTION

In his book *The Re-Enchantment of Everyday Life*, Thomas Moore (1996) describes an "enchanted world" as one that speaks to the "mysterious depths of the heart and imagination where we find value, love, and union with the world around us" (p. x). Enchantment happens when the ordinary world is suddenly illuminated, and beauty and mystery are revealed. But such moments are increasingly rare in a culture that is over-committed to rationalism, and dominated by scientific objectivism. In higher education, in particular, these values have led to an increasing emphasis on technology and teaching techniques, accompanied by a discounting of the person of the teacher. Within an objectivist epistemology, all subjective elements, including the relationship of the teacher with her or his students, are regarded as suspect, with the potential to contaminate the quest for knowledge. But in stripping away these subjective elements we also strip away the potential for joy, wonder, and mystery – for the illumination of the ordinary that signals the presence of enchantment.

The result is teaching and learning that are perfunctory – lacking in energy, idealism, and commitment. Inevitably, the quality of teaching and learning suffers. But just as important, teachers and learners suffer, losing their capacity for discovery as they abandon the possibility of

liberation, transformation, and activism. This paper is based on the premise that the university teacher needs re-enchantment. As Parker Palmer (1998) writes, academics are suffering from "being disconnected from our own truth, from the passions that took us into teaching, from the heart that is the source of all good work" (p. 21). We argue that a different epistemology is needed, one that sees knowledge as fundamentally relational and that therefore places the teacher at the heart of the learning process. We further suggest some intentional practices that will enable teachers to recover their capacity for enchantment. In this way, the sacred nature of teaching as an activity which "makes whole" (the origin of the word "holy") can also be recovered.

DISENCHANTMENT AND EDUCATION

Enchantment is often associated with a pre-modern world view. As Raboteau (1995) explains, the development of modern industrial society largely banished the pre-modern sense of the world as impregnated with magic and mystery. Disenchantment was the inevitable result of "the scientific revolution, the industrial revolution, the triumph of rationalism in the Enlightenment" (p. 2). While the Enlightenment ushered in a period of breathtaking progress in almost every field of human endeavour, such progress has come at a cost – a cost that includes, among other things, potentially cataclysmic environmental devastation and the ever-present threat of nuclear holocaust. The balance between mystery and reason, enchantment and disenchantment, has been lost. As Moore (1996) writes, "A culture dedicated to enchantment recognizes our need to live in a world of both facts and holy imagination. It doesn't explain everything away in materialistic terms but understands that wisdom and deep intelligence require an honest appreciation of mystery" (p. x). Without this appreciation, the world becomes "flattened, surface, ordinary, spiritless" (p. 3).

In Australia's higher-education system, this "flattened" quality can be observed in disaffected teachers, in students who are motivated largely by a desire to get a good job, and in a policy discourse that privileges economic agendas at every level. The newly-emerging discourse associated with lifelong learning is a case in point. One functional definition of lifelong learning explains the concept in terms of the individual's need for ongoing work-related skills development: "After students graduate, they will need to continue to develop their professional knowledge and related work practices because the demands on them will continually change" (University of South Australia, 2004). According to this definition, lifelong learning is a requirement of a 21st-century labour market, not a continuing, personally enriching engagement with the world and with others. Peter Jarvis's description of the emergence of the concept of lifelong learning in the context of global capitalism makes this even clearer:

> New innovations, new knowledge, and new applications of knowledge are essential features of these large global corporations, as each seeks to sell its commodities and services in the market for the sake of profit. Knowledge, therefore, has to keep on changing in order to develop new commodities which can be sold in the global market. (Jarvis, 2000, p. 5)

Because of this push to "make it new", "The workforce is having to keep on researching and keep on learning to keep abreast with all of these developments" (Jarvis, 2000, p. 5). Here, lifelong learning is understood as a compulsion, a burdensome necessity, a Sisyphean labour. Learning understood in these terms – aimed at developing new knowledge commodities and keeping abreast of new knowledge products – is certainly a joyless task.

Jarvis (2000) goes on to point out that it is "this global market system that controls the curriculum" (p. 9). What is needed, he argues, is "an alternative discourse", one that is, among other things, "really about lifelong learning and not work-life learning (however important that might be)" (p. 10). The idea of re-enchantment, which seeks to foreground an entirely different understanding of learning, is a contribution to the development of such an alternative discourse. Within a re-enchanted view of education, teachers are lifelong learners, with every foray into the classroom an opportunity to learn with and from students. For students, lifelong learning is understood not as a way to meet the voracious demands of international capital but, in the words on the back cover of Palmer's (1993) book *To Know as We Are Known,* as "a lifelong cultivation of the wisdom each of us possesses and can share to benefit others".

Such a concept of learning seems almost quaint in this market-driven era. Anyone who works in a university today cannot help but be familiar with "the language of 'performativity,' of efficiency and effectiveness, of means-end rationality, and of a technical-vocational orientation that has increasingly become the bottom-line rationale for higher education" (Burbules & Callister, 2000, p. 273). For instance, a recent policy document on teaching and learning speaks without inhibition of market share and competitive advantage, but never mentions the goal of engaged students who are transforming themselves and their world (UK eUniversities Worldwide, 2002). A manual on the development of learning materials makes no distinction, as Patrick Lambe (2002) points out, between "the process of steelmaking and *learning as a human experience*" (p. 3). Burbules and Callister (2000) find "countless evidence" of changes in higher education that reflect the reality that "Higher education is evaluated in 'human capital' terms, measured by enhanced job prospects and rates of return on investment" (p. 273). Is it any wonder our students are utilitarian in their approach to learning when education is presented to them in these terms?

There is nothing wrong, of course, with an education system that enables students to develop skills that will help them find jobs. But when education is defined solely in these terms, as a means to an end, and to an end about which students may well be equivocal if not downright cynical, there is no possibility of enchantment, and thus there is little possibility of true engagement and true transformation. As Palmer (1998) writes in *The Courage to Teach,*

> "Of course our students are cynical about the inner outcomes of education: we teach them that the subjective self is unvalued and even unreal. Their cynicism simply proves that when academic culture dismisses inner truth and honors only the external world, students as well as teachers lose heart" (p. 19).

Within such discourses, teachers struggle to keep their passion for their subject, and for teaching, alive in a system which increasingly devalues both. The tendency to downplay the role of the teacher while playing up the role of technology makes it increasingly difficult for teachers to affirm the centrality of their place in teaching and learning. The discourses associated with the use of technology for teaching and learning are unashamedly utilitarian, emphasising cost-effectiveness, efficiency, and market reach – the imperatives of commercialisation, which are becoming so familiar in Australian higher education. This is particularly evident in the discourses associated with the development of "learning objects", conceived as autonomous, de-contextualised units (or components) of knowledge in electronic form that can be manipulated, repackaged or assembled at will to serve a variety of learning purposes (see, for example, Oliver, 2001, p. 454; and Lambe, 2002).

The economic value of such "objects" is evident – as Lambe (2002) puts it, "If you can reuse, you can build cheaply" (p. 17). But the educational value is far from clear. Lambe's detailed critique of the idea that knowledge can be simply taken out of its context and redeployed, or, indeed, that knowledge is an object at all, raises important questions about the epistemologies underlying our teaching and learning practices – questions we will return to below. But the phenomenon of learning objects raises still other questions for the teacher. Though a learning object will initially be designed by a teacher, probably in conjunction with an instructional designer or technologist, when it is deployed (and redeployed) it becomes part of a package – a "knowledge product" – that is, ideally, independent of the teacher – any teacher. Educational technologists already joke about producing "teacher-proof courses" – electronic courses so foolproof not even a teacher could mess them up.[1] In such a scenario, what is the relationship of the teacher to the "learning object"? Even more importantly, perhaps, what is the relationship of the teacher to the students who are using the learning object?

One recent manual titled, *Principles and practice in electronic courseware design* (UKeU, 2002) clearly delineates the changed relationship between the teacher and the learning materials they use: "Traditionally, the teachers of classroom courses in higher education have each created material in an individual style that may not be easy for others to present. . . . This ad-hoc design process is not appropriate when the course materials will be electronically published and re-used" (pp. 4-5). While such a change may well improve the efficiency of the

[1] This was observed at a recent educational technology conference in Canberra.

production of course materials – though this is yet to be proven – it is likely to have a negative effect on the teacher's sense of ownership of the learning materials. Further, the message being conveyed here is that the individuality of the teacher – the vagaries of his or her own personal engagement with the subject, through which that teacher's love of the subject has developed – is simply not wanted. This is likely to lead to a diminution of the teacher's passion, and, in turn, that of the teacher's students.

We are not trying to argue here that technology is in itself necessarily something that disenchants. Indeed, the potential of technology to create enchantment is high – as movies, computer games, virtual reality, and digital music, among other things, lavishly demonstrate. In terms of teaching and learning materials, the use of computers has enormous potential, including the addition of both a visual element traditionally lacking in printed materials, and possibilities for communication usually absent from traditional distance education. Arguably, too, learning objects can be seen as little different to textbooks – if they are used by teachers and students as a resource rather than a substitute for the teaching and learning relationship. The potential for disenchantment that technology carries lies not in the technology itself but in the discourse of objectification that surrounds and supports it, turning teachers, learners and knowledge itself into objects, rather than seeing them as subjects in community.

Even putting aside technology, this discourse of objectification is pervasive in teaching and learning, and its tendency is always to denigrate both teacher and student. As Palmer (1993) explains, objectivism, which is the basis of the scientific method, is premised on "a sharp distinction between the knower and the objects to be known" (p. 27). Though this epistemology has been decisively challenged, even within the scientific world, by the understanding that "we can make no rigid distinction between the knower and the known, that every scientific finding is a mixture of 'subjective' and 'objective' elements" (p. 27), it is nevertheless, Palmer claims, "institutionalized in our educational practices, in the ways we teach and learn" (p. 29).

An objectivist view of knowledge, values detachment in both teacher and student, mistrusting passion as the basis of "subjective bias" and seeking to "eliminate all elements of subjectivity, all biases and preconceptions, so that our knowledge can become purely empirical" (Palmer, 1993, p. 35). This means that our "inner realities are factored out of the knowledge equation" (p. 35). Learning without passion, without emotion, without the engagement of the self is learning that is utterly lacking in enchantment. It is likely to be experienced by teachers and students alike as tedious, pointless, a series of exercises; never connecting with the student's underlying understandings and therefore never making the leap from surface to deep learning. Further, it is a model of knowing that, we would suggest, sets the student over against the world and other people, leading either to fantasies of dominance and mastery or to a sense of futility and disempowerment.

Palmer's (1993) alternative is a model of connected or interrelated knowing in which "the knower [becomes] interdependent with the known. Both parties have their own integrity and otherness, and one party cannot be collapsed into the other" (p. 32). This model requires "acknowledgment of and response to the fact that the knower and the known are implicated in each other's lives" (p. 32). It is about relationship: "the knower becomes co-participant in a community of faithful relationships with other persons and creatures and things, with whatever our knowledge makes known" (p. 32). Compared to objectivism, in which "we and our world become objects to be lined up, counted, organized and owned" (p. 39), this is a complex and challenging epistemology. But it is one that enables teachers, students and their subjects to "meet in ways that allow our passions to be tempered by facts and the facts to be warmed up, made fit for human habitation, by passions" (p. 36).

Palmer (1993) emphasises that in this alternative epistemology, the subjective qualities of both teacher and students are specifically drawn into the teaching and learning process:

> The relationships of the self require not only sensory evidence of the other; not only logical linkages of cause and effect; they also require inner understanding of the other, which comes from empathy; a sense of the other's value, which comes from love; a feel for its origins and ends, which comes from faith; and a respect for

> its integrity and selfhood, which comes from respecting our own. (p. 53)

The combination of objective and subjective knowledge leads, according to Palmer, to good knowing. But more importantly for our purposes here, it also has the potential to lead to re-enchantment in the classroom as our selves are no longer excluded and we are able to draw on our empathy, our emotions, and our self-understanding – all aspects of being that are integral to interest, engagement, even excitement.

Palmer (1993) is here privileging relationship rather than the rigid separation of the objectivist. For him, "Relationships – not facts and reasons – are the key to reality; as we enter those relationships, knowledge of reality is unlocked" (p. 53). In this epistemology, reality is not "out there" in the real world beyond the university campus but "in here", in the relationships between teacher and students and among students, as well as between teacher and subject, and students and subject. In this sense, his work echoes that of Paulo Freire (1972), who writes that "Knowledge emerges only through invention and re-invention, through the restless, impatient, continuing, hopeful inquiry men pursue in the world, with the world, and with each other" (p. 46). Such a relational epistemology lays the groundwork for social action, even activism, in locating the individual clearly within community, seeing knowledge as, in Palmer's (1993) words, "personal participation in the organic community of human and nonhuman being, participation in the network of caring and accountability called truth" (pp. 53-54).

WHAT WOULD A RE-ENCHANTED EDUCATION LOOK LIKE?

We have been arguing that both the pervasive framing of educational practices in terms of the needs of the market and the underlying epistemological base of so much education have contributed to a profound disenchantment among both teachers and students. Repeatedly told in both subtle and overt ways that their own subjective identity has no place in the classroom, many teachers are unable to connect with their own passion for their subject, and so, they have lost heart. They struggle to find the energy they need to return to their students day after day, year after year.

We now want to consider, in a more speculative vein, what an enchanted classroom might look like. In an educational system where enchantment had not been banished, the person of the teacher would be seen as the most potent teaching resource of all. There would be wide-spread acknowledgement that, as Palmer (1998) puts it, "good teaching comes from the identity and integrity of the teacher" (p. 10). This means that teachers would be supported in every way – with adequate time for preparation and teaching, administrative processes that facilitate their work, and development in technology and techniques that will enhance their role, to name just a few. Above all, though, it means that the subjectivity of the teacher would be welcomed in the university as the wellspring from which their teaching flows.

Accordingly, the classroom – real or virtual – would become a place of passion and delight. In his exploration of ways to re-enchant everyday life, Moore focuses on cultivating fun, play and fantasy – all elements that would be present in an enchanted education. Enchantment emerges from the free play of imagination and creativity. At the same time, these elements are essential for learning when learning is understood in a relational way as the co-creation of knowledge: "creation requires the full use of all imaginative capacities – play, intuition, analysis, conceptualization, and the body, mind, and spirit" (Purpel, 1989, p. 135). Imagination gives birth to possibilities, which are essential to the emergence of hope as a counterbalance to the cynicism, apathy and despair that so often haunt our educational institutions. The release of creative energies in the enchanted classroom should not, however, imply any lack of rigour. As Freire insists, "rigor is not synonymous with authoritarianism, . . . 'rigor' does not mean 'rigidity.' Rigor *lives* with freedom, *needs* freedom. I cannot understand how it is possible to be rigorous without being creative" (Shor & Freire, 1987, p. 78). It is through freedom, Shor and Freire suggests, that discipline, responsibility, and intellectual seriousness, among other things, are fostered (pp. 75-96).

All kinds of teaching styles, techniques and strategies – from lectures to laboratories to chat rooms to work-based learning – would be in evidence in an educational environment dedicated to enchantment. Advocates of enchanted education like Parker Palmer, Ira Shor, and Paulo Freire give numerous examples in their works of diverse teaching situations in

which students are critically challenged and engaged. The key is the degree of "fit" between the teacher and their methods. Equally important are the recognition of the importance of both teacher and student in the co-creation of knowledge, and the deliberate intention on the part of both of entering into community with the subject or discipline.

Freire's model of dialogic teaching is one instance of this. He describes dialogue as "a moment where humans meet to reflect on their reality as they make and remake it" (Shor & Freire, 1987, p. 98). Such an experience of dialogue depends on what Martin Buber (1958) calls "I-Thou" relationships, as opposed to alienating "I-It" relationships. When such relationships are placed at the centre of teaching and learning, the teacher is no longer seen as the possessor of knowledge who, in teaching, makes a gift of that knowledge to the students. Instead, "the object to be known is put on the table *between* the two subjects of knowing. They meet around it and through it for mutual enquiry" (Shor & Freire, 1987, p. 99). The teacher is as much a learner, in this view of pedagogy, as the student: "the ability of the educator to know the object is remade every time through the students' own ability for knowing, for developing critical comprehension in themselves" (Shor & Freire, 1987, p.100).

This is not to say that the teacher does not take responsibility for directing the educational process (Shor & Freire, 1987, p. 172). But it does imply a radical openness on the part of the teacher. This means a willingness to approach their own subject afresh time after time, and a genuine respect for and capacity to listen to and learn from their students. Most challenging of all, it requires a preparedness to recognise genuinely new knowledge if it emerges, even if there is no place for it on the curriculum.

RE-ENCHANTING EDUCATION AND RECOVERING THE SACRED

How, then, do we move towards this (admittedly brief and partial) vision? We want to suggest that in our culture, in which disenchantment is so pervasive, teachers need to deliberately cultivate enchantment, and develop personal and professional practices, in community with other teachers, that will enable them to resist discouragement and regain their heart. It could be argued that focusing on the individual teacher is ignoring the powerful cultural and institutional imperatives that prevent change. For Palmer (1998), however, reawakening the individual is the first step (he outlines four such steps [p. 166]) in the formation of a social movement for educational reform; one which, perhaps paradoxically, feeds off institutional resistance. Such a movement is, Parker suggests, central to the transformation of institutional culture necessary to facilitate good teaching and learning. Though we are focusing here on the individual teacher, we do recognise that not only institutional change but changes in public policy are necessary if higher education in Australia is ever to become re-enchanted.

The greatest need of individual teachers who experience disenchantment may well be for nourishment of what Palmer (1998) calls "the self who teaches". To resist objectification in the teacher-student relationship requires not just a cognitive shift, but real, inner transformation. To teach from what Anderson and Goolishian (1988), writing out of a therapeutic practice, call a "not-knowing position", in which the teacher puts aside her or his preferred ideas and understandings in order to allow the ideas and understandings of others to emerge, requires genuine curiosity about the world of another human being. To welcome play and creativity into the classroom requires the teachers to be in touch with their own playfulness, their own aesthetic sense and desire to be charmed. To achieve this, teachers need to allow themselves to be re-enchanted.

One way to achieve this would be through regular (at least annual) retreats in which teachers would come together to remember and share with one another their passion for their subject, and their hopes, dreams and ideals for themselves as teachers. This would be a time and space for teachers to reflect on their teaching experiences in the context of their lives and their own sense of themselves. It could include developing personal transformative practices such as meditation, an attentional spiritual practice which may enhance a teacher's capacity to "make room" for, and be fully present to, their students. It should also involve looking critically at the culture of the university in which they work, and at identifying policies and practices that foster enchantment and those that stifle it. Ongoing meetings for reflection, discussion, or silence, could also lead to the emergence of the kind of "movement mentality" that results in institutional and wider social change.

CONCLUSION

This paper grew out of conversations between the authors concerning the symptoms of disenchantment we were observing in our own university environment. In her role as a Teaching and Learning Advisor and occasional teacher, Ann-Marie was seeing an increasing emphasis on technology at the cost of the teacher, while Matthew, the Chaplain of CQU, had found himself on many occasions over the last decade listening to the alienated cries of despair and disaffection of both staff and students as they struggled to articulate a deep disenchantment with their university teaching and learning experiences. Currently we are in the process of developing our ideas with the hope of offering a program of re-enchantment to the teaching staff of our own university.

The educational malaise that we have chosen to call "disenchantment" is, we believe, widespread across the world's educational institutions. Dominated by an outdated objectivist epistemology and fuelled by a rapacious economic system, contemporary universities are in danger of losing their soul. We have argued that the way out of this malaise is by identifying and nurturing the innate potential within education itself for re-enchantment. Replacing an objectivist epistemology with a more relational epistemology as championed by visionary educationalists such as Palmer and Freire would usher in a new era where the active, passionate engagement of the whole person of both learner and teacher is called forth and with that the re-enchantment of education.

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INDUSTRY, EDUCATION, AND PROFESSIONAL COMPETENCIES: CAN THE PRINCIPLES OF LIFELONG LEARNING BRIDGE THE GAPS?

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ABSTRACT

The Faculty of Business and Law at Central Queensland University (CQU) is carrying out a re-evaluation of its programs. The questions under investigation are as follows. 1) What are the principles of lifelong learning? 2) What mixes of academic studies, professional competencies, and industry-base learning (IBL) are available and may be used in the Faculty of Business and Law to provide useful, valid outcomes for graduates? 3) How are the defined principles of lifelong learning being implemented from first-year in marketing?

INTRODUCTION

"When I was your age I was already working 15 hours a day and had to walk to and from work 3 miles each way…." Stories like these defined our grandparents' generation. They learned from the life experiences offered by their work, they were defined by what job they did, and they started their working life much earlier than today's generation. The work skills that were needed were learned on the job, and the worker grew with the position and stayed with the same company until retirement.

Today's workforce is structured very differently. It is not enough just to get a job. To keep the job, employees must continue to study. As demonstrated by the Australian Bureau of Statistics (ABS), participation rates in education for 15-24 year-olds went from 23 percent in 1994 to 27 percent in 1999, with two thirds of all students working and some 40 percent of these working 35 hours per week or more (full-time equivalent) (ABS, 2000). Most importantly, in 2002, 43 percent of all employees in the workforce studied or attended some formal education while working (ABS, 2003).

The workforce of today is also very mobile. According to ABS labour-mobility research for the year ending February 2002, there were 9.86 million people in the workforce. Of those, some 15 percent were job mobile in that year – they had changed positions or occupations at sometime during the year. Less than a quarter of the people employed had been in their jobs for more than 10 years, with the majority of the "stable" occupations being in agriculture, fisheries, forestry, and the utilities industries (ABS, 2002).

The implication here is that employees in most occupations will need to continue learning within new contexts throughout their working lives, and people in general will need to have skills to enable them to actively engage in learning throughout their lives. The workplace of today demands that staff be versatile, mobile, and able to study continually in order to keep up with the changing environments (both national and global) which impact on business.

This paper is a result of the program re-evaluation that is being carried out in the Faculty of Business and Law at Central Queensland University (CQU). The faculty teaches across a number of disciplines including marketing, tourism, commerce and management, human resource management, and business administration. In the School of Marketing and Tourism, there has been much discussion about introducing online teaching and courses, new developments in conceptual areas, and the proposed introduction of a work-placement or industry-based learning (IBL) model. The questions under investigation for this paper are as follows. 1) What are the principles of lifelong learning? 2) What mixes of academic studies, professional competencies and IBL are available and may be used in the Faculty of Business and Law to provide useful, valid outcomes for graduates? 3) How are the defined principles of lifelong learning being implemented from first-year in marketing?

LIFELONG LEARNING

During the late 1990s, UNESCO established the International Commission on Education for the 21st Century which predicted that

> …the coming century, dominated by globalization, will bring enduring tensions to be overcome, tensions between the local and the global, competition and equality of opportunity, the unlimited expansion of knowledge and the limited capacity of human beings to assimilate it. (Power, 2000)

The Organisation for Economic Cooperation and Development (OECD) also conducted research into the education levels of its 12 member nations and found that up to one quarter of the adult population had not acquired a minimum literacy standard necessary to function on a day-to-day basis. Such individuals cannot cope with the rapid changes in social, technological, and economic environments (Johnston, 1998). The capacity for a workforce to develop through educational opportunities then takes on a much greater significance. Individual members of the workforce must be able to constantly change and grow in their understanding and knowledge to be able to remain relevant in the technological and competitive environments in which they operate.

Lifelong learning, "…the comprehensive phenomenon including traditional school learning and vocational learning, but going beyond learning as it is traditionally understood in formal education systems, and including learning leading to self-development or self-actualization" (Cropley, 1980, p. 2), then must necessarily become a key feature of government policy and educational strategy. Many nations are developing policies which recognise the need for lifelong learning either for "competence advantage" of their labour force or as a development tool for adults seeking quality-of-life (National Board of Employment, Education and Training (NBEET, 1996)).

Based on his analysis of the OECD discussion, McKenzie (1999) suggests that there are three central principles of lifelong learning that differentiate it from earlier educational concepts:

- the centrality of the learner and the learner needs, reflected in an orientation towards the demand side of education and training;
- an emphasis on self-directed learning, and the associated requirement of "learning to learn" as an essential foundation for learning that continues throughout life; and
- a long-term view that encompasses the life cycle. (p. 2)

These principles demonstrate a depth to society's educational needs which present problems of operationalisation for any educational institution or government body. Perhaps a key to these issues may be to develop a variety of ways of teaching and learning which together provide students with a range of skills and knowledge to motivate them to competently progress towards their own economic and social independence.

CORE CONCEPTUAL KNOWLEDGE – ACADEMIC STUDIES

"Traditional" higher education consists of those skills acquired through tertiary studies including critical and rational or logical thinking, analysis of problems and data, problem-solving skills, research skills, and communication skills – both verbal and written (Martin, 1997). Educational institutions also have the primary function of providing conceptual knowledge such as content that is subject or course specific.

The "traditional" higher-education model has been developed around the framework of producing graduates who are "management ready" – with the capacity to step into the workforce and contribute meaningfully to employers and society. However, in traditional educational activities, teachers and institutions may barely acknowledge the relationship that should exist between the teaching activities of the institution, and the work and economic environments in which students will have to operate in the future. Lengrand (1975) proposes two major points where traditional educational practices do not meet human needs and expectations.

First, except in the few cases of vocational training which constitute a small percentage of the higher-education sector, adults are not typically prepared by education to cope with the "real" world of work. As Lengrand (1975) suggests, "There is no continuity between the world of formal education and that of the everyday existence of most human beings; any communication between the two is merely fortuitous and intermittent" (p. 125). While this may appear to be a dated and somewhat cynical philosophy, and that the conceptualisation of teaching and university activity may have moved on, the reality is that many of our students still feel a gap between the concepts learned in university and what they actually need to know when they enter the work force.

Lengrand's second point is that, where higher education does aim to provide students with a vocational training perspective, the institutions tend to operate outside of contact with the workplace and, until recently, government policy was constructed without identifying required skill sets or future job openings. Formal education in the traditional sense has often distanced itself from the real world and held itself as an institution separate from and above the world of the average person. This presents an interesting paradox considering most students are working and studying at the same time and then finding little or no crossover between the two fields.

In the Faculty of Business and Law at CQU, individual lecturers have endeavoured to develop materials to provide the best advantage for their students and, wherever possible, to give some relativity to the workplace. However, there has not been an organized faculty-wide approach to developing relationships with employers and government which may provide students with better pathways to work. Our graduates are still feeling the 'gap' between the world of education and the world of work. The linkages between what companies want and what the university provides is not perhaps as strong as it should or could be in some cases. The principles of lifelong learning would suggest that what is needed is to teach the students to learn rather than teaching the students to study. As such, courses in the faculty are now aiming to map (and teach) professional competencies within the degree programs – as well as to teach content – in an attempt to fill this gap. This fits with the second lifelong learning principle as suggested by McKenzie (1999); however, there are issues with this approach, as discussed below.

PROFESSIONAL COMPETENCIES

The area of professional competencies has received much investigation and research in the past decade or so. Governments and universities worldwide have developed comprehensive studies on generic professional skill sets which employers require of university graduates. Much of the research has not been industry specific as such, though some authors have recently undertaken research into areas including retailing, information technology (IT), and law (Monash University, 2003; Christensen & Cuffe, 2002; Gush, 1996).

Professional competencies are fundamentally defined as those enduring skills possessed by an individual which, when demonstrated, can result in superior job performance (Burchell, Hodges, & Rainsbury, 2001; Spencer & Spencer, 1993). That is, the individual's job performance is causally linked to gaining or having a level of aptitude and/or proficiency in the task or skills required to perform that task. An individual's competencies generally consist of a mix of technical knowledge (including their skills and abilities) and personal characteristics such as an individual's principles, attitudes, values, and motivations (Burchell et al., 2001).

The majority of research into professional competencies has taken the form of research into cognitive development as a result of university study. Pascarella and Terenzini (1991, as cited in Boylan, 2002) suggest that, overwhelmingly, students gain verbal and written communication skills throughout their university years. Other skills include scientific-reasoning, reading, and those mentioned earlier such as critical and rational or logical thinking, analysis of problems and data, and problem-solving skills (Boylan, 2002; Martin, 1997).

Students also gain "affective development" through higher education and benefit from such environmental factors as liberalising ideologies. There are demonstrable impacts on the orientation towards themselves and others and the recognition of the interdependence of individuals. They also exhibit an increased sense of responsibility toward society and an increased level of intellectual self-confidence. Graduates also report a generalized improvement in self-esteem (Boylan, 2002).

Research in New Zealand into the desirable graduate competencies included surveying the top 500 New Zealand companies, major NZ recruitment organizations, and academic staff and students (Burchell et al., 2001). Similar research has also been conducted nationally in Australia – commissioned by the Department of Employment, Education, Training and Youth Affairs [DEETYA] (ACNielsen, 2000), and institutionally through Griffith University (Crebert, 2002). The following table demonstrates a range of competencies which have been collated from these previous studies. The categories are based largely on those developed by the ACNielsen (2000) research though I have included competencies, skills, and attributes from the other studies under the four

groupings. Interestingly, the Basic Competencies and Academic Skills categories can be grouped under the area of core conceptual knowledge as identified in this paper. The Basic Skills category seems to overlap between the core conceptual knowledge and the professional competencies areas, and the category for Other Attributes tends to be based on the students' individual traits and characteristics rather than the knowledge or skills that can be learned. It must be noted that these are my interpretations of the categories as they are not well defined in the literature and there seems to be some overlap of what constitutes a skill, a competency, and an attribute.

Basic Competencies	Basic Skills	Academic Skills	Other Attributes
1. Literacy	1. Organizational awareness (aware of organisational culture)	1. Academic learning and ability and willingness to learn	1. Directiveness (assertiveness, decisiveness, use of power, group control)
2. Time Management Skills	2. Leadership qualities, aware of impact and influence on others	2. Written business communication skills	2. Developing others (mentoring, coaching and providing support)
3. Numeracy	3. Oral business communication skills	3. Problem-solving skills and information seeking	3. Self control and resistance to stress
4. Basic Computer Skills	4. Comprehension of business practices	4. Logical and orderly thinking	4. Personal presentation and grooming
	5. Teamwork	5. Project management skills	5. Maturity and self confidence
	6. Achievement orientation/task accomplishment	6. Creativity and flair	6. Ability to benefit from on-the-job training
	7. Inter-personal skills with other staff	7. Capacity for independent and critical thinking	7. Flexibility and adaptability
		8. Conceptual thinking, pattern recognition and insight	8. Customer/client/patient focus and orientation
			9. Capacity to handle pressure
			10. Organisational commitment
			11. Enthusiasm
			12. Motivation
			13. Initiative

Table 1. Core competencies, skills, and attributes.

The Faculty of Business and Law (CQU) is at present working to chart the progress of students through their business programs to determine what competencies are being covered; if they are assessed or not; and where, when, and through what courses and at what stage of the students' development they occur. The intention is to eventually instigate a diploma of core competencies which will be awarded along with the regular testamur in an attempt to make students more attractive to employers and to provide students with greater differentiation in the employment marketplace. At issue here are the definitions of "competency" itself and how they are applied. Questions arise as to whether graduates have indeed gained a level of proficiency in the academic competencies and whether the faculty has the capacity to actively "teach" many of the other attributes listed in the table. How does one instill and/or measure creativity and flair, directiveness, leadership qualities, motivation, self control, enthusiasm, or mentoring skills, and are universities even equipped to do so? Besides the issue of how to measure these competencies, questions must be asked about how the faculty will ensure quality control across all offerings and modes of all degree programs to provide graduates and employers with a standardised outcome.

On their own, or even if integrated, the traditional higher-education model and the more recent university push for core competencies and graduate differentiation do not seem to provide a strong enough case for employability in the wider, globalized environment. Here again it seems that the principles of lifelong learning which act to instil a motivation to learn would be the link between the need to teach and assess a skill or competency and the need for students to develop self-awareness of their skills, competencies, and attributes and to take responsibility for that development.

INDUSTRY-BASED LEARNING (IBL)

In the Faculty of Business and Law at CQU, there is currently one formalised program which provides students with industry experience as an integral part of their degree. The Human Resources Management program offers a limited number of students the opportunity of a work placement (or industry-based learning placement) which they complete in conjunction with their degree program. Within CQU there are other IBL programs, and many other universities in Australia and overseas also offer IBL programs.

IBL within a university context has been defined as,

> That learning which … [utilises] opportunities, resources and experience in the workplace. It will, in general, have outcomes relevant to the nature and purpose of the workplace … the learning achieved will include appropriate underpinning knowledge and will be tailored to meet the needs of the student and the placement. (Margham, 1997 as cited in Hunt, 2000)

This definition of IBL differentiates between work placements that relates to university theoretical content and work experience which may not be integrated with such content. IBL (under this definition) also seems to provide some of the answers to the questions of operationalisation which the principles of lifelong learning raise.

There has been a growth in interest in IBL courses worldwide in the past 2-5 years. Scotland, Ireland, England, and the European Union (EU) have conducted in-depth research into the prevalence of IBL and its economic benefits to both graduates and employers, and the skills base that has resulted from this method of learning. In Scotland, research indicates that employers tend to cite increased competitiveness as the major benefit of IBL, and employees feel that it helps them to do better quality work and that it increases their self-confidence (Glass, Higgins, & McGregor, 2002).

On the work-experience front, the United States of America has for many years encouraged students to attend internships in their chosen industries during annual holiday periods. This is so that, for example, students of tourism and hospitality can gain hospitality experience at major resorts and hotels while still studying, thus providing graduates with a more rounded education and work experiences which benefit their long-term career goals.

In other areas, such as engineering and medicine degree programs, industry-based learning has been developed alongside problem-based learning (PBL). These have been combined to produce graduates with an "employment-based education" (Canty, nd.; Grant & Dickson, 2002). PBL tests students' capacity to gain knowledge by working through simulated problems, and develops a number of key skills required by graduates including group and team work, problem solving skills, critical thinking and reasoning, and effective communication skills. This, when combined with IBL, gives graduates a mixture of simulated problem-solving experiences along with work placements, so that students graduate with the understanding that there are many things they do not know about their field and that they need to maintain the skills to find the information and ask questions of others in the area.

The difficulty here is attaining a balance between content provision (traditional education) and practical application such as PBL and IBL. How much do you give students and how much should they 'discover' for themselves? CQU also has a number of unique problems which must be taken into account when developing IBL placements as part of any degree program. In the Faculty of Business and Law we have flexible modes of study including internal placements, distance education, and online education. There are also a number of campuses, including domestic regional campuses, on-shore international campuses, and off-shore international campuses which utilise a range of teaching and class formats and have a range of access issues with regard to student facilities including computers and the Internet. Clearly, it is easier to manage and administer a PBL or IBL program when there are only 30 students at one campus in a face-to-face environment, as opposed to 1,300 students in various locations and using various modes of study. However, the combination of PBL and IBL with core concepts and professional competencies would seem to provide students with the best coverage of teaching and learning strategies to engender the development of lifelong learning.

LIFELONG LEARNING & THE CASE FOR FIRST-YEAR MARKETING

If we as a faculty are to fulfil our mission as well as the implicit expectations of students (that they will, eventually, get out of university and into meaningful employment) we need to be teaching skills which help the individual to achieve his or her self-actualisation as much as we teach content knowledge. As demonstrated in the DEETYA study on graduate attributes, the top five responses of companies were, 1) "Creativity and flair", 2) "Enthusiasm", 3) "Capacity for independent and critical thinking", 4) "Flexibility and adaptability", and 5) "Personal presentation and grooming" (ACNielsen, 2000); not content. The lifelong learning concept is important to the higher-education mix to develop students with the "capacity to respond flexibly to changing circumstances, to learn throughout a career, and to integrate theory and practice by generalising from a theoretical knowledge base to deal capably with previously unmet situations" (Bligh, 1982, as cited in Tempone & Martin, 2000).

In my position with the Faculty of Business and Law I coordinate and teach the first-year marketing core course which involves over 1200 students on 11 different campuses (both on-shore and off-shore) and internal, distance/flexible education, and online modes of study. The course must necessarily provide students with the core concepts of marketing and core operational skills to allow them to function in the university environment as it is one of the first courses they enter on starting a business degree. Enmeshed with these needs are the Faculty's requirements of explicitly exposing and tracking generic skills and attributes to demonstrate "real" gains in skills development.

A further aim in the redevelopment of this course has been to take it from "the standard" form (three pieces of written assessment including a formal end-of-term examination), into a variety of teaching and learning approaches and assessment methods. These allow students to develop both conceptual knowledge and intrinsic, self-directed, learning-to-learn foundations (OECD, 1998, as cited in McKenzie, 1999). As such, online discussion lists are being used to develop relationships between students who are using the flexible-learning mode of study. Students are encouraged to "get online" through assessment rewards, and are then organizing their own study groups (both in virtual and real environments) and teams to solve problems and generate questions around the conceptual material and practical marketing experiences.

Problem-based learning has also been included which combines explicit teaching, definition of expectations and learning outcomes, and collaborative self-directed study. Students complete assessment tasks in teams and individually. This encourages them to take the concepts and to apply them to real situations where student observation of, and participation in, "reality" is their learning vehicle.

Finally, and perhaps most importantly, two further programs have been developed to provide activities and opportunities to immerse students in the idea of active participation in their own education and learning – the key to acquiring lifelong learning skills.

Throughout 2003, students were encouraged to develop and participate in the Student Marketing Group (SMG). Membership was open to all business students (rather than just marketing students) and the group's directive was to approach businesses in the local area and to develop marketing and/or business strategies for them. This was designed as a structured form of work experience that allowed students to gain some commercial contact, allowed businesses in the local area to participate in the education of their student population, and helped to create greater ties between industry and the faculty – reminiscent of the "academic pact" proposed by Power (2000). Last year (2003) saw the pilot of the SMG program on the Rockhampton campus. To say it was not as successful as hoped would be a slight understatement. Of the nearly 30 students who sat at the first meeting only 5 remained by the end of the first term. The students were initially enthusiastic about the projects and chose to help the student association's student newspaper and the on-campus bar. The reception by both organizations' management was not enthusiastic, and all of the students' ideas were summarily dismissed. Work remains to be done with regard to smoothing the flow between students and businesses.

The second program was more successful. Arrangements were made with careers counsellors on campus to provide information sessions at the start of four of the lectures spaced

throughout the term. These sessions included information about participation in work-experience programs, programs run by the careers department, resume and application writing, and employer requirements of graduates. One of the sessions included two guest speakers who discussed general work experiences as well as their career development in marketing-specific areas. The aim of the program was to get students to think about where they were and where they were going, as soon as possible. It is not acceptable for students to reach their final year of study only to discover that they do not really like what they are doing or that they cannot get employment in their field because they did not complete the right courses. The careers sector has also implemented a number of work-experience programs with major companies, thereby creating better university-industry linkages. The outcome from this collaboration has been (hopefully) to create positive attitudes towards education, employment, and lifelong learning; though further research of these pilot programs is now necessary.

CONCLUSION

The traditional model of higher education and the traditional graduates that this model creates cannot hope to survive in the increasingly complex world of the global economy and knowledge society. It is also imperative to develop a model of teaching and learning which enables students of CQU engaged in all modes of study and from all locations to participate in lifelong-learning development. Students require a mix of teaching and learning activities and assessments that emphasise individual development rather than focusing on conceptual study. We need to be teaching skills which help the individual to achieve their self-actualisation as much as we teach content knowledge.

Also, a recommendation can be made for further research as well as ongoing interaction with the business community and government agencies. There is a need for faculty-wide research into the small-business requirements of graduates within regional areas – given that one of CQU's primary markets is in regional Queensland – to ensure that the faculty develops and maintains closer ties with local employers and government over the long-term.

Finally, this paper has examined a range of teaching and learning strategies including teaching core academic content, developing professional competencies, the pros and cons of industry, and problem-based learning, and has determined that the principles of lifelong learning need to be operationalised to better fill the "gaps" (perceived or otherwise) that each of these areas may leave in the graduate's education.

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COLLABORATIVE LEARNING: BUILDING BRIDGES TO LIFELONG LEARNING

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ABSTRACT

Collaborative learning has become a key strategy in the teaching and learning environment of higher education and, indeed, at all levels of education. The potential of collaborative learning to develop a deep approach to learning and lifelong learning skills such as problem-solving, team work, negotiation, and interpersonal communication is explored in this paper through the lens of a research project involving a group made up of second year university students and older adults from retirement homes in the local community.

INTRODUCTION

Research into the student experience of collaborative learning was initiated by a project undertaken by staff in the School of Human Services at Griffith University, Logan Campus. This project, *Linking Seniors and Juniors at Logan*, funded by the Queensland Department of Families, was designed to promote a positive understanding of ageing through collaborative activities involving second year human services students and a group of older people from retirement homes in the community surrounding the Logan Campus.

Students studying the course, *Health, Ageing and Disability*, in the Bachelor of Human Services, participated in the project by designing, developing, conducting, and evaluating an Internet training session for older people who came on campus for the day during Seniors Week 2003. This event is an annual state-wide celebration which has the overall aim of promoting a positive understanding of ageing and of encouraging an active and healthy lifestyle.

Within their small groups, students were asked to develop resources for the workshop that were aligned to agreed learning objectives and learning outcomes. Students were allocated to

workshops where they were involved in the conduct of a live Internet workshop with older people. Within the context of this workshop, students were required to facilitate – and to work in small groups as well as one-on-one – with older people, using prepared resources to provide a high-quality, meaningful learning experience for older people. The assessment piece associated with this activity involved writing a reflective report about their feelings, experiences, and learning from the activity.

The active involvement of students in a real-life facilitation and mentoring situation with older people provided an environment for transformational learning for both the students and the older people. Positive outcomes included dispelling myths and stereotypes, breaking down barriers to learning, developing self-confidence and self-competence, and developing an orientation to "learning for life".

THEORETICAL FRAMEWORK

Lifelong learning is associated with promoting effective learning, understanding, reflection, and a desire to learn. In this context, collaborative learning is widely recognized as an approach, which encourages higher-order thinking and deep learning. Prosser & Trigwell (1999) refer to a number of research studies, (Tang, 1998; Slavin, 1987; Topping, 1992; and Nicols & Miller, 1994), that report the positive learning outcomes of collaborative learning. Slavin (1987) found that the positive support of working with peers toward common learning objectives improved student motivation to learn. Nichols and Miller (1994) reported that students in cooperative learning groups were more focused on achieving learning goals, demonstrated high levels of self-efficacy, and showed an intrinsic interest in the subject.

At the heart of collaborative learning is the concept of socio-cultural learning espoused by Vygostksy (as cited in Jaramillo, 1996). Essentially, Vygotsky's theory of learning suggests that individual cognition occurs in a social situation. Through social interaction, individuals construct knowledge and negotiate meaning (Jaramillo, 1996).

The concept of experiential learning is also implicit in collaborative learning. (Kolb, 1984) described experiential learning as a continuous process where ideas are formed and reformed through experience. He advanced a process model of learning with the following stages:

- Concrete experience
- Reflective observation
- Abstract conceptualisation
- Active experimentation

In collaborative learning situations people interact with each other, and through their shared experiences they are able to question, analyse, debate, and negotiate ideas to form meaningful patterns which lead to deep learning and understanding. Prosser (1993) expounds the idea that learning in groups can help people to become aware of the qualitatively different ways in which phenomena is conceived. This may lead to changes in individual approaches to learning, and promote better-quality learning outcomes.

Light and Cox (2001) identify four categories of positive learning outcomes related to collaborative learning. These are,

1. Intellectual – involving problem-solving to develop conceptions, question assumptions, and cognitive understanding;
2. Social – encouraging cooperation and awareness of others, developing a sense of social identity, and developing a sense of belonging and community;
3. Personal – developing self-awareness, self-efficacy, encouraging commitment, and providing opportunities to practice self-expression;
4. Practical – developing team work skills, written and oral skills, etc. to complete group tasks.

METHODOLOGY

Research conducted into the student experience of collaborative learning was a qualitative study based on the use of phenomenography. Phenomenography seeks to capture the qualitatively different ways in which individuals experience, conceptualise, and understand phenomena (Richardson, 1999). The interview is structured around a list of key issues, but develops as natural conversation to allow in-depth exploration of students' perceptions (Marton & Saljo, 1997). The perspective taken is from the "inside", capturing students' thoughts, feelings, and reflections on lived experience. The intention is to produce a snapshot of the student learning experience.

The research sample comprised five students who participated in the Internet learning activity, reflecting a range of gender, age, and background. All students who were interviewed were mature-age students. The total student cohort of 20 students did not include any school leavers. The sample is considered representative of this particular cohort but cannot represent the views of a larger or more diverse cohort. The interviews lasted approximately 45 minutes each and were audiotaped. The taped interviews were transcribed in full. Four key areas were identified as integral to collaborative learning with an emphasis on the group process, the individual contribution, and the facilitation role (Brufee, 1993). These areas formed the basis for questions asked in the interview process. These focused on,

1. the group approach to the learning task,
2. the individual contribution to the group process and the task,
3. the experience of facilitation and teaching in the workshop,
4. development as a person.

RESULTS

Using phenomenography, the initial data analysis involved identifying themes from the transcribed tapes. The following themes emerged.

- Collaborative learning for sharing information, negotiating meaning, and co-construction of knowledge.
- Intrinsic interest versus Extrinsic interest (Intrinsic interest refers to interest in the subject matter for its own sake, whilst extrinsic interest in the topic is suggested by factors external to the learning context e.g., convenience, friends doing the subject, etc.).
- Prior experiences and group engagement.
- Student-centred learning tasks and student engagement.
- Diversity in groups and group engagement.
- Social and emotional support in groups.
- Individual participation in groups.
- Personal development and change.
- Risk taking.

A careful analysis of the themes highlighted the myriad dimensions of learning for an individual, with the emphasis on all of these dimensions in collaborative learning. Light and Cox (2001) describe learning;

> It is an active and meaningful construction of facts, ideas, concepts, theories and experiences in order to work and manage successfully in a changing world of multiple and synchronous contexts. It goes beyond the intellectual, to encompass the personal, practical and social dimensions of students' learning life. (p. 63)

The following table uses Light and Cox's (2001) four dimensions of student learning as a pedagogical framework for describing categories of description derived from the research.

Intellectual dimension: intrinsic interest in the topic

In an effort to establish the level of intrinsic interest in the topic, students were asked about their prior experiences and immediate interest in the topic of the project, i.e., developing an Internet activity for Seniors Week. A sample of the responses is given.

> [Student 1] I worked as a diversional therapist with ageing clients for 7 years. This student demonstrated a very high level of interest in the topic, and was committed to a professional career in theaged- care area.

> [Student 4] I am studying this subject as an elective. I got into this area because of my own family situation and interest in disabilities. I didn't know anything at all about older people.

This student did not demonstrate a high level of intrinsic interest in the topic and had little personal experience to draw on.

Social dimension: levels of collaboration

The majority of students who were interviewed identified the importance of having prior experience and formal training in group-work processes for ensuring high levels of participation in group projects.

Intellectual	Social	Personal	Practical	Learning Outcome
Intrinsic interest in the topic. Prior experiences linked with new experiences in the development of new knowledge.	High level of group decision-making. Appreciation of different perspectives, shared understanding, engagement with real-life experience.	High level of risk taking. Meaningful personal contributions. High level of personal satisfaction.	Development of generic skills in team work, interpersonal communication, problem-solving, negotiation, oral presentation.	Deep learning associated with personal change, dispel misconceptions, integration of theory and practice, relate new learning to prior knowledge, and seek to solve problems for themselves, leading to transformational understanding.
Extrinsic interest. Limited or no prior knowledge. Interest motivated by factors external to the subject, e.g., Convenience of subject, other friends enrolled.	Low level of group participation. Highly diverse groups imposed rather than self-nominated – associated with a lack of group engagement.	Low level of personal contribution. Higher levels of personal anxiety. Not confident with autonomy, need for rules.	Limited development of skills associated with group work.	Surface learning. Primary orientation is task completion with minimum personal involvement. Some awareness of misconceptions, but lack of understanding about the nexus of theory and practice. Lack of integration of new knowledge with existing knowledge. No evidence of significant personal change.

Table 1. Student Experiences of Collaborative Learning.

> [Student 2] Well, basically because we had all done facilitation previously, I think we all went in there with the same idea. I could tell there was a lot more conflict in the first-year subjects. It was good for me because on reflection, I could see how bad my skills were first semester, first year. We were sort of thrown into groups and told to do it. It was only when you did interpersonal skills that you realized that part of the process is actually listening.

In approaching the group task, all students identified time constraints as an obstacle to fully engaging in collaborative learning with members of their immediate project group, and across other groups to ensure consistency of approach. As a result, there was a tendency in some groups for the majority or work to be done by a few students.

Personal dimension: degree of autonomy and personal contribution

In working with the older people, at times assuming a teaching role, all students reported a higher level of understanding about ageing and some surprising illumination of previously-held misconceptions about older people. All students were highly engaged with the process and reported high levels of personal satisfaction.

> [Student 3] It was just a brilliant role with the older people. I really enjoyed it. I think what this really taught me was finding a common ground. The whole dynamics of us and them completely changed. All of the barriers went down. I was surprised. I think I did tend to stereotype older people. Talking with them about common interests really changed that.

Practical dimension: developing generic skills

Students who fully participated in the group project and made meaningful personal contributions reported that they had developed better skills in areas such as problem-solving, communication, facilitation, presentation, and negotiation.

> [Student 3] More group work skills. I learned a lot about older people. For me, it was quite ironic to be facilitating a session on the Internet because I feel as though I have just got it together myself. That was good because your actual weakness can be a strength, because it

might be better not to come across as the expert.

DISCUSSION

This research, although on a small scale, supports many of the key points made in collaborative learning theory about the ingredients of effective collaborative learning. Positive learning outcomes resulting from collaborative learning have been identified as the development of lifelong learning skills such as interpersonal communication, teamwork, and problem solving. Intrinsic motivation is associated with increased self-efficacy and experiencing learning as a reward in itself. In order to realize the potential of collaborative learning in developing deep approaches to learning and good quality learning outcomes, teachers need to be aware of the way in which students are experiencing collaborative learning, and to determine the strategies that can be put in place to overcome barriers to these outcomes.

It is clear from the research that students need formal training in group-work processes, time management, and interpersonal skills in order to engage positively with collaborative learning situations. Most students identified time as an issue in developing good group processes. Teachers need to be cognisant of the time required to develop as a group and establish good group communication and collaborative learning strategies. Collaborative learning is very much a human interaction and, as such, is subject to the idiosyncrasies of individual personalities, drives, values, and preferences. Individuals need to feel valued as a part of the group and need to receive significant emotional and social support from both within the group and from the teacher. An important element of collaborative learning highlighted in this study, is the value of informal learning groups and peer mentoring in assisting students in making sense of their learning tasks and contexts.

There is clearly a need for students to have a clear goal and guidelines, whilst at the same time having the opportunity to indulge in some risk taking and to be creative in solving their own problems whilst developing new knowledge which has a basis in shared understanding and personal meaning.

Learning tasks, which have a real-life focus, provide stimulus to experiential learning which can assist in dispelling misconceptions, integrating theory and practice, and leading to a deeper understanding of the underlying concepts. Cultural stereotypes and myths can be challenged in the light of experiential learning contexts. This research highlighted how the cultural bias against older people as learners MacNeil (1998) was challenged by the behaviour exhibited by the older people with their intrinsic interest and motivation to learn and to be actively engaged in the learning experience.

Whilst collaborative learning situations provide the opportunity to share skills and expertise, this will not occur if the responsibilities are not shared and students are not able to learn from each other.

Although, the phenomenographic research only involved the student perspective, some evaluation was done of the older peoples' perspectives through a survey. The breaking down of barriers, dispelling of ageing stereotypes, and generation of a desire to learn was evident in many of the comments, such as, "important to keep the brain active" and "I enjoyed the break in my routine-life". The majority of the participants reported an interest in further involvement with the university and future Senior Week activities.

CONCLUSION

This small-scale research project has provided some insight into the student experience of collaborative learning. In many ways the findings of the research support the theoretical conceptions of collaborative learning in associating elements such as group decision-making, co-construction of knowledge, shared understanding, and highlighting misconceptions with deep learning. Student comments reveal the increased self-confidence in teamwork, communication, and oral presentation. For those students who had high intrinsic motivation and engagement with group processes the rewards of the learning experience were personalised and went beyond mere academic achievement.

The research also highlights areas of collaborative learning which, if not addressed, will compromise learning and often result in a surface approach to learning. These elements include inadequate preparation for group work, minimal personal contributions or no shared responsibility, lack of intrinsic interest, lack of group identity or engagement, and learning tasks

which do not encourage creativity or risk-taking. The potential of collaborative learning to develop lifelong learning skills and an orientation to "learning for life" is evidenced by the positive engagement of individuals across generations in a situation which offers an effective learning experience across the intellectual, social, personal, and practical dimensions of learning.

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LEARNED OPTIMISM: MOTIVATION FOR LIFELONG LEARNING IN A PRE-UNIVERSITY PREPARATORY PROGRAM

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ABSTRACT

Effective lifelong learning is dependent, to a considerable degree, on developing optimistic learners. This paper examines how a pre-undergraduate language course helped to encourage and enable students to become optimistic about their ability to succeed in university studies.

INTRODUCTION

An important component of emotional intelligence (EQ) – the attribute that links feeling with the thinking process – is optimism, the great motivator (Goleman, 1996). The optimistic individual believes that, despite setbacks and failures, things will generally turn out all right in the end. Pessimists, on the other hand, see failure as part of a personal attribute, impossible to change or control. Optimists are motivated by the need to get it right next time; pessimists lose their motivation because they "know" that nothing can be changed, since failure is intrinsic. According to the American psychologist and academic Martin Seligman (1990), optimism can be flexible and it can be learned. This conclusion is important for university students since optimism in many ways can predict academic success. Seligman contends that pessimism is not necessarily an innate, fixed trait, but that pessimists can learn the skills to become optimists. In other words, while they can recognise the situations where optimism can produce a positive outcome, they

will also know when a realistic approach is needed.

This paper seeks to examine the way that a Central Queensland University pre-undergraduate program, STEPS, through a holistic language curriculum, encourages and enables students to develop optimism about their ability to succeed in what may be, initially, an unfamiliar and daunting milieu. Effective lifelong learning, in the opinion of the authors, is dependent, to a considerable degree, on optimism, and preparatory programs like STEPS are playing a vital role in developing this attitude.

EXPECTATION

Jane is typical of many mature-age learners who find their way to university preparation programs. Her parents were country people who had left school after years four and five. After completing year ten, Jane had entered the workforce with the sole aim of working until she was old enough to marry and have children. Married life produced three children, but denied her marital happiness and mental stimulation. Her husband was an alcoholic and she was soon a battered wife, whose writing skills, as she says, were limited mainly to shopping lists. She admits to being timid with no confidence or sense of self-worth. Despite the fact that much of her secondary schooling had been successful, life held few positive expectations for her.

Expectation is an important facet of learning. Anyone who undertakes a learning project, whether in a formal or an informal situation, will hold certain expectations of success or failure. An optimist will usually believe strongly in the likelihood of success, whereas a pessimist may be less confident about the outcome. When, as sometimes happens, the learning project fails, or when the learner encounters a reasonably major setback, the attitude of the individual will play a crucial part in what happens next. The optimist retains a sense of hope; the pessimist is left with a sense of despair.

Like Jane, Marion is another mature-age learner who has faced despair through doubting her quite outstanding abilities, and is a self-confessed pessimist. She writes,

> I was bored, depressed, downtrodden, and silently screaming, but I didn't believe in myself. I didn't believe in my abilities. I wasn't tough enough. I felt I couldn't handle the responsibility of study and family. Self-confidence was a word for my children, not for me. (Marion)

OPTIMISM AND PESSIMISM

The American psychologist, Martin Seligman (1990), Professor and Director of Clinical Training in Psychology at the University of Pennsylvania, is an expert on motivation. He has made a detailed study of optimism and its effects on people's quality of life. Optimism and its antithesis, pessimism, are attitudes based on expectations. Most people are predominantly either optimistic or pessimistic by nature, though their attitudes may vary in degree according to a range of circumstances. Prevailing attitudes seem to be the consequence of a combination of temperament and experience. Our temperament results from our preferred mode of functioning in a complex and variable society; experience comes from the way in which society impinges on us (Seligman, 1990).

EXPLANATORY STYLE

Seligman (1990) believes that the way in which we react to the achievements and setbacks, successes and failures, that are integral to daily life, is due to our own particular explanatory style. This can be defined as a habit of thinking stemming from an individual's view of their place in the world; ranging from valuable and deserving to worthless and helpless, as Jane and Marion's worldviews illustrate. Many students display these extreme attitudes, but the self-analyses of others is often more tempered. According to Seligman (1990), there are three dimensions pertaining to each person's explanatory style: permanence, pervasiveness, and personalisation. Failure can often induce a sense of helplessness, ranging from temporary to permanent reactions. The optimist will find specific causes for misfortune that can be overcome; for the pessimist these causes will seem to be pervasive and incapable of solution. For the optimist, failure can be blamed on external causes; for the pessimist the causes of failure are internal and, therefore, intrinsic. Thus optimism generates high self-esteem, and pessimism generates low self-esteem. Such assessments of self-worth may not be altogether realistic, but they are very real to the individual concerned.

LEARNED HELPLESSNESS

Seligman (1990) shows that learned helplessness lies at the core of defeat or failure. Attitudes about self can so often become self-fulfilling prophesies. This is particularly true for students at all stages of learning where success or failure at school or university can have a significant impact on their future lives and careers. Learned helplessness results not just from a particular explanation someone makes for a particular failure but from the habits of explanation that are developed. A student may respond to setbacks in the learning process with the reaction, "This sort of thing is always happening to me in every endeavour I undertake. I can't succeed because I'm useless." Habits of explanation become so entrenched that they develop into the explanatory style of the true pessimist for whom failure will seem to be permanent, pervasive, and personal. These students probably are not really total failures, but the helplessness they have learned from their own explanatory style will not allow them to think otherwise.

Learned helplessness can affect students' expectations of failure to a degree where they lose all sense of motivation and come to regard learning as a futile exercise. Psychological tests on a range of learners have shown that it is not uncommon for the capable but pessimistic student to achieve lower academic results than the less capable optimist (Seligman, 1990). In a world where it is increasingly the norm for employees to continue to develop their skills and knowledge throughout their working lives, pessimism presents serious obstructions to successful lifelong learning.

LEARNED OPTIMISM

However, Seligman (1990) argues that optimism can be learned. There are countless adult learners like Jane and Marion who will be seeking to enter tertiary study in the future. Awareness exists at government levels of the importance of lifelong learning and of the need to provide programs that will prepare mature-age learners for a successful transition into university study. However, despite having often gained success in the workplace and in their personal lives, in our experience, many of those adults will still see themselves as failed institutional learners and will re-enter classrooms with trepidation and pessimistic explanatory styles. Nevertheless, the key element in succeeding and moving on from one stage of learning to the next is motivation. It is unreasonable for a student not to expect to encounter setbacks during the learning journey, but the motivated learner will find ways of meeting the challenges. Pre-undergraduate university programs have a common purpose: to enable prospective students, whatever their former educational experience, to develop the skills, knowledge, and understanding to complete an undergraduate, or perhaps ultimately a post-graduate, degree. It is logical, therefore, to suppose that such students can also be empowered to acquire new attitudes towards their studies by becoming optimistic and motivated learners. A truly effective preparatory program will address ways of developing these attitudes so that today's adult learners will become lifelong learners.

BALANCED SUBJECTIVITY AND OBJECTIVITY

One way this can be achieved in the language component of the program is to recognise the importance of balancing objectivity with subjectivity. American academic Parker Palmer believes that Western education's obsession with the objective world (Palmer, 1983), and its failure to give credence to subjectivity, leave people's inner lives barren and unexamined. We must educate in ways that "might heal rather than wound us and our world," writes Palmer (1983, p. 2). Thinking in the twenty-first century tends, in a number of ways, to move away from the notion of binary opposites towards a more harmonious linking of ideas. For example, reason and emotion, once regarded as diametrically opposed functions of the brain, can now be seen by many philosophers, educationalists, and psychologists as two sides of the same coin. Feeling plays an essential role in thinking. This is the basis of the concept of emotional intelligence, an idea pursued by the behavioural psychologist, David Goleman. Emotional intelligence combines self-awareness and self-discipline, motivation and persistence, and empathy and social skills (Goleman, 1996). Because emotional intelligence is now often seen as the key to successful lifelong learning, it is being cultivated in tertiary education institutions.

HOLISTIC LANGUAGE CURRICULUM

To help students take on the expectation that they will be successful in a challenging program

such as STEPS, the team has developed a language and learning curriculum that focuses on many of the concepts that Seligman believes are vital in helping to foster optimism. Even the name of the course, *Immigrants into a New Time,* prepares students for an optimistic outcome. Knowles, Holton, & Swanson (1998) remind us that "adults are most ready to learn when the learning meets an immediate life need, and are most motivated when it fills an internal need" (p. 172). Thus, many STEPS students are ripe for transforming learning experiences. Because it is imperative that, from the very beginning, language and learning experiences are positive and bring success, the holistic curriculum emphasises self-awareness while acknowledging the value of community and cooperation. This effective curriculum model, which gives credence to students' inner landscapes while at the same time developing their academic skills, has been adapted from Peter Singer's (1981) "Circles of Concern".

The first circle focuses on the self. Honouring students' life-stories and understanding growth are an important part of the STEPS philosophy; therefore, past experiences are valued as essential to the learning journey and the development of worldviews. All early writing is personal and creative. Students are treated as successful writers from the first day, and, after a few times, reading their writing aloud in sharing sessions can become a natural thing to do, even for the reluctant ones. They also are introduced to the work of behavioural science professor David Keirsey (1998), and gain an understanding of their temperament types and how these can influence different ways of thinking. Learning styles are evaluated and "whole-brain learning" is introduced.

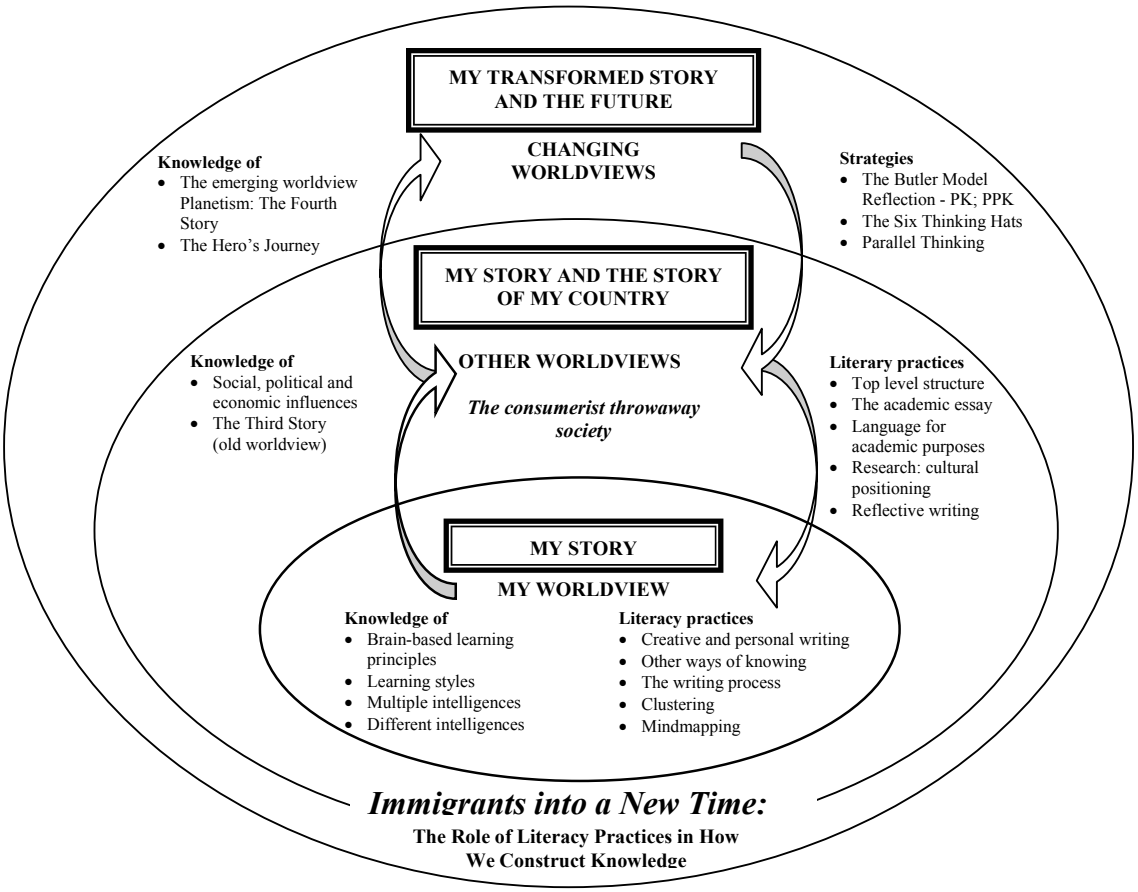

Figure 1. First circle - my worldview[1].

[1] From "Immigrants into a new time" by J. Simpson, 2004. Copyright 2004 by J. Simpson. Reprinted with permission.

New learning strategies are essential for many who see themselves as damaged learners as they are reluctant to revisit old ways that have brought past failures. Edward de Bono's (1990) six thinking hats are an effective introduction to thinking in other ways; his yellow hat being a commanding visual representation of an optimistic explanatory style. While the black-hat is not meant to represent pessimism but rather to herald caution and judgment, when black hat thinking is extreme, this hat can serve as a useful exemplar of pessimistic explanatory styles.

To many students, the most compelling aspect of the first circle is the 12 steps of the "Hero's Journey". These are based on Joseph Campbell's (1993) study of world hero myths. Campbell identified and named identical stages found in all hero myths. Hollywood screenwriter Christopher Vogler (1996) in his book, *The Writer's Journey*, adapted Campbell's stages of the Hero's Journey into the following 12 steps.

Second circle – cultural worldviews

The second circle embodies modern Australian society and its throwaway, consumerist mindset. In 'Flexible Optimism', the final chapter of Seligman's (1990) text *Learned Optimism*, the author examines the notion of how the self, the individual, is exalted in modern Western society. For many, the old beliefs (in God, our nation, the family) are weakening, while the individual has achieved more importance. We have greater personal choice and control, and our material expectations are very high. We are constantly bombarded by the lures of consumerism and advertising. For anyone with sufficient resources, this is a golden world. Many adult students are studying to gain a place in this golden world; often they are returning to institutionalised learning because they have been cast aside as a result of the deconstruction that is creating confusion and "Supreme Ordeals" in a rapidly-changing and increasingly-materialistic society. Australia, along with many societies, is undergoing a Hero's Journey. Supreme Ordeals can breed pessimism; pessimism can breed victimhood.

However, through their academic research and writing on the influences that are impacting on post-modern Australia, students gain greater understanding of their worlds and how cultural worldviews are formed, and are thus better equipped to challenge any former false, pessimistic attitudes. Seligman (1990) suggests that disputing pessimistic beliefs with evidence can be an effective way of dealing with them. Academic conventions require writers to present alternative views on a topic and Seligman exhorts us to "give them [pessimistic beliefs] an argument. Go on the attack" (p. 218). For example, many STEPS learners who have faced Supreme Ordeals willingly answer the "Call to Adventure" to investigate changed social values in areas such as gender roles, families, and workplaces. By looking more objectively at all the issues involved, and through the reflection that their Hero's Journey research brings, they often come to a deeper understanding both of events that have created their particular adversity, and of their responses to these events. Disputing erroneous pessimistic beliefs through evidence gained from research often brings about a transformation in worldviews.

Third circle – changing worldviews

Lastly, in the outer circle, students are immersed in the vastly changing views of reality that reflect discoveries from both the worlds of the new sciences and personal transformation. Advances in quantum physics, complexity theory, and holistic biology have created a shift in values from separateness to connectedness (Capra & Steindl- Rast, 1991), and, although the shift, which Robert Theobald calls the "Fourth Story", is as yet minimal, many people are tiring of the "cult" of the individual and the lack of purpose that so often transcends our lives, and are yearning for a return to a greater sense of community (Theobald, 1999). Seligman (1990) too, mourns what he calls the "waning of the commons" (p. 284). He writes, "The epidemic of depression [in Western society] stems from the much-noted rise in individualism and the decline in the commitment to the common good" (p 286). However, as students gain the understanding that conflict and confusion are a natural part of the process of growth and transformation (Butler, 1993), they are led to understand systems thinking. This informs them that they are part of much larger systems and that their positive transformations are contributing to the greater transformation of all the systems of which they are a part – from families and workplaces to the whole of society (Pearson, 1998). Throughout the course, alongside traditional rational, logical thinking, learners have experienced new ways of learning and other ways of knowing, and now are led into an understanding of futures thinking (Theobald 1999). This represents the transformed Hero's

Journey, both in regard to themselves and to their country.

CONCLUSION

Throughout the course, students have, hopefully, gained a deeper appreciation of themselves and others as well as an understanding of the cultural mindsets that have led to challenges faced by modern Australia. However, they have also awakened to the fact that positive changes in the thinking of individuals can bring about positive changes in society. No one is powerless. Butler (1993) shows that, if it does not pass through confusion and conflict, adult learning is less effective. In other words, both challenge and reflection are vital in the learning process for transforming worldviews. This recognition can energise and motivate adult learners. As they accept the benefits to themselves of learned optimism, they can now recognise they have the expertise to be successful lifelong learners. Seligman (1990) teaches skills to reverse negative thinking patterns that are far beyond the scope of language and learning; however, reflection is not beyond this scope, and reflecting on the 12 steps of the Hero's Journey has become a crucial means for students to chart their own learning journeys. Many accounts testify to the fact that what they have chronicled is a journey from pessimism to optimism.

In the last week of STEPS the students are required to write a final Hero's Journey reflection on their STEPS experience. Both Jane and Marion finally came to realise how much they have to contribute both to lifelong learning and to society. These were Jane's final words,

> Thus I return with elixir, confident to undertake the Bachelor of Learning Management. I now have faith that I can tackle unusual or difficult assignments or essays. I have belief in myself that I never thought would exist. I now know who I am. I am a new person and I can never go back, nor do I ever want to. I am so happy to have found this new me.

Marion also recorded her pride in her transformed worldview:

> The STEPS journey opened my eyes to much of my black hat thinking and, although I still recognise the black hat as being there, I have also developed a sense of hope. Although I never thought it possible, I do have an elixir. I have confidence. I feel empowered. I'm proud of my achievements and my staying power. It is in this development of hope that I have been transformed.

(Pseudonyms have been used for the student respondents in this paper).

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KEEPING THE DOUGH RISING: CONSIDERING INFORMATION IN THE WORKPLACE WITH REFERENCE TO THE BAKERY TRADE

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ABSTRACT

This paper will discuss information needs within the workplace while concentrating on non-academic trades. Information literacy is identified as a necessary skill for employment. The paper discusses embedding information literacy in the training packages used at TAFE. It outlines the aims and objectives of embedding these skills.

INTRODUCTION

This paper will discuss the need to embed information literacy into training packages. This is being done at some universities within some academic programs, such as Central Queensland University's education program. As Orr and Cribb (2003, p. 42) stated, "It was recognised the information literacy skills would need to be embedded across the program and that it would need to be sequenced in such a way that students would continue to enhance and develop their information literacy skills."

We advocate that information literacy is equally important in the vocational education sector. There may be an assumption that VET (Vocational education and training) students do not need the same degree of information-literacy education as university students. If students are learning a trade such as meat trades, floristry or bakery, which are practical activities, what benefit would information-literacy skills be to them? As this paper will show, information literacy is just as essential to these students as to a PhD student. Information literacy is becoming increasingly recognised within the workplace, and students need to be adequately trained and prepared for the working environment – for the real world and for lifelong learning.

INFORMATION NEEDS FOR BAKERS

One of the authors was asked to show a group of first-year apprentice bakers around the library. "Tell them where to find their books and all the usual stuff". When the apprentices were asked, "What do you think you need to know?", the responses received were not surprising. "What can you teach us?", "Why do we need to know anything about the library?", "What good would anything you have to tell us be in the real world?", "We make bread – we don't need books to do that", "Our supervisor showed us the ropes" "We learnt everything on the job and come to college to do a bit of the theory stuff then in three years we're qualified and don't need any of the stuff we were taught", and "We could open a business after we graduate and become successful."

So what do they need to know and why is it so important that they become information literate? How does information literacy keep the dough rising?

The Institute

Situated in Brisbane, the Southbank Institute is the largest vocational education institute in Queensland. It is set alongside the Southbank Parklands. Southbank Institute has a good record, with graduates winning many awards in their fields of expertise. COTAH is the business name for the College of Tourism and Hospitality within the Southbank Institute.

What bakery courses are offered and how does the library help?

The COTAH campus offers training in a number of bakery areas: from pre-trade – which enables graduates to work in a bakery; through to that of baker and pastry cook – which enables those qualified to own or manage a bakery or similar establishment.

Since the authors both work at the COTAH campus library where bakery courses are taught, it seemed appropriate to target this group of educators to determine the extent of information-literacy skills needed in a trade workplace. To start the study we discussed with

teachers the probable information needs of bakers. These needs included the following.

- Bread making knowledge and recipes.
- Food safety.
- Equipment upgrades.
- Workplace health and safety legislation.
- Payroll and tax considerations.
- Council and government regulations and laws.
- Latest innovations in the bakery industry.

Next, a survey was conducted of twenty-four bakers working in the Brisbane area and six from regional Queensland, to determine what information they perceived was needed. Nine, first-year apprentices who are studying at COTAH were also surveyed.

The type of questions asked provided ideas for information literacy content and sources of information that should be demonstrated to classes. The survey also provided an insight into information use in the workplace.

RESULTS OF SURVEY

A mixture of different types of bakeries was surveyed: franchise, in-store, and independently around.

The workers in these bakeries were asked about their information needs. Those at the franchise bakeries found most of their information needs from their franchisee. The in-store bakery managers had their information supplied by the head office. The smaller owner-operators relied on the councils, industry representatives, and sometimes the Internet. The survey indicated that bakery staff had a wide variety of information needs but did not always know the appropriate places to find information. There are two professional bakery associations in Queensland. The results indicated that half of the respondents were not members of either. However, as stated by members, these associations provide a rich source of information. Many of the bakers and managers accessed the Internet for work purposes. Staff at all bakeries, except one in-store bakery, indicated that it was outside business hours that they had to source what they needed, and that this led to an assumption that information seeking was not a high priority. Therefore, time is not allotted in the working day for such tasks. Although some *bakers* may not be able to find the opportunity to do this work during a business day, a number of the bakeries were not managed by bakers. Some information would have to be accessed during a business day, such as making phone calls to – and meeting – council officials, industry representatives, and professional organizations. The non-baker managers would, we assume, be able to set aside time to source information during their working day. The fact that information is sourced outside business hours indicates that bakers and others need good information-literacy skills to locate what they need. Some of the information-literacy skills needed are,

- techniques to limit searches,
- information evaluation,
- knowledge of information resources.

It is interesting to note that most of the respondent bakery staff place a reasonable amount of importance on information-seeking skills within the workplace-training program. Rosenberg (2002) makes this point, "Information literacy must be part of the skill set of almost every employee who works with information in a small business" (p. 7).

The apprentice bakers said most of their information was passed on to them from their manager or the business owner. They had not accessed the information resources before but many indicated that what was shown to them in the information-literacy class was useful. One student commented, "Information was passed on with great ease, with step by step instructions to Internet sites…." Another student said that, "the library service had been helpful as far as assignments go, it does help researching." This comment suggests that the student did not recognise the role of the library in lifelong learning. This may be the perception of all students and, if so, it needs to be addressed in our information-literacy content. These are first-year apprentices who return to COTAH annually during their apprenticeship, and we have the opportunity to encourage lifelong learning on these occasions.

The results indicated that there is a need to provide bakery students with the knowledge of how to find out about information. Resource needs change, so only giving them ways of obtaining knowledge about a specific topic will limit their abilities to search for further resources in other situations. It is necessary to show them how to formulate their own searches to update their industry knowledge. They need

to be aware that the skills they are currently learning can be utilised throughout their lifetimes. "It is important to be information literate in the work settings because the workplace of the present and future demands a new kind of worker who has to access, manage and use the vast amount of information" (Cheuk, 2002, p. 2).

INFORMATION LITERACY WITHIN VOCATIONAL EDUCATION TRAINING PACKAGES

Training packages are used as curriculum documents in vocational education. The Australian National Training Authority (ANTA) (2004) defines training packages as "sets of nationally endorsed standards and qualifications for recognising and assessing people's skills… [Each package] describes the skills and knowledge needed to perform effectively in the workplace."

Training packages are divided up into units of competencies. ANTA (2003) has the following definition of competency. "The concept of competency focuses on what is expected of an employee in the workplace rather than the learning process, and embodies the ability to transfer and apply skills and knowledge to new situations and environments" (p. 37).

Each unit of competency should contain the key competencies as identified by the "Mayer Committee" (Australian Education Council, 1992).

What are key competencies?

In 1992 the Mayer Committee studied what generic skills were required within every workplace. It came up with seven key competencies, which are considered to be necessary knowledge skills for the workplace.

"Key competencies are essential for effective participation in the emerging patterns of work and work organisation. They focus on the capacity to apply knowledge and skills in an integrated way in work situations" (ANTA, 2003 p. 39). These key competencies are listed below

1. Collecting, analysing and organizing information.
2. Communicating ideas and information.
3. Planning and organising activities.
4. Working with others and in teams.
5. Solving problems.
6. Using mathematical ideas and techniques.
7. Using technology.

(Australian Education Council, 1992, p. 5)

The Mayer Committee gave each key competency three levels of performance.

> Level 1 requires the student to be able to undertake tasks effectively.
> Level 2 requires the student to be able to manage tasks effectively.
> Level 3 requires the student to be able to evaluate and reshape tasks effectively.
> (Australian Education Council, 1992, p. 13)

A graduating baker should be at level 3 by the end of his or her apprenticeship.

How do the key competencies relate to information literacy?

The "Prague Declaration" (Information literacy Meeting of Experts, 2003) states, "the ability to identify, locate, evaluate, organize and effectively use information to address issues or problems at hand that face individuals, communities and nations.; it is a prerequisite for participating effectively in the Information society, and is part of the basic human right of life long learning." The key competencies listed previously can be related to the Prague Declaration as shown in table 1.

Mayer key competencies	Information-literacy principles
Collecting, analysing and organizing information	locate, evaluate, organize and use information
Communicating ideas and information	use information to address issues
Planning and organizing activities	locate and organize information
Working with others and in teams	use information to address issues or problems that face communities
Solving problems	use information to address issues or problems
Using technology	Information technology is frequently combined with information literacy skills.

Table 1. Comparison of Mayer Committee key competencies and information-literacy skills.

ANTA asserts that training packages need to provide for the integration of the key competencies. It also suggests that the key competencies need to be implemented into each stage of the training cycle. (ANTA, 2003 p. 41)

As information literacy can be classified as a key competency, it is essential that it be embedded into training packages along with the other Mayer Committee competencies. At each stage of the training cycle information literacy is relevant.

Employability skills

The Australian Chamber of Commerce and Industry and the Business Council of Australia (2002) studied the skills required by new and existing employees. They found that considerable work had been done in various countries to find generic skills required by all employees. Comparing the skills drawn up by experts in the various countries, a employability skills framework was drawn up.

The employability skills

- Communication that contributes to productive and harmonious relations.
- Team work that contributes to productive working relationships and outcomes.
- Problem-solving that contributes to productive outcomes.
- Initiative and enterprise that contribute to innovative outcomes.
- Planning and organising that contributes to long-term and short-term strategic planning.
- Self-management that contributes satisfaction and growth.
- Learning that contributes to ongoing improvement and expansion in employee and company operations and outcomes.
- Technology that contributes to effective execution of tasks. (Australian Chamber of Commerce and Industry and the Business Council of Australia, 2002, p. 7)

Within the framework, each skill is broken down into elements that employers identified as important. Employers identified sharing information as an element of communication. Collecting, analysing and organizing information is placed under the skill of planning and organizing. Information literacy is an element of the sixth skill learning that contributes to ongoing improvement (p. 8-9).

CONCLUSION

The results of the survey and the research show information-literacy skills in the workplace are essential. It is not enough to show students how to use a particular library or where to find the books they need. By definition, if the skill is

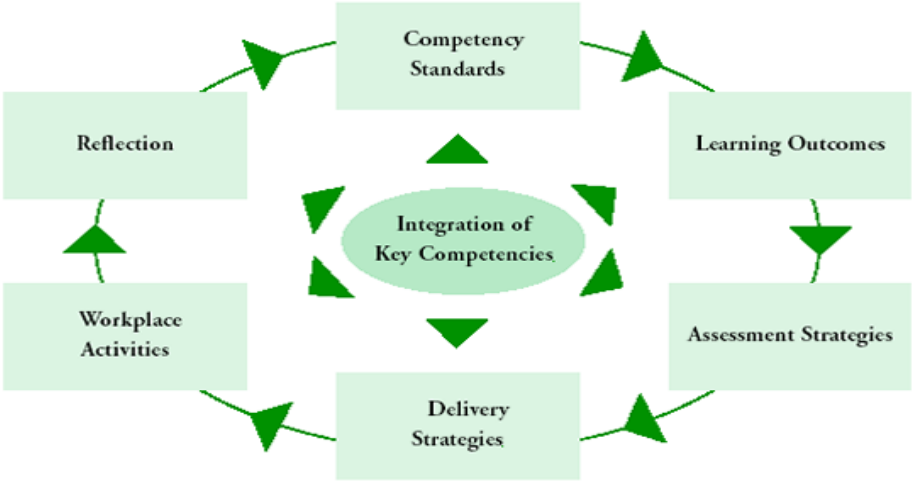

Figure 1. The training cycle[1].

[1] From "Integration of the key competencies within training packages", In *Training package development handbook* (part 5, section 2, p. 5). Copyright 2001 by Australian National Training Authority (ANTA). Reprinted with permission.

taught and understood it then becomes an employable skill. Students will then be able to relate finding information to their everyday working environment, and to their adult life in general.

The information that students require might be something simple, such as finding recipes on the Internet, looking in a book for details about a cut of meat, or finding a suitable flower for a floral arrangement. This search might involve finding relevant information about food safety, looking up the Workplace Health Safety Act, or finding the wages and conditions award for bakery staff. "Information literacy in the workplace context is defined as a set of abilities for employees to recognise when information is needed and to locate, evaluate, organize and use information effectively" (Cheuk, 2002, p. 2).

All skills should be transferable across various work tasks and functions. This will then contribute to the effectiveness and productivity of the business, whether it is small or large. In order to run any business successfully, the correct information needs to be found quickly. In many cases small businesses do not realise that having access to and using that information may increase their sales and productivity. Rosenberg (2002, p.3) comments that an employee of a small business without effective information gathering and evaluating skills will take time and resources to be trained. Students should obtain these skills during their training at college.

The survey was undertaken of the baking industry, but the conclusions drawn from the data collected can be transferred across other trades. Our recommendation to the industry-based associations is that information literacy be embedded in all training packages. Librarians should be invited to assist in the training package review process to provide suggestions for embedding information literacy into training packages. The information-literacy standards published by the Council of Australian University Librarians (CAUL, 2001) could be used as the marking criteria.

The bakery apprentices who went into their class saying "What possible use is this to me, I want to open a bakery and become successful" will need to realise that, in order to keep the dough rising (bread and money), information-literacy skills will be as important to them as knowing how to bake bread.

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CONSTRUCTIVIST WORKPLACE LEARNING: AN IDEALIZED DESIGN PROJECT

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"If you wish to know, learn how to act." Heinz von Foerster.

ABSTRACT

In this project, systems thinking methodologies, populated by information competence principles and practices, guide organizational learning. Workers "learn by doing" as they collaboratively design new information systems that anticipate system beneficiaries' needs. Sustainable information capture and sharing strategies, embedded in organizational culture, promote workers' practice of lifelong learning skills.

INTRODUCTION

Amidst dynamic and even turbulent environmental conditions, driven by rapid technological change, aggravating financial uncertainty, and escalating customer expectations, organizations are required to learn continuously. Guided by a clear understanding of "what business we're in", leaders must frequently reinvent processes, procedures, and products. Concurrently, workers seek sense making and personal growth through their work place activities.

In response, we explored implications of the contemporary environment for leaders (Mirijamdotter & Somerville, 2004) and concluded that the purpose of leaders is to extend workers' interpretive understanding of, and relationship with, information. The process involves rethinking both the nature of organizational information and the purpose of workplace activities. Workers' heightened understanding of their own relationships to information permits them to make their tacit expertise explicit, through collaborative exchanges with colleagues and other organizational stakeholders. This conversational process supports the conversion of data into information and, from there, into knowledge. These activities sustain ongoing workplace learning.

As the next phase in our applied research, we focus on desirable changes in the way organizational workers think and what they think about. We employ constructivist methods to initiate and to sustain organizational learning, i.e., "the process through which an organization (re)constructs knowledge" (Huysman & de Wit, 2003, p. 29). This paper suggests that lifelong learning can be successfully accomplished by actively involving information workers in the planning of their organizational infrastructure, and related activities. Enabled by the analytic and synthetic processes embodied in system thinking, workers are readied to plan for an ideal organizational future. In this real-world initiative, we create the "roadmap" (Bellows, 2003) necessary to direct activities toward a mutually negotiated destination, with recognizable landmarks. En route, we cultivate workers' thinking skills in the hope of facilitating their improved abilities to extract context and implication from new situations. Better equipped, they should be able to demonstrate greater facility in improvisation amidst considerable future change.

PROJECT CONTEXT

This paper reports results from a pilot project among some members of the Information and Instructional Services (IIS) group at the Robert E. Kennedy Library at California Polytechnic State University (Cal Poly) in San Luis Obispo, California, USA. The framework for this organizational transformation effort is "systems thinking" which contextualizes issues in terms of a multifaceted, but unified, whole and how the whole's properties are defined by the interactions of its constituent parts with one another and the external environment . The project intends to produce "better thinking about thinking" (Bellows, 2003) for the ultimate purpose of creating a learning organization that is reflective of lifelong learning principles and practices.

Our work has its origin in the literature of learning organizations as advanced by Peter Senge (1994) and others. As such, it recognizes that organizations are products of the ways that people in them think and interact. For instance, planning processes are usually strategy oriented and depend on input solicited using both top-down and bottom-up data generation techniques. However, without an articulated process for analyzing the seemingly disparate data, organizations are only infrequently able to convert data into actionable information.

Stated differently, the all-too-frequent failure of traditional planning processes is attributable to concern with planning for the future, but not planning the future itself. Few initiatives are carried out to completion because the futures planned for were different to the unfolding realities in significant ways. Lacking relational understanding of the organizational situation, in an environment of cognitive and motivational disincentives, workers are insufficiently prepared to improvise amidst considerable change. This recognition prompted our pilot project, in which we intend to devise a means to enable workers to extract context and implication through their work experiences.

SITUATIONAL ANALYSIS

Since Cal Poly has valued the "learn by doing" pedagogy throughout its one hundred year history, library leaders at the institution maintained this time-honored tradition in their selection of a project methodology: the systems thinking practice of Soft Systems Methodology (Checkland & Holwell, 1998). The first of four constitutive elements is the "finding out" phase in which "gaps in understanding", from a variety of points of view, generate research question and data-collection strategies. Following this is the visual "modeling" of findings, for the purpose of clarifying the needs of the populations to be served. This leads to the third phase, "comparing", in which the adequacy of current organizational programs and services is evaluated. In the fourth and final stage, "taking action," participants redesign systems and services to better align with the needs of their user community.

This enterprise-level thinking process was introduced in a pilot project, utilizing interactive planning methodology. During the initial situational-analysis phase, leaders guided the application of systems thinking to the consideration of qualitative and quantitative research data. The traditional measures of circulation statistics, "reference desk counts", interlibrary loan numbers, and collection volumes were enriched by qualitative data. Usability studies produced evidence of faculty and student difficulties in using high-quality subscription databases. Focus-group transcript analysis revealed students' opinions of the library within the larger, "Google-ized," digital-information environment. Phenomenographic interviews probed deeply into students' internal conceptions of information and information usage in their personal lives and their work lives.

More research was conducted by class members of an upper division human-computer interaction (HCI) class at Cal Poly. Student teams employed focus groups, paper-and-pencil surveys, and usability studies to compare library workers' perceptions of their roles, as well as their systems and services, with those of the campus user populations. In addition to making recommendations for more user-centered programming, students produced conceptual prototypes for redesigned commercial search engines and created user-relevant Web pages for information seekers working virtually.

Systems thinking then guided "sense making" activities which crossed traditional work-group boundaries. Among the groups most impacted by the library-wide findings were the paraprofessionals who staff a public information desk. This paper tells the story of these individuals' planning and early implementation experiences, in response to data analysis, as they practiced thinking systemically.

An appropriate "feeling tone" for this journey was set by the group leader who conducted personal interviews with each team member, using appreciative inquiry techniques to probe individuals' unique talents and workplace ambitions. Typical questions included, "What is your greatest contribution to the organization?" and "Tell me a story about your proudest moment in this organization." The intention of the latter was to set a reassuring, celebratory feeling tone which facilitated "positive possibility" thinking. Rather than focus on the more traditional questions, such as "What are the problems?", she asked group members: "What are the potentials?"

Within a refreshed culture of appreciation and driven by research-derived insights, workers next applied their developing skills to identifying their purposes within the larger organization. This inquiry produced transformative notions of the group's vision and mission which underscore the importance of both possessing and expressing information competence (IC). Group members, for instance, are understood to be master learners who apply Cal Poly's "learn by doing" approach to the ongoing analysis of users' learning needs and, from that, create value-added information for dissemination in responsive programs and services. The group mission reflects a new understanding of the "business we are in": it states that through a process of intentional learning, staff members develop the personal heuristics to support their own information-handling work and to better coach, collaborate, and co-learn with members of the academic community.

These realizations, in turn, animate the group's working understanding of their responsibility for their own learning process. They share a commitment to actively employ systems thinking in transforming organizational culture to one devoted to explicit learning about information work through firsthand experience. This assumes an ongoing, iterative process in which individuals access and internalize new information and then purposefully leverage it in the act of making new intellectual connections through information sharing. In this way, workers are constantly re-valuing, reinterpreting, and reconstructing information competence – through the sense-making processes of question framing, information searching, resource evaluation, and idea generation. This work set the stage for interactive planning and, specifically, idealized design, which is the focus of this project report.

INTERACTIVE PLANNING

Interactive planning, as described by theorist and educator Russell Ackoff (2001), begins with the scenario that the organization has been completely destroyed but the environment remains as it was. Then planners design an organization with which they would replace the existing organization immediately, subject to only two constraints – technological feasibility and operational viability – and one requirement – an ability to learn and adapt rapidly and effectively. Of the latter, Ackoff says,

> The organization should be designed so as to be able rapidly to learn from and adapt to its own successes and failures, and those of relevant others. It should also be capable of adapting to internal and external changes that affect its performance, and of anticipating such changes and taking appropriate action before these changes occur. This requires, among other things, that the organization be susceptible to continual redesign by its internal and external stakeholders. (p. 8)

He then clarifies:

> It should be noted that the product of an idealized design is not an ideal organization; because it is subject to continuous improvement, it is neither perfect nor utopian. The design produced should be that of the best ideal-seeking system of which its designers can currently conceive. They may, and probably will, be able to conceive of a better one later. (p. 8)

IDEALIZED DESIGN

Russell Ackoff (2001) has said of the idealized design process that it,

> is directed at creating the future. It is based on the belief that an organization's future depends at least as much on what it does between now and then, as on what is done to it. Therefore, this type of planning consists of the design of a desirable present and the selection or invention of ways of approximating it as closely as possible. It creates its future by continuously closing the gap between where it is at any moment of time and where it would most like to be. (p. 3)

Within this context, having reflected on findings from the initial situational-analysis phase, IIS group members identified a "perfect world scenario". Named the Research and Information – Services and Education (RISE), this organizational information system both educates and informs workers at an academic information desk. It encourages learning through ongoing conversation facilitated by computer-based tools, including an online discussion forum, an educational courseware stream, and a knowledge database. It is, in turn, part of a larger activity

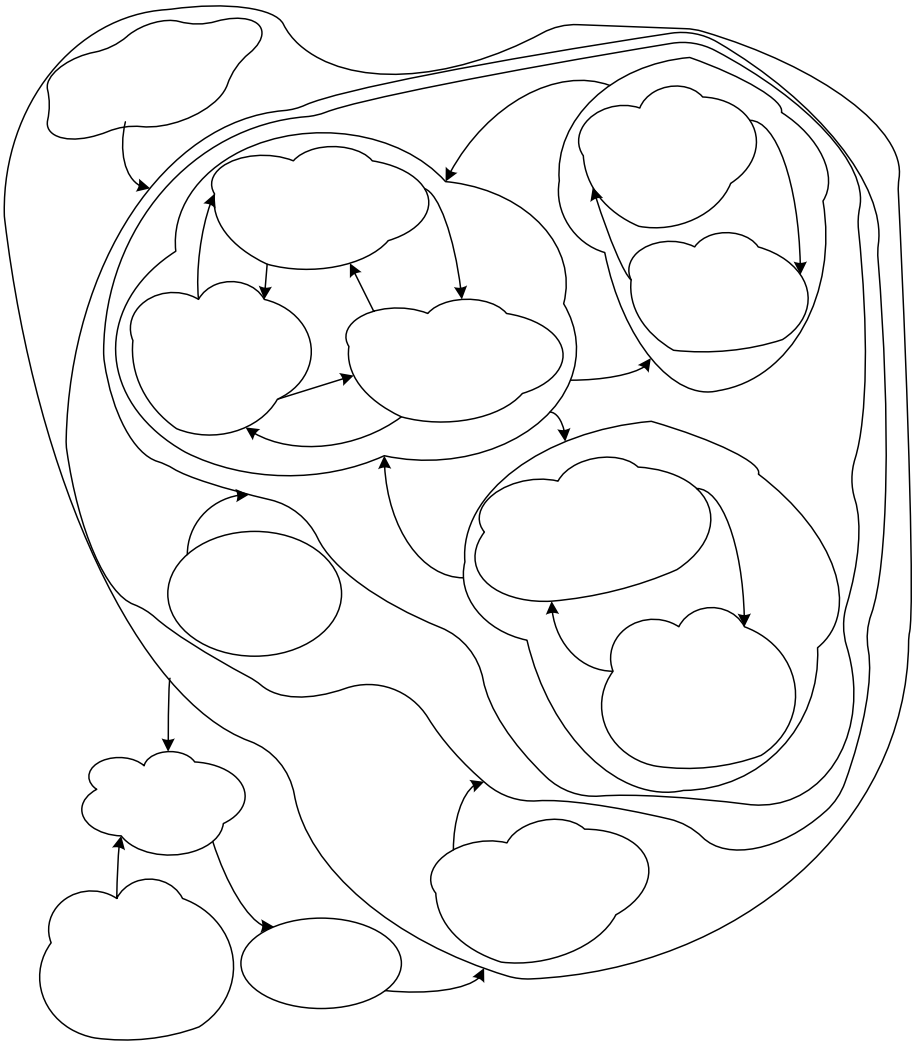

Figure 1. RISE System Activity Model.

system that exists to promote information sharing and knowledge generation. Conceptualization and construction of the design and content is the responsibility of RISE team members, as is its maintenance and enrichment.

The RISE System Activity Model shown in Figure 1 is comprised of the activities necessary to fulfill its purpose: information sharing and knowledge capture. The work is advanced by ongoing conversations which seek to make tacit knowledge explicit, and by using systems thinking to analyze and synthesize. In the first of these activities, RISE workers initiate and sustain conversations among themselves, through which they learn to appreciate their first hand knowledge and that of others. Staff also conduct conversations with university students, in which they clarify information needs, and apply what they know. Further learning occurs when an individual's own expertise is supplemented by what other colleagues teach them through proactive information sharing.

The second activity aims to capture data, information, and knowledge for formal representation in the information system. This analysis is next reconstructed for subsequent application, in context, by RISE information desk workers. On an ongoing basis, workers assume responsibility for envisioning an even more ideal information system – as a result of insight gained through real work requirements, as depicted in the third activity.

Finally, the model acknowledges that all these activities need to be evaluated in relation to the system purpose. Group members chose Bruce's (1997) seven phases of relational information competency theory as a guide for building

database content and also for assessing system adequacy. Bruce's work features a series of maturational levels that begin with a basic capability with technology and move the individual to an increasingly more sophisticated appreciation of information sources, information use and problem solving, and information management. The model acknowledges the importance of "understanding…the characteristics of information…[as well as] issues of intellectual property, authenticity, and provenance…[especially in] networked environments where the traditional signifiers of quality are absent" (Lougee, 2002).

LEARNING OUTCOMES

The rapid pace of change in and around modern organizations requires heightened levels of competence and new areas of expertise from organizational workers. This project assumes that the abilities necessary to sustain ongoing organizational learning can be forged by actively involving information workers in the planning and implementation of the new organizational infrastructure.

In this paper, we reported on a pilot project to plan and construct an organizational information system that supports information need satisfaction at a public service desk. These activities provided opportunities for workers to take part in re-thinking designed to inform re-acting. Our results-to-date suggest that workers can better anticipate and respond appropriately to change through the application of systems thinking in an environment designed for organizational learning. We intentionally advance workers' learning by enhancing their relationship to information through both systemic physical (face-to-face) and virtual (computer-mediated) exchanges. Group learning was further enhanced by the addition of other collegial experts' tacit information, made explicit and supplied "upon demand" to the RISE workers. Throughout, organizational learning was captured in the computer-based RISE information system to facilitate subsequent recall on an as-needed basis. Continuous improvement occurs as workers continue to reflect upon, talk about, and reconsider improved pictures of idealized design.

CONCLUDING THOUGHTS

We now stand poised to introduce systems thinking throughout the organization. In doing so, we envision a sustained, nourishing, workplace environment rich in relational information opportunities, in which information workers' commitment to shared images of the future promotes ongoing dialogue. We anticipate that cross-functional teams will dynamically mobilize their energies and actions to achieve common goals and draw forth an intelligence and ability greater than the sum of individual members' talents. As participants become able to better leverage their interdependency, we anticipate that they will, through intelligent, conscious choice, advance in their abilities to deal effectively with the forces that shape the consequences of their actions.

Our attention has now turned to better understanding the many challenges of building and sustaining the behavioral, cultural, and organizational dimensions of a perpetual learning organization. In so doing, we employ a social constructivist approach to knowledge, grounded in systems thinking, which understands organizational learning as an institutionalizing process through which individual knowledge becomes organizational knowledge. Institutionalization is the process whereby practice becomes sufficiently regular and continuous to be described as institutional. Hence, our attention is now on the process through which individual or local knowledge is transformed into collective knowledge as well as on the process through which this socially-constructed knowledge influences, and is part of, local knowledge.

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EXPERIENCES OF NEW PROFESSIONALS PROMOTING INFORMATION LITERACY IN A CORPORATE ENVIRONMENT

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ABSTRACT

In this paper, the authors argue that most new library graduates are not being equipped with the knowledge and skills they need to effectively implement an information-literacy program in the workplace. They share their experiences of promoting information literacy in a non-educational environment, and offer some suggestions on effective workplace learning for new librarians.

PREPARATION FOR WORK

Professional library degrees in Australia are accredited by ALIA (Australian Library and Information Association) and teach a core set of skills for librarianship. We, the authors (Pamela and Carmel) found that when comparing our university education our qualifications and senses of preparedness for training roles were vastly different.

Carmel graduated in 1997 and embarked on her library career with an understanding of, and commitment to, adult learning theory, and saw information literacy as central to what librarianship was about. This can be attributed to Carmel's full-time job of teaching research skills in an academic law library during her studies. Her exposure to adult education, problem-based learning, and information literacy on the job led her to focus on these areas in her studies. Having a mentor in Christine Bruce also encouraged Carmel's passion for information literacy.

In contrast, Pamela graduated unaware that teaching could be part of a corporate librarian's role. Although familiar with the concept of information literacy, her degree had ill-equipped her with the skills to articulate and teach lifelong learning skills to others. But as her training opportunities at the law firm, Blake Dawson Waldron (BDW) expanded, Pamela became convinced of the importance of teaching in librarianship. Pamela graduated with the belief that librarianship is a service profession. Our motivation comes from a genuine desire to help. Information-literacy training was an opportunity to express this.

We both consider that a thorough grounding in teaching and learning theory is now a core

graduate requirement. Library and information studies (LIS) educators who do not currently offer this as part of the LIS degree are doing a disservice to their graduates.

INFORMATION LITERACY TRAINING AND PROFESSIONAL AIMS

Teaching information literacy, gives librarians an opportunity to demonstrate aspects of their professional beliefs. For example, a desire to be more useful to his or her clients leads to a desire to alter the balance of power that can be displayed in a librarian's interaction with them. Teaching information-literacy skills is one way a librarian can do this, as clients see the librarian as a guide (rather than a gate keeper) to help them wade through the masses of information and potential sources of information.

By being a facilitator rather than an instructor in these sessions, librarians encourage their clients to explore what they already know, which is empowering for the clients. Facilitation also removes the barrier between expert and user – the librarian physically steps out from behind the reference desk and also, psychologically, closes the distance between themselves and the client. By removing ourselves from the library and putting ourselves in situations where we can learn with our clients, librarians become more approachable.

Not only does training allow us to demonstrate our professional beliefs, it is also a rich marketing opportunity. By spending the considerable effort designing and delivering quality sessions which attendees find useful, we show them that we are passionate experts who take our role seriously. Teaching is a social experience as well. Acting as facilitators, we share the learning experience with our clients. As stated by Lumis in *Information for a New Age: Redefining the Librarian* (as cited in Peacock, 1999, p.183), we build a coalition. That is, training enables us to develop a relationship with those we train. This relationship is very different from the one built up during a reference interview. The "connected" librarian trainer becomes a larger part of the client's information paradigm.

THE TRAINING PROGRAM AT BLAKE DAWSON WALDRON

At Blake Dawson Waldron, the training program is run by a national team, headed by Carmel. Her national, full-time management position as training librarian was previously untested in Australian law firms. The transition from university training to a law firm challenged Carmel's assumptions about teaching. It meant an adjustment to cater for the peculiarities of a corporate environment. Carmel wanted to move away from a program of traditional "corporate training", which can imply teacher-centred skills transfer with no room for critical thinking or reflective learning. Teaching information literacy is more collaborative than this and it deliberately addresses a range of critical and lateral thinking processes. The approach taken by the Blake Dawson Waldron team is to encourage participants to learn from one another and to challenge their assumptions about information. The librarians are not just teaching their clients the "how-to" skills feature by feature, but encouraging them to approach a problem or task strategically.

In all the sessions that form part of the research training program, the librarians at BDW do not simply encourage people to use information or library services, but rather we ensure they have the *capability* to use information *effectively*. This is not new to academics and academic librarians who have been encouraging critical thinking and an holistic approach to research for many years, but in a corporate library environment it is a significant departure from what is expected.

Sanchez (2001) describes five learning cycles that contribute to organizational learning. At the base, he puts individual and group learning cycles. He argues that it is critical to share knowledge with others in the group, and that adults learn not just by doing, but also by analysing. Knowing why is essential for competence, according to Sanchez.

The team at BDW agrees with those sentiments. Techniques such as taking a strategic approach to scenario-based research exercises, encouraging group discussions, and deliberately critiquing and comparing products and methods move the emphasis of training from technical skill to an awareness of the information context. A lawyer who learns these additional concepts and develops his or her critical thinking and problem solving skills, becomes information literate and is therefore equipped to become a lifelong learner.

TRAINING IN A CORPORATE ENVIRONMENT

Working within a corporate culture, compared to an educational environment, brings its own special issues. These are discussed under the following five subheadings.

1) The purpose of the organization itself

The most significant difference between training in an educational setting and a corporate setting is the raison d'etre of the organization. The dialogue which can take place about learning methods, goals, and outcomes – between librarians, students, and faculty staff within an educational setting – does not flow as easily when education is not the central product of the organization. The lawyers' primary need is to meet their billing target. Attending training to enable expert research is not obviously identifiable as a pre-requisite for this, so setting aside time to improve skills is too often at the bottom of the priorities list.

2) The learning style of lawyers or other professionals

Some commentators, in discussions on "teaching smart people", surmise that professionals such as lawyers are "single-loop" learners who are so unused to failure that they are unable to admit mistakes (Argyris, 1991). Alternatively, they believe smart people are demanding to teach, but once won over by the evangelical trainer are enthusiastic converts (Hovenden, 2003). Our experience is that neither of these stereotypes are true.

The action-learning framework seems more appropriate to describe how staff at BDW learn. We see a steady increase in skill level and information awareness and we observe that lawyers are ready to reflect on their learning so as to improve their performance. Far from being unused to failure, we find clients willing to learn, but torn between competing priorities.

3) Research is not central to everyday work

Another important issue in a corporate setting is that research is not central to what some lawyers do. Although there is a need for them to be information literate, library research skills are not essential to their work. Also, junior lawyers carry out significantly more research than partners. This means our primary audience is not the business owners. The business owners may have difficulty seeing immediately the difference an information-literacy program makes to their bottom line.

4) The time and space available and the training methods used

While in an academic institution, educators are able to focus on the best way for people to learn and can justify the time and facilities to devote to that learning experience. In a corporate setting, the reality is that large chunks of time simply aren't available for blue-ribbon learning experiences. This means we need to compromise. In some cases this compromise means using 15-minute, low-tech demonstrations that reach 80 percent of the intended audience, rather than a hands-on workshop that might only reach the 10 percent who are already committed and skilled researchers.

Training facilities in large law firms are typically not flexible enough or conducive to group work and discussion. Facilities are designed for business meetings, client functions, or information-technology training for large numbers of people. Training spaces are not designed for collaborative workshops nor, necessarily by people who understand how learning takes place.

5) Assessments and a small client base

Assessment is not built in to the corporate training framework. In academic situations, students and faculty can judge the relative importance of learning by the assessment weight that has been assigned. Assessment is a measurable indicator that learning has taken place. At BDW, the library-training team rely on team debriefs, written evaluations from learners, our own subjective observances and annual focus groups. But we tend to attract a small and fairly information-aware audience to our program and, compared to a university, our entire client base is small. This means we can easily build up a close relationship with our audience. This has obvious advantages but makes gaining critical feedback difficult.

There are many differences between working in a corporate environment and working in an academic setting. Carmel had to adapt or reject some elements of learning theory in order to accommodate the real experience of providing

services in a law firm. Having a solid understanding of learning theories is a crucial first step. Librarians must be aware of the theoretical basis for their teaching activities and should understand why certain methods work and, therefore, what might be appropriate as a detour from established practice, while still achieving desirable learning outcomes.

A NEW GRADUATE'S REFLECTIONS ON LEARNING ON THE JOB

Carmel's theoretical basis allowed her to experiment with theory and practice in order to make it more applicable to a corporate setting. In contrast, Pamela was learning both theory and practice on the job.

With no theoretical androgogic framework to inform their practice, newly graduated librarians teaching information literacy have to, almost instantly, teach themselves those theories. They may feel that while they have read and understood learning principles and applied them, learning this on the job will not make up for a lack of discussion about librarians' roles as teachers during formal education. Librarians without a theoretical framework to build on will find professional development tough. While it is easy to learn the practice and pick up new ideas on dealing with difficult attendees or how to keep the class interested, the structure of a good training plan which encourages information-literacy skills and adheres to the principles of adult learning can be difficult to grasp.
Within a corporate environment, it can feel as though we are preaching to the converted. Except for graduate induction, training is not compulsory. Our lawyers know this. Their incentive for attendance is to improve skills – but only if they are aware of a skills gap. Some do not make the connection between information literacy, training, and self improvement. For a newly-graduated librarian, observing complacency on the part of their clients about their own information awareness can be frustrating. Those who are aware of a skills gap are usually also very information aware to begin with. They are already strong library users who are conscious of the services offered and the benefits to be gained. Attempts to expand the audience base can be challenging and often fruitless. There will always be those with no interest in, or time to improve, their skills.

For a new graduate with no background in teaching, the information-literacy training experience can be confronting and destabilising. By not approaching training sessions as a lecturer with all the answers, librarians are more vulnerable and exposed. Because we act as facilitators of learning, and are often not sure how a session will turn out, we relinquish an element of control. We allow discussion and demonstrate flexibility; responding to what our group may need. Teaching in this way requires librarians to be even more confident of their knowledge and abilities. For inexperienced graduates, though, the tendency may be to hold on to a more traditional training style in order to establish control and to boost their own confidence and their status as "experts". It is important for a new graduate to be fully convinced of the importance of information literacy and adult learning principles and to have these as part of his or her belief system in order to avoid these pitfalls.

SKILLS FOR THE GRADUATE LIBRARIAN

It takes more than being a "people person" to effectively teach information literacy. Teaching in this way changes how we teach; not only what we teach. So the skills needed to be a good trainer are extended when we want to be a good information-literacy trainer.

Practical skills

These are essential skills for conducting formal training sessions. Examples would include,

- strategies for motivating the class and holding the attention of class members,
- presentation skills,
- intimate knowledge of your subject,
- technological skills,
- ability to be a facilitator rather than a lecturer.

Practical skills are broad and their learning is ongoing. Many practical skills can be learnt in a formal, structured way through "train-the-trainer" type courses or information-technology instruction. However, these are by no means the only ways. Graduates should use discussions with other trainers in their organization to work on specific areas of their delivery. They should also be keen observers of other trainers and look for mentors or role models. As teachers of information literacy, they should be lifelong learners themselves. They should reflect on their

own performances to understand their strengths and weaknesses, and actively seek out ways to improve.

Soft skills

Good trainers possess excellent interpersonal skills. Interpersonal skills belong to that set of competencies we have labelled "soft skills". The new graduate should be motivated by a strong desire to help, backed up by clarity of thought and presentation. They should be confident and be able to inspire confidence in their learners. But this confidence shouldn't change their approachable and conversational style. They should be flexible and perceptive to their audiences' training needs. Also, a successful librarian-trainer should never underestimate the importance of patience and understanding.

To be attracted to a training role, these qualities should already be present in varying degrees in a fledgling trainer. But there is a danger in becoming complacent about training style or mistakenly believing soft skills cannot be enhanced. Being self aware and open to learning gives all trainers the opportunity to develop their soft skills and improve outcomes for their clients. A mentor can be of great assistance, especially if he or she has the opportunity to sit in on some sessions and provide constructive feedback. Being videotaped can also help trainers see themselves as others do. Evaluations from class participants also inform graduates of the overall impression they give. Keeping a learning journal is one way a graduate can reflect on his or her performance.

Enhancing soft skills is always ongoing. It requires some vigilance and self analysis on the part of trainers to ensure their teaching styles do not become ingrained mannerisms.

Theory

Confidence in the design and delivery of training can really only be achieved when theoretical knowledge informs it. While, of course, there is no agreement on the best single theory of teaching, and there will always be new teaching methods, there are sill fundamental principles which are important for a librarian to learn. As Peacock (1999) says "librarians require a basic understanding of the progress of cognitive growth, they also need to embrace a critical thinking paradigm of which information literacy is a subset and recognise the diversity of learning styles" (p.184). Awareness of what constitutes good teaching practice, particularly when the class is made up of adult learners, is knowledge a graduate should have before beginning a teaching role.

If teaching enables librarians to express their professional goals and if each interaction we have with our clients is a potential learning experience, surely teaching and learning theory has a place along with standard library theory and skills. Teaching, especially teaching information literacy to adult learners, is more than just a technique. There is a whole theoretical framework which supports the practice. If this framework is not taught at university, there is no opportunity for graduates to incorporate this philosophy into their concepts of the library profession and to allow it to become part of their professional ideal. While learning the theory associated with teaching information literacy can come later, the danger is that graduates develop only a superficial understanding of it and their incorporations of teaching principles may be conscious and forced rather than natural.

New graduates need to recognise that acquiring skills to become effective facilitators of learning is an ongoing process. They should never become complacent about their training skills but should recognise all sources available to them to make sure both librarian and client get the most out of the teaching interaction.

AIDS FOR WORKPLACE LEARNING

Once a theoretical base has been established, lifelong learning is essential to the development of a reflective and effective librarian-trainer. The library training team at BDW uses three methods of continuous learning.

1) Formal professional development

All of the library training team at BDW have undertaken some kind of formal professional development. We find that as our skills increase it becomes more difficult to find professional-development opportunities sufficiently specialised or challenging.

The advantage of formal professional development is that we are exposed to ways of thinking that may not accord with our in-house conventions. External courses can trigger ideas and are reference points for reflection and team

discussion. In teleconferences, discussions lead to comparisons of learning, and critical analysis of the course, teaching methods, and content.

2) Mentoring

For a newly formed team, especially one where several team members are new graduates and take on a training role as a learning experience rather than because they are already experts, the team leader must be a natural and willing mentor. Several of BDW's team members had no experience of teaching information literacy prior to joining the firm. Mentoring was a means of ensuring that they were comfortable with the evolution of their role and they were consciously building their skills. The librarians primarily use a learning journal, followed by a telephone conversation with the national training librarian, as a mentoring tool and context. The journal encourages each team member to describe an experience, analyse what assumptions were challenged, and reflect on how he or she plans to change or build on this experience. A training team member may nominate one of these experiences to discuss with the whole team.

3) Team discussion

Remarkably, for a team whose members are distributed among five cities and who have never met face to face as an official training team, the level of trust between the members began at a high level. This can be attributed to a passionate team leader, who communicated goals clearly and encouraged each team member to give his or her best. The high calibre of librarians involved in training, and the fact that they all chose to be part of the team and thus already had an interest in training, also contributed to the team's success. Each team member brought enthusiasm and commitment to the role and to information literacy, so difficulties like competition, poor communication, or the program losing its impetus did not eventuate.

Team communication is primarily via email and teleconferences, supplemented by face-to-face meetings with the national training librarian as she visits each office. Quite early in the team's formation, the members elected to discuss difficulties they have had in training situations. The positive experience of bringing up your own weaknesses and having your colleagues offer support, advice, and guidance in a non-judgmental way set the scene for future discussions. Each team member recognises the benefits of having the others to learn from.

A virtual team space was established on the library staff intranet where team members could share documentation like training plans, templates, and bouquets. This was important in keeping the training experience unified across the firm, and made sure that all members of the training team had the same reference points when discussions took place.

CONCLUSION

Teaching, particularly teaching from an information-literacy perspective, is a powerful method of expressing many ideals and principles of the library profession. It is a marketing tool, an empowering experience for librarian and client, and a way to close the distance and alter the balance of power between all-knowing gatekeepers and their clients.

Working in a corporate environment is a different proposition to working in an academic setting. The principles of information literacy are just as relevant, but diversion from parts of adult learning theory are necessary in order to adapt to the corporate world.

Library educators should seriously consider adding "teaching librarians how to teach" to the core curriculum. New graduates must have a sound theoretical base on which to build and be aware of the additional skills they will need to develop on the job. New librarians should have the capabilities and the opportunities to address their own professional development and the workplace should support this.

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BUILDING A REGIONAL SCHOOL COMMUNITY'S CAPACITY TO IDENTIFY AND ADDRESS AT-RISK ISSUES THROUGH THE USE OF A COMPUTER-MEDIATED INFORMATIONAL SYSTEM: THE SWIMS CD-ROM

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ABSTRACT

This paper outlines the development, implementation, and evaluation of a resource CD-ROM as a means of addressing a set of specific informational needs of teachers from one Queensland state school.

INTRODUCTION

Research indicates that the work of teachers in Queensland has become more "intensified" (Proudford, 1998), with teachers experiencing "Heightened expectations, broader demands, increased accountability, more 'social work' responsibilities, multiple innovations and increased amounts of administrative work" (Hargreaves, 1994, p. 136). Teachers in Queensland schools are often faced with instances where they need to help children and their families with life issues such as abuse and economic hardship, yet most do not know where to get help, or how to access support services in their school or community (Palmer, McCorkle, Durbin, & O'Neill, 2001). However, because of the "nature" of schools, schooling, and school schedules, teachers rarely have time to undertake situated professional-development activities (Moore & Barab, 2002, p. 44), and they receive little formal training in how to source (or coordinate the delivery of) health and human services in schools (Knight, 2000). Indeed, Queensland teachers are required to undertake only a four-hour training course to familiarise themselves with child protection policies and statutes, and this is generally deemed to be inadequate in addressing their informational needs regarding to "at-risk" issues in educational contexts (Teghe, Knight, & Knight, 2003).

This paper reports on the development and outcome of one approach to helping facilitate ongoing professional development and learning in what teachers themselves had identified as an area they wanted to gain more information and knowledge about: formal support systems and policies on, and resources and strategies to deal with, issues concerning young people in their school community who appear to be *at risk*. This approach, which was implemented as a discrete pilot program within the larger Social Well-being in Mackay Schools (SWIMS) program, consisted of making available, on demand, what the teachers saw as appropriate information and resources. In practical terms, this translated into the development of a CD-ROM that contained a range of relevant informational resources, which was then distributed to teachers working in one small school. This was then followed by an evaluation of the efficacy of the CD-ROM in addressing the teachers' informational needs and their individual capacities to understand and effectively deal with at-risk issues in the school.

THE CONTEXT

At risk: defining the term

The term *at risk* is most widely used to refer to children who have learning difficulties and/or behavioural "problems", although it is also sometimes used in the context of the dynamic relationships among children, families, and schools (O'Shaughnessy, Lane, Gresham, & Bebe-Frankenberger, 2003; Teghe, et al., 2003). Some of the examples of indicators of at risk described in the literature include physical abuse, sexual abuse, emotional abuse, and neglect (Palardy, 1995); short attention span, poor self-image, low socio-economic status, language impairment, cultural deprivation, and discipline problems (Henderson-Sparks, Paredes, & Gonzales, 2002); and severe behavioural and emotional disorders (Carroll, Baglioni, Houghton, & Bramston, 1999).

The Social Well-being in Mackay Schools program

The SWIMS program came into being in 2002 after initial consultations between the Mackay offices of the Department of Families (DoF) and Education Queensland (EdQld); and Central Queensland University's Centre for Social

Science Research, and Faculty of Education and Creative Arts. The program's principal aim was to develop and trial a model of service delivery (initially, within three Mackay state schools) that promoted collaboration and information sharing between the systems of support for young people presenting at risk in educational settings, and the formal state protection agency. From the outset, the participating school communities were involved in determining the direction in which the SWIMS program was to develop. Initially, a series of large focus groups, or scoping exercises, were held in each of the participating schools, and these were followed by unstructured individual interviews and participant observations in the schools.

IDENTIFYING TEACHERS' INFORMATIONAL AND LEARNING NEEDS

Teachers identified a need for relevant and easily accessible information to help them identify and address at risk issues when such issues presented themselves in the school as one of the main concerns which the SWIMS program might help address. Research also indicated that teachers sometimes found themselves in situations where they wished they could do more for students and parents, but were handicapped by a lack of rapid access to resources and appropriate information. For instance, when asked by students or parents for specific information or advice (examples of topics given included housing, parenting advice, information on health matters, and guidance), teachers generally could not help them because of a lack of appropriate knowledge, and often did not even know about resources in the local community to which they could direct the students or parents. Other examples included uncertainty of what constituted at risk, and teachers had little understanding of the procedures required by the formal (state) child-protection support system, and when they should notify the relevant agency of possible at-risk cases.

Initial attempts to address these informational needs included the development of a website which contained some relevant online resources and a discussion forum. However, this approach was limited by the speed with which the website could be viewed over dial-up modems and by the limited size and number of digital files that could be viewed online. It is also a comparatively expensive way of addressing the specific informational and learning needs of a small community of professionals. It was with these concerns that the idea of the SWIMS CD-ROM was formulated. One of the questions that occupied the researchers, however, was whether a resource CD-ROM would help address the informational and learning needs of the teachers in respect to at risk issues in their school community. Because the research focus was on how the approach might be developed, and on how well it might address the informational and learning needs of the community of teachers, it was not considered in detail how the CD-ROM might be updated after its initial delivery. However, some discussions on the subject were conducted with teachers and others, and it was generally observed that the community itself would work out strategies to do this.

THE DEVELOPMENT OF THE SWIMS CD-ROM

Justification of, and approach to, CD-ROM development

No literature on the use of multimedia technology to address educators' informational needs on at risk issues could be located. However, as the brief examples that follow indicate, there is a wealth of literature that describes a range of ways in which CD-ROMs can be used to successfully deliver course material to a range of learners. This indicates the capacity of the medium to make information available on demand to a variety of learners. For example, Ochoa (2002) describes the use of CD-ROM-based interactive technology to more effectively inform teachers of guidelines about disciplining students with disabilities. Paquin (2002) reports that those with low academic ability have positive learning outcomes when using an interactive CD-ROM. Mashinter and Kraiker (1997) present a case study of a course developed to deliver a cost-effective method of informing Canadian civil aviators of new certification regulations. Smith, Fardon, Stoll, Martin, Lines, and Forsyth (1996) outline an example of the use of an interactive CD-ROM to provide simulated emergency management experience for health workers. Messecar, Van Son, and O'Meara (2003) analysed the use of CD-ROMs in self-taught statistics for nurses. (See also, O'Reilly & Morgan, 1997; Macdonald, Mason, & Heap, 1999; Barrett & Lally, 2000; Coppieters, Parent, & Piette, 2003; Kim, Soonbok, Sunkyung, Eunyong, & Younglan , 2003; Perdan & Azapagic, 2003).

Because the researchers could not locate an appropriate model that could be adapted in the development of the SWIMS CD-ROM, the approach to make relevant information accessible to teachers had to be developed from the ground up. To begin with, the choice for using a resource CD-ROM as one of the means to address the informational needs of teachers in the SWIMS program was influenced by responses obtained as part of unstructured interviews with teachers in their workplace. Whenever asked to comment on the possible usefulness of a CD-ROM as a way to make information on at risk issues more accessible to them, teachers generally responded that they would welcome, such a resource and probably find it useful. These factors were in addition to the data obtained as part of the SWIMS program which indicted that, besides a number of specific informational needs, teachers were also highly motivated to use relevant information to better understand and address at risk issues; that is, they were motivated to learn, but within contexts and ways of their choosing.

Learning is a social construct, and results from engagement in concrete life experiences that are interpreted through shared ideas about what is feasible and desirable (McClintock, 1999). Thus it is often said that learning is a natural consequence of being alive and in touch with the world in a multitude of ways (Fischer, 2000), and that it is a constant throughout any individual's life; i.e., learning is a lifelong activity. Within formal education systems, lifelong learning is described as "all learning activity undertaken throughout life, with the aim of improving knowledge, skills and competence, within a personal, civic, social and/or employment-related perspective" (European Commission, 2003). However, lifelong learning may be differentiated from lifelong education, not only because the former challenges the standing of the latter as the foremost producer of knowledge (Edwards & Usher, 2001)[1], but also because it is, instead, likely to be more effectively based on a flexible, learner-controlled, and self-reflexive approach. Therefore, the choice made by the SWIMS researchers to use a CD-ROM was influenced by an understanding that digital multimedia enables people to gain flexible command of multiple ways to represent knowledge (McClintock, 1999).

[1] This is not a new concept; see Bown (2000) for a short history.

In other words, the CD-ROM could help provide various opportunities to access relevant information and to engage in learning activities because, for example,

- it could provide almost immediate access to specific and context-relevant information which the learner or user needs at a particular time and place;
- it could promote understanding of relevant issues and systems of support not only because the information could be obtained "just in time", but also because it could provide meaning in a practical or applied context;
- there were a number of ways in which information could be stored, presented and made searchable on the disc, which means that it could support different learning needs and styles. (For example, because of navigational facilities, the files stored on the disc could be browsed through a hierarchical structure of information representation, or more "unorganised" approaches could be used, for instance, by using keyword-based searches to access specific information as the learner or user needs it or becomes interested in it);
- There were graphical representations of knowledge that could be manipulated by the user, thus providing another way through which the disc could cater for different learning needs and styles. (For example, a teacher could build their own types of resources by manipulating the text and graphics available on the disc and then printing them, or by using other digital representations, such as PowerPoint slide shows).

Thus, when coupled with the understanding that learning can benefit from a desire to master a particular area of knowledge (Jona, 2000), which the teachers have indicated with respect to at risk issues, the use of a CD-ROM became even more feasible in the researchers' approach to help provide a meaningful and context-relevant learning opportunity.

However, the technology in itself does not cause learning or knowledge transmission (Brennan, McFadden, & Law, 2001) – people must also have the capacity to use the technology associated with the CD-ROM. Also, information is not a scarce resource, and so the indiscriminate dumping of a large amount of it on a CD-ROM may confuse users, and lead to "a

poverty of attention" (Fischer, 2000, p. 267). Therefore, one of the main technical aims when developing the CD-ROM was to enable ease of access to the information on the disk in the most efficient and effective way for the intended users (i.e., teachers). This meant using basic multimedia design principles that also enabled those with limited computer skills to use the CD-ROM (Collis & Moonen, 2001). Facilitating user control, which refers to "…the freedom a user or a program has to take command of selection and sequencing of content control, display control and conscious cognition control" (Leung, 2003, p. 10), was also considered important. Hence, the researchers wanted to produce a CD-ROM that would not only contain appropriate resources and information, but one that would also be easy to navigate, would allow searches by keywords, and which facilitated the easy and straightforward printing of resources.

CD-ROM development procedure

The engagement which takes place between the learner and the content is a significant factor when considering technology-based learning (Sims, 1998). Therefore, an emphasis on usability, as described above, meant that special care had to be taken in designing the navigational, searching, and printing functions of the SWIMS CD-ROM. However, because none of the researchers had other than very basic technical skills in multimedia development or training in the use of more complex information and communication technology (ICT), and because there was little additional funding available to them in the SWIMS program, the package of computer software to be used in the development of the CD-ROM needed to be accessible to them without the need for extensive training or additional expense. Thus, the computer software packages used were, for the most part, available as freeware or shareware, and included simple Hyper Text MarkUp Language and an e-book development program. We will now briefly describe the process undertaken in developing the disk.

It is usual to place information on a CD-ROM in the form of a complete and self-contained website. This enables users to use the Web page browser program available on their personal computer to open and view the information on the disk. With the skills available to them, the researchers first used an electronic scanner to convert the large amount of printed information and resources previously collected by the SWIMS social worker into a digital format. A new website was then developed that contained this information, sorted by categories, in separate browser "pages". Other relevant resources were also loaded onto the site, such as the digital copies of the Queensland Child Protection Act, Education Queensland's policies and procedures manual, links to useful online resources, contact lists, and so on. To enable ease of navigation to and from pages on the website, a frameset was used to allow viewing of pages in one frame, while a simple navigation menu was permanently visible in another frame. Through the use of uncomplicated Java scripting freely available on the Internet, printing from the disk was made available via hypertext links.

Having completed the website, the researchers then used an inexpensive program (*Activ E-book Compiler* v4.22) to convert the material into an e-book that not only retained the navigational facilities and characteristics of a Web browser, but also added an easy-to-use search facility. This added to the functionality of the CD-ROM because users could generate meaningful search results from the resources on the disk, which were then made accessible through individual navigation links. Finally, an "autostart" file was included in the root directory of the CD-ROM that enabled it to automatically open shortly after being inserted into the user's personal computer, thus eliminating the need for giving the personal computer more complex commands in order to access the disk.

Copies of the CD-ROM were then distributed to the principals in the schools participating in the SWIMS program, and to a small number of other school staff, for initial testing. Following a few minor modifications made as a result of this initial trial, the disk was duplicated through a professional CD-ROM replication and printing agency before being distributed to one of the schools as part of a pilot scheme to assess the CD-ROMs efficacy in addressing the teachers' identified informational and learning needs. The last stage consisted of an evaluation of this efficacy.

THE EVALUATION OF THE SWIMS CD-ROM

Approach

Through the evaluation of the usefulness of the SWIMS CD-ROM, the researchers mainly wanted to assess two things:

- the extent to which teachers thought the CD-ROM could address their informational needs on at risk issues,
- the extent to which teachers thought the CD-ROM could help build their individual capacities to deal with at risk issues in the school.

Although there were a few short interviews conducted with some of the school's senior administrative staff, the main method employed to collect data was via a short questionnaire that was distributed to the seventeen teachers who had received the SWIMS CD-ROM. From these, ten responses were received. The questionnaire consisted of two types of statement or questions, categorized separately under the headings "Functionality" (five statements), and "Relevance of resources" (nine statements). Examples in the first set included "The disk started when I inserted it in the drive" and "I was able to print material off the disk". Examples of statements in the second section included: "Some of the information on the disk is relevant to my work" and "The disk raised my awareness of services available in Mackay". The respondents could choose from a variety of responses provided for each of the statements, from the "yes/no" dichotomy, to "perhaps / use occasionally / don't know", and so on, depending on the statement. One of the statements in the second section ("The proportion of information relevant to me in my work is close to…") was provided with percentage figures as the response choices (i.e., 0%, 25%, 75%, 100% and "don't know").

Results

Our results refer only to the context (that is, one school) in which the pilot program was implemented. Therefore, we do not suggest that the results presented can be generalized to imply that the approach to developing and implementing a resource CD-ROM will have similar effects when used in other settings. Furthermore, the method employed for our evaluation was not intended to uncover statistically significant causal links, but, rather, to describe a particular set of opinions from a discrete group of users of the SWIMS resource CD-ROM.

In respect to the ease of use of the CD-ROM ("Functionality"), all respondents thought that the quality of the CD-ROM was good, and that they could easily navigate through its content and find resources and information items. Some of the results obtained from the second section of the evaluation questionnaire ("Relevance of resources") are summarized in Table 1.

Nine respondents (one unsure) found the information included was relevant to their work.
Nine respondents (one unsure) could think of instances where they could make use of the information and resources included on the disk.
Nine respondents (one unsure) said they could think of instances where the use of the CD-ROM might save them time.
Ten respondents thought that the disk raised their awareness of services available in their locality (Mackay).
Nine respondents (one unsure) thought that the disk was a good idea and that it would serve to build the capacity of users to deal with at risk issues.
Ten respondents said that at least some proportion of the information on the disk was relevant to them.

Table 1. Selected response summaries from the "Relevance of resources" section of the SWIMS CD-ROM evaluation questionnaire.

In addition to their responses to the questionnaire, some teachers also provided written comments; for example: "An excellent 'hands-on' resource to find health services in Mackay" … "I'm pleased I have a copy to refer to … and it has made me more aware of services available" … "Good to have this sort of information on hand when required".

To summarise, the CD-ROM was found by its users to have been a useful informational resource that had the potential to address most of

their informational needs. The disk was also found by its users to have the potential to build their capacities to deal with at risk issues in the school by, for example, making them aware of local services and by providing them with links to further relevant resources.

CONCLUSION

The approach to addressing the identified informational and learning needs of a discrete group of professionals outlined here may be viewed as an incremental and practical one which went some way in accomplishing its goal. Its success was due to the employment of a participatory approach that involved those whose needs it was to address, and also to an understanding that lifelong learning is facilitated effectively when learners have control of their own learning contexts, and when there is flexibility in the ways relevant information is disseminated to learners. This approach thus provides an example of how useful action often consists of small, concrete repetitions or innovations, not grand departures (McClintock, 1999).

Although it is clear from our study that the approach was effective in identifying and addressing a particular set of learning and informational needs for a specific professional community, there also remains a need for this approach to be tested within other settings and contexts before its efficacy as a model for addressing informational needs can be further generalised. The development of a resource CD-ROM may, at first glance, appear to be a common-sense approach to addressing these types of needs, but such an approach is not likely to be as successful if it neglects to take into account the context for which the CD-ROM was developed in the first place. Hence, more research is required to understand how variances in informational and learning needs, social issues to be addressed, and location and types of communities for which a resource CD-ROM is developed, might affect the approach exemplified by the SWIMS CD-ROM pilot.

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YOUNGER AND OLDER IT USERS: ARE THERE ANY DIFFERENCES IN LEARNING?

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ABSTRACT

Teachers today have a complex array of educational media that they can use to deliver educational material to students. Many institutions have sought to use the internet to deliver learning materials. This research examines university undergraduates' perceptions of the usefulness of a web-based discussion list as a learning tool.

INTRODUCTION

With an increasing emphasis being placed by universities on using technology to enhance students' learning, many universities are using web-based approaches to teaching and learning. It has been argued (Anderson, 1996) that online learning potentially provides meaningful learning activities. O'Malley (1999) argues that often new educational technologies, such as web-based learning, are implemented without any assessment of impact on students. Using web-based technologies is of great interest to distance education institutions as it not only has the potential to improve the delivery of resources and enhance students' learning – it can potentially substantially reduce the cost of distance delivery.

According to Slay (1997) problems have emerged in the development of web-based delivery packages and tools because academics have little experience in designing and using this medium of material delivery. These developmental problems can be exacerbated further because, as George (1996) argues, the form of delivery can produce particular types of learning behaviours so that web-based delivery is not a neutral medium and as such it is not suitable for all learners. In particular, this paper examines the perceptions of students from different age cohorts. O'Malley (1999) argues in his model of student perception that prior educational conditions, perceived characteristics of distance and online learning, and characteristics of the student influence the perceived effectiveness of distance learning and online learning. One of the student characteristics in need of further research is age. Not all university students enrol in university straight from secondary school. Increasingly, mature adults are returning to university after a significant time away from study. This study uses two of these constructs – perceived characteristics of online learning, and characteristics of the student – to investigate students' perceptions of online learning. Mature-age students merit consideration because there is an increasing emphasis on these students gaining academic qualifications after several years in the workforce. Some institutions have been established to deal primarily with late teens and early twenty-year olds and this means they may need to reconsider how they deliver material to an aging cohort.

This paper analyses students' perceptions and compares the perceptions by age distribution.

As Ataya, Brown, Gorham, and Barker (2002) indicate, many universities are offering more Web Course Tools (or WebCT) to simplify course management by providing a centralised location for material and information. They also argue that it simplifies the management of online tests and allows for greater instructor-student and student-student interaction. What remains unclear is whether this increased interaction occurs across all student cohorts and whether this type of interaction via WebCT, such as discussions lists, is perceived by students of different genders and ages to be equally beneficial. MacGregor (2001) cited several authors (Merisotis, 1999; and Hanson, 1997) when emphasising the strong need for research into distance-education innovations and the examination of attributes, both psychological and social, of distance-education learners. This work reports the findings of a study conducted with first-year students in an accounting program in a regional Australian university that has extensive experience in distance education.

FLEXIBLE AND DISTANCE DELIVERY

In many countries, universities have typically used the lecture method to deliver material, and have supported this with workshops and tutorial activities. In Australia, because of the enormous distances and relatively large population, education providers at all levels have used alternative methods such as posting out printed materials and tapes; and at primary and secondary school level, they still use radio to conduct a "school of the air". Volery and Lord (2000) define distance education as any approach to delivery that replaces the same-time, same-place face-to-face environment of a classroom. So distance education is nothing new in Australia, and Central Queensland University (CQU) is recognised as expert in this area. Central Queensland University, with its headquarters in Rockhampton, Queensland, has been through a metamorphosis similar to that of many tertiary institutions in Australia.

Distance education materials have been important to CQU for more than 30 years, initially by servicing a rural regional community, but since then by developing a reputation as being one of Australia's most progressive and innovative universities. CQU is what Roberts and Kelly (1999) term "a third generation institution" as it has international and overseas multi-campus facilities. This has meant that the way students are taught has had to be revised to account for methods other than face-to-face teaching. The Faculty of Business and Law at CQU has been at the forefront in student growth which has meant that staff have been willing to experiment with varying forms of online assessment that meets the university's quality standards but which also assists in coping with the huge numbers of enrolled students. The purpose of this study was to ascertain the perceptions of first-year students regarding the use of WebCT as a delivery medium.

CQU is certainly not unique in terms of flexible delivery, as universities across the world are taking on many forms of this strategy (Brown, 1997 as cited in Roberts & Kelly, 1999; Pritchard, 1995 as cited in Roberts & Kelly, 1999). Distance education is no longer supplied by only a few providers. This is because universities have had to succumb to the pressures of multi-campuses and new delivery modes encompassing new technologies (Roberts & Kelly, 1999). With the introduction of web-based technologies, it is possible for all students in a course to access the same assessment, irrespective of their geographic location. According to Roberts and Kelly (1999), WebCT makes learning available to all students, including mature-age students and those who are unable to attend the traditional campus, and it can contribute to lifelong learning. In developing this course there was also an expectation that WebCT would provide students with a positive experience (Ataya et al., 2002; Deepwell & Syson, 1999). Programs such as WebCT have been found to lead to collaborative learning among students (enhancing the learning process) (Nachmias, Mioduser, Oren, & Ram, 2000). Hara and Kling (2000) have demonstrated in some cases, students experience distress with communication breakdowns and technical difficulties in non-traditional delivery modes. In a study by Morss (1999), over the period 1997 to 1999, it was shown that the use of WebCT did not place an unnecessary burden on students; however, the study by Morss did not differentiate between younger and mature learners.

STUDENTS' PERCEPTIONS

The student population 30 years ago was generally, made up of people who were, single, full time, and 18-23 years of age. Whereas today, as we continue in the Technological Age, the undergraduate population now includes older, married, employed, and non-residential students (O'Malley, 1999). The introduction of the Internet and email has presented an opportunity to radically innovate in the ways universities deliver both material and courses in an attempt to bridge the time-place gap. As Reisman, Dear, and Edge (2001) point out, the Internet and the World Wide Web lead to multiple strategies for implementing distance learning. However, as they also argue many of these strategies have resulted in an ad hoc approach to the development process. At CQU the use of web-based learning tools such as WebCT is building on a lengthy experience in distance education. Staff at CQU have gradually developed a suite of techniques to deliver distance education. With the introduction of WebCT, staff were not seeking to simply replace traditional distance delivery methods. Rather, they were seeking ways to make the learning experience of students more meaningful.

Volery and Lord (2000) argue there are two main advantages to using online delivery compared to other traditional technologies. Firstly, online learning creates collaborative tools that allow students to share their work, ideas, and frustrations with other students. In the case of geographically or physically isolated students, online technologies break down the barriers to isolation and allow students in chat rooms and discussions lists to interact in real time. The second major advantage according to Volery and Lord (2000) is that tools such as self-administered quizzes permit students to progress at their own pace through self-assessment exercises and reduce the stress and time constraints placed on students. The study reported in this paper focuses on gender and age perceptions of WebCT, in a course using both online tests and an online discussion list that were available to both distance and non-distance education students.

According to MacGregor (2001), studies of students' attitudes towards early forms of distance education indicated that students typically preferred the traditional classroom. She also pointed out that research by Savard, Mitchell, Abrami, and Corso (1995) on computer mediated communication in distance learning showed there were rarely any significant differences between the attitude towards learning and achievement of students in distance and traditional settings. Mariani (2001) pointed out that new technologies – including discussion boards (or lists) – could only supplement traditional teaching. The research reported here however, seeks to clarify the perceptions of students using WebCT. The research asked students, both distance and traditional, their perceptions of online tests and an online discussion list. This research is based on O'Malley's (1999) student perception model (see figure 1).

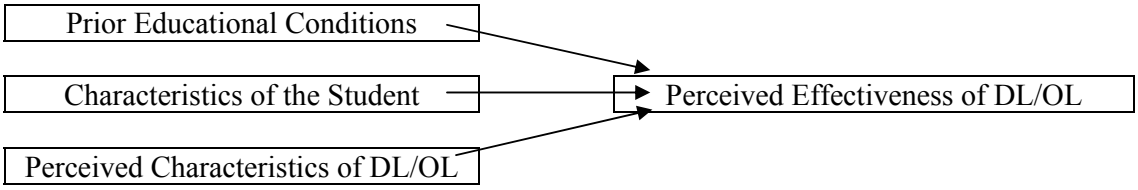

Figure 1. Students' perceptions of the effectiveness of delivery and learning outcomes.

O'Malley based his model on Rogers' 1995 model of the diffusion of innovation (Rogers as cited in O'Malley, 1999). This research is seeking to establish a relationship between perceived characteristics of distance learning (DL) and online learning (OL), and the characteristics of the student to investigate the perceived effectiveness of online learning. The questionnaire did not specifically seek confirmation of students' educational background because it was assumed that, since they had all gained entry into university, the majority of students would have the same educational backgrounds and experience. This study gathered data on student characteristics such as age (in bands), gender, degree program, and enrolment status (full time, part time, external, internal). Students' perceptions were elicited through their comments on the questionnaire, and students were asked about where they accessed WebCT and whether they would have used WebCT if it was not linked to their assessment.

Slay (1997) discussed the role of the Internet in creating a high-quality learning environment which encouraged effective learning. Students in this study were asked to use both online tests and a discussion list as learning tools. The majority of the contributions to the discussion list added to the body of knowledge within the course, with many discussions exploring current issues relating to the topics covered. It was felt that the assessment would enhance the experience of individual students who were isolated and undertaking subjects by distance education, as well as the internal students. It was intended to give the participants the feeling of being part of a larger cohort. As the course is part of the students' first term at the university, it was envisaged that access to a web-based learning tool, such as WebCT would encourage the students to "have a go" at connecting to some form of technology. Many of the students – internal and external – were mature aged, and may have been out of the workforce for some time, so this was also an attempt to encourage them to come to terms with the use of information technology.

Hatch (2001) argues that little literature is available that reflects students' perceptions in this area. Much of the increase in online learning is in response to the rapid growth in student numbers, the need to reduce costs, and more requirements for flexible teaching and learning. It has been clearly shown that any delivery method needs to engage students in the learning. To be engaged, students need to be consulted; that is, asked questions about whether they enjoyed the experience, encountered problems, and were supported, and whether the materials and assessments were appropriate (Hatch, 2001).

METHODOLOGY

All students (total population was 951, with 237 of the students being enrolled in distance mode) in a first-year accounting course, *Using Accounting for Decision Making*, were given the opportunity to complete a self-administered questionnaire. Distance students completed an online questionnaire, and traditional mode students completed a paper-based questionnaire in class. All students were required to complete three online tests (each test was worth 10 percent, so the total value was 30 percent). The external (or distance) students were required, as part of their assessment, to make at least three contributions to a discussion list that had been set up on WebCT. They could receive a maximum of 10 percent towards their final score for the course. The internal students received a maximum of 10 percent for their contributions in class. The course was a first-term, first-year subject that is a compulsory unit for all Bachelor of Business students, irrespective of the major they have chosen. Internal students on all CQU campuses were also encouraged to access the WebCT discussion list, although there were no marks allocated for this to the internal students. The total number of respondents to the survey was 342 students. Of this number, 189 were females and 146 were males (7 did not indicate gender). Female students tended to be more willing to respond to open-ended questions than males.

	1,2 (17-26) (n=257)			3,4 (27-36) (n=60)			5 (37 +) (n=18)		
	1 (Home)	2 (Work)	3 (Other)	1 (Home)	2 (Work)	3 (Other)	1 (Home)	2 (Work)	3 (Other)
Internal	200	16	41	22	5	5	8	2	2
1,2 (n=255)	66.45%	5.32%	13.62%	7.31%	1.66%	1.66%	2.66%	0.66%	0.66%
External	29	6	2	30	12	1	8	1	3
3,4 (n=73)	31.52%	6.52%	2.17%	32.61%	13.04%	1.09%	8.70%	1.09%	3.26%
Int/Ext	4	0	2	1	0	0	0	0	0
5 (n=6)	57.14%	0.00%	28.57%	14.29%	0.00%	0.00%	0.00%	0.00%	0.00%

Table 1. Cross tabulation of age, enrolment and computer access.

	1 - Male (n=146)		2 - Female (n=189)	
	1 (Yes)	2 (No)	1 (Yes)	2 (No)
17-26	41	72	58	80
(n=257)	28.08%	49.32%	30.69%	42.33%
27-36	18	8	22	12
(n=60)	12.33%	5.48%	11.64%	6.35%
37+	5	0	10	3
(n=18)	3.42%	0.00%	5.29%	1.59%

Table 2. Accessing discussion lists – a comparison of gender and age.

	(17-26) (n=257)			(27-36) (n=60)			(37 +) (n=18)		
	1 (Yes)	2 (No)	3 (Prob Not)	1 (Yes)	2 (No)	3 (Prob Not)	1 (Yes)	2 (No)	3 (Prob Not)
Male	38	29	39	15	6	5	3	0	2
(n=146)	35.85%	27.36%	36.79%	57.69%	23.08%	19.23%	60.00%	0.00%	40.00%
Female	64	23	49	21	4	8	10	2	1
(n=189)	47.06%	16.91%	36.03%	63.64%	12.12%	24.24%	76.92%	15.38%	7.69%

Table 3. Percentages within groups accessing discussion list if no marks are awarded.

	(17-26) (n=257)			(27-36) (n=60)			(37 +) (n=18)		
	1 (Yes)	2 (No)	3 (Prob Not)	1 (Yes)	2 (No)	3 (Prob Not)	1 (Yes)	2 (No)	3 (Prob Not)
Male	38	29	39	15	6	5	3	0	2
(n=146)	35.85%	27.36%	36.79%	57.69%	23.08%	19.23%	60.00%	0.00%	40.00%
Female	64	23	49	21	4	8	10	2	1
(n=189)	47.06%	16.91%	36.03%	63.64%	12.12%	24.24%	76.92%	15.38%	7.69%

Table 4. Comparison by gender and age if no marks are awarded for accessing list.

RESULTS

The students responding to this survey were enrolled in differing programs (e.g., Accounting, Management, Marketing) and were enrolled in both internal and external distance modes. As can be seen from table 1, there is no major differences in where students accessed computers; with more than two thirds of internals and externals accessing from home, regardless of age.

Students were also asked if they would have contributed to the discussion list if there were no marks attributed to their access. Their responses are summarised in table 2. While there are no significant differences based on gender, more students in the 27+ age grouping were likely to access discussion lists than the younger student cohort. Not surprising, when considering enrolment status, age, and gender, external students were more likely to access discussion list than internal students, and female external students were more likely to access discussion lists than male external students (see table 2). Most students were full-time internal students (and these students were not required to use the web-based material but could access it if they wished and were able to use the discussion list in exactly the same way as external students). This can be partly explained because it was a requirement that external students use the WebCT material.

It could be argued that younger students have more affinity with using the Internet and are used to using list servers and chat rooms as discussion tools. This is supported by a study on The Current State of Play: Australia and the Information Economy (NOIE, 2000), which reported that the most common users of the Internet were 18-24 year olds and, in relative terms, Australia has the third highest growth of web domain names at 385, behind Japan and Canada; and in 2000 Australia had approximately 78 secure servers per million people – second behind the USA with 120 per million people. However, in this sample, students within age categories are motivated by activities that are seen to improve their grades rather than improve their learning experiences. Older students (27+ years) are significantly more likely to access lists if no marks are awarded, than younger students (see table 3).

In table 4 it is evident that there are no significant differences based on enrolment or age. However, there is a significant difference – again – in gender, as females are more likely to access discussion lists than males – particularly external female students.

n=60	Positive	Negative	Neutral
Age 17-26 n=58	26 43.3%	15 25%	17 28.3%
Age 27 + n=2	1 1.7%	1 1.7%	0

Table 5. Internal students' perceptions of discussion lists by age.

n=68	Positive	Negative	Neutral
Age 17-26 n=33	14 21%	12 18%	7 10%
Age 27 + n=35	20 29%	8 12%	7 10%

Table 6. External students' perceptions of discussion list by age.

Students were asked "Did using WebCT contribute positively or negatively to your learning in *Using Accounting for Decision Making*?" Positive comments were supportive of WebCT activities whereas negative comments were those that did not find WebCT a useful learning experience. The difference amongst internally and externally enrolled students is summarised in tables 5 and 6.

As can be seen from the tables there are no major differences, although mature-aged external students were more likely to have a positive perception of the WebCT experience than the younger students. Even though internal students did not have to use the discussion list, many mature-age, internal students used the discussion list as a learning tool. Internal student comments such as "…catered for one subject and peers had an opportunity to help each other" and "good to see what others were thinking and feeling about the course", were received.

CONCLUSION

Most mature-age (27 years-old or more) external students have responded in a more positive way to this course, with some of their comments being,

> …once you contributed and saw the discussion it stimulated, it made it easier to contribute next time (mature aged external male).
> ..it's a good communication channel for both internal and external students to discuss any outstanding issue (mature aged external female).

Probably one of the best responses was from a mature aged female who commented that "Everyone's contribution helped me feel like part of a group and so therefore encouraged me to feel more confident with further contributions."

Other characteristics such as mode of study, enrolment pattern, and degree program and major appear to have no influence on student response. Of course, not all students felt positively about the experience so it is therefore important that we, as teachers, seek new and different ways to deliver learning materials and equally important that we assess and evaluate the effectiveness of different delivery modes and of students perceptions of the usefulness of differing modes. It is apparent from this study that age did play a role in the cohort of students involved in this study and that factor must be taken into account in our course design. In designing course materials, instructors and

course designers need to offer alternatives that meet the needs of all students rather than expect students to deal with and accept all learning materials. Further research in this area will examine other factors such as students' pre-university education experiences to determine if they have a significant impact on students' use of learning technologies at university.

It is far too simplistic to assume that mature learners will not have the information-technology skills needed to benefit from web-based learning . Age is not a barrier to learning generally, so why should it be a barrier to learning using web-based materials? If we seek to ensure that all people in our community can have access to lifelong learning, then as teachers and course developers we must seek to gain an understanding of the benefits and limitations of the modes and technologies we use. Making available a range of learning opportunities allows adult learners to select the mode that best suits their capabilities. This study has compared the students in two age groups: those less than 27 years old and those 27 years or more. While this is useful for this analysis, further research needs to be conducted to ascertain more about mature-age students at different ages. Clearly, learning materials need to be developed that take into account a variety of factors including, age, gender, and background.

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POST-LITERACY, A SCHOOL, A WEBSITE, AND LIFELONG LEARNING IN A REGIONAL CONTEXT

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ABSTRACT

This paper explores the potential impact that visual literacy or post-literacy in the postmodern age has on traditional educational structures. It follows a collaboration between an academic and a Central Queensland regional school in a learning journey that initially culminated in a website but then became a lifelong-learning experience for all participants.

INTRODUCTION

According to Lankshear, Snyder and Green (2000), "New technologies have radically altered our everyday modes of communication. They are becoming so fundamental to our society that most areas of social practice in day-to-day life are affected by the so called 'information revolution'" (p. 1). Combine this explosion of information with the advent of postmodernism, and educators at all levels of schooling are, increasingly, becoming expected to engage with more complex and uncertain learning that also incorporates lifelong-learning discourses (Drucker,1995).

This paper embraces the concept of planning for uncertainty by outlining how one regional school considered current educational discourses around planning for uncertainty and engaged in a collaborative partnership with an academic from a regional university in order to engage Year Seven students with futures-oriented learning. The next section of this paper maps out the global world in which the participants operate in terms of a postmodern world by engaging with visual media in terms of post-literacy generally, and the development of a website, specifically.

POSTMODERNISM AND POST-LITERACY

According to Klages (2003) "Postmodernism is a complicated term, or set of ideas, one that has only emerged as an area of academic study since the mid-1980s" (p. 1) The era known as postmodernism has several characteristics. First, as Simons and Billig (1994) stated, "every claim to truth [in a postmodern age] is immediately placed under suspicion" (p. 1), which raises key questions concerning the multiple ways in which we as a society construct understandings of media in an attempt to become literate in a visual sense. The need to pursue postmodern versions of visual literacy is reinforced when we look at the notion that today's generations are becoming more and more immersed in media (Giroux, 1997; Luke, 1999).

What I argue in this paper is that, specifically, the "postmodern" context (however it is understood) is undeniably complex. Children are also undeniably complex. Therefore, neither children nor teachers will be served by the construction of "simple" frameworks for responding to this situation. I argue that this paper can be seen as the starting point for the development of a new, "meaningful" and sustainable "understanding" of visual literacy such as post-literacy that must include an engagement with the "big" ideas and with the difficult concepts discussed throughout this paper (Walker-Gibbs, 2003).

The term post-literacy, is a term I have coined as a more appropriate term than visual literacy to describe the "visual" skills I believe are needed by contemporary children, because it encompasses and extends beyond the multiple definitions of visual literacy explored previously in the educational field. Established definitions of visual literacy (Walker-Gibbs, 2001) remain centred on a print-literacy understanding of visual media where specific examples are taken as texts that can be "read" and analysed as static images linked to skills associated with semiotics and comprehension. The concept of post-literacy is one that I am developing to encompass the visual and the virtual experience that is not necessarily linked to comprehension but which, in fact, problematises the very notion of comprehension itself.

Post-literacy suggests the way in which we establish how we are literate has changed because the understanding we have of the visual and the virtual is fleeting, ever-changing, and evolving, and that there is no time in which we can be literate in the sense that literacy relates to the future; but people may be able to develop a kind of literacy that engages them in an analysis of their present states and prepares them for the differences they may experience in their futures. The challenge becomes how we can "do" this in a "real" classroom.

I would argue that if we as educators are to fully embrace a post-literate world, the role of the teacher and researcher will change. For example, a result of the assertion that the teacher is no longer holder of all knowledge, is that they are less able to help children come to diverse understandings of these ideas. If we accept that the world has changed and the way in which education is viewed has also changed, the concept of lifelong learning may be vital in helping to build bridges between the more modern structures of the traditional classroom and the post-literate world that helps us to engage with various realities such as web-based environments. The next section of the paper outlines a specific example of how the participants in the project tried to take initial steps towards developing a post-literate understanding of media

A RURAL SCHOOL, A RURAL ACADEMIC, AND A LIFELONG LEARNING EXPERIENCE

As Morris (2000) stated, "Success in school, the workplace and everyday life now depends on knowing how to access and use information. Knowledge workers have been second only to management workers as the fastest growing occupation since the early 1970s" (p. 29). There is also increasing rhetoric in the research that links these global changes to the concepts of work and lifelong learning. As the Organization for Economic Cooperation and Development (OECD) (2000) posit, "Linear careers are disappearing and by 2010 many of today's 18-year-olds will be doing a job that has not yet been invented. Moreover, they will be using skills that do not currently exist" (p. 19).

The changing context of work has directly impacted on the three main divisions that "govern" the participants' work. Education Queensland has developed a *Rural and remote education framework for action 2003-2005* in which it is argued: "School environments in rural and remote areas are often characterised by … creative partnerships with local community organisations, businesses and industries for building innovative learning environments and experiences for students" (Education Queensland, 2003, p. 10).

Higher-education institutions are also undergoing their own changes, with the role of the academic being revised. The faculty in which I am employed introduced a new undergraduate teaching program called the Bachelor of Learning Management (BLM) in 2000 that "focuses on the collaboration between school and university staff, in the design and implementation of the degree" (Thompson, Smith & Mienczakowski, 2002, p. 1). At the same time that this new degree was being developed, Education Queensland (n.d.).was also encouraging teachers to engage with the concept of productive pedagogies. "Productive pedagogies are effective pedagogy, incorporating an array of teaching strategies that support classroom environments, and recognition of difference, and are implemented across all key learning and subject areas" (p. 1). So, we have a local context that not only has to respond to more global changes to education, but also education directives to make education more relevant in multiple contexts – including the regional and the remote.

As a consequence of a previous research partnership (see Cooling, Graham, Moore and Walker-Gibbs, 2003) I was introduced to "Polly" early in 2003. Polly is an innovative Year-Seven teacher who has embraced Education Queensland's *Productive Pedagogies* and was looking for a project that would help her Year-Seven students engage with new literacies and new technologies whilst simultaneously producing something productive for not only the school but the rural community in which the school was situated. The decision had been made in consultation with the students that establishing a website for the school that also highlighted the region in which the children believed would be one way of achieving these goals. The next section of the paper considers how lifelong-learning discourses helped to frame this project.

LIFELONG LEARNING

A key component of this project was a commitment to lifelong learning. As Morris (2000) argues "… lifelong learning is needed to ensure all individuals have the opportunity to participate in society to the fullest extent …. Without an increased emphasis on lifelong learning, the earnings gap between levels of educational attainment may continue to widen. (p. 29)

As an academic who is committed to a post-literacy approach to media information and communication technologies (ICTs), it was important for me to ensure that we were able to embrace multiplicities of meaning and outcomes. There is no suggestion that engaging in postmodern research and post-literacy concepts is something that is "easy" and able to be fully embraced within formal educational settings. As the journey unfolded it became clear that restrictions placed on us from the formal educational setting meant that, at times, we had to embrace predetermined outcomes. For example, a website that was public and not just part of an assignment meant that we had to adhere to school and Education Queensland policy, copyright laws and privacy issues as well as school term deadlines. The emphasis in this project was on not only the teacher providing the students with opportunities, but also the students themselves taking responsibility for their own understandings within these contexts. There can no longer be an understanding of children as having no power within the visual world and that teachers are there to protect them and guide them to come to understand "the error of their ways" in terms of dealing with their understandings.

A proposed way forward for helping today's educators become better equipped for dealing with the complexities of the postmodern world is by engaging with the concept of moving "Towards transformative classrooms", which I have adapted from Rowan (2001) into the following, develop a vision; plan ahead; make a start; practice [post-literacy] every day; have some fun (pp. 94-102). I will use these five "steps" to provide an overview of how the project came to be organized.

Develop a vision

I had already begun to develop a vision around the concept of post-literacy. For example, for me, the post-literacy classroom is multifaceted and multidimensional. The educator is one who embraces change and understands that her or his understandings will change and be ephemeral and fleeting. The post-literate student does not seek the grand meta-narrative that uncovers a view of the world. We all celebrate the complexity and diversity of the postmodern world in which students are saturated and subsumed by visual imagery; and they recognise that each journey towards understanding the visual world is fraught with danger, uncertainty with no final destination.

The first step was to bring together all the participants to discuss what this project might look like. The participants came with a variety of experiences. My contribution included the role of "expert" web designer (one role I fill at the Educational institution where I am currently employed). We knew that we all needed to be committed to the global and local contexts of learning and knowledge, and to embrace the multiplicities of the participants. Besides the classroom teacher, and myself in the role of academic and web manager, the students, the student teacher, and the technical-support liaison and multi-media producer from the university, were all involved and brought multiple perspectives and subjectivities with them that enhanced and complicated the project at hand. The first step in developing the vision was to brainstorm and collate information using concept and mind mapping a variety of options for the project. This was not only undertaken at the beginning of the project but continuously throughout the term in which the website was developed. The "how to" of enacting this vision is considered in the next subsection on planning ahead.

Plan ahead

Post-literacy as outlined previously will not just suddenly appear in classrooms or indeed the wider community, there is a need to plan ahead (Rowan, 2001). Initial planning involved discussions with a university multimedia producer to organize an excursion where the children were able to interact with and question a variety of people whose professions involved website construction, design, and programming. After this visit the students negotiated and were assigned key roles to help them with their website construction. These were; 1. video/audio recorders; 2. graphic designers; 3. course developers; 4. producers; 5. field crew. A

questionnaire based on a brainstorming and mind mapping session around what the schools' website should or could look like, was devised by the students to distribute to the community. The producers were responsible for distributing and collating this information.

At the core of the planning ahead was the need to ensure that multiple exits and entries into how the website could be constructed were considered. The next step towards undertaking a post-literacy framework is to devise activities and/or strategies to assist teachers and students to begin to embrace and celebrate a post-literate world. How we began to do this is outlined further in the next subsection.

Make a start

According to Rowan (2001), "Students need to learn new ways of thinking, responding and talking in relation to difference. It is often up to teachers to model new language" (p. 96). I not only had to help the teacher with the language involved in website construction but also help students with digital cameras; uploading and downloading of graphics to the website; framing pictures; hypertext; non-liner text; discussions and explanations of progress with the school principal; interviews with community and school members; trailing of designs; negotiated meanings; testing theories; different levels being catered for; and responsibilities given. All participants negotiated the different languages involved in the construction of the website. Just as importantly, in the beginning, some of the language was modelled in terms of listening to, and encouraging, a variety of perspectives. This became a model that was used by the students during the weekly debrief and timetable meetings.

Practise [post-literacy] every day

This step is fairly self-evident, in that it is important to engage with notions of post-literacy every day. For me, this is also linked to the idea that it is important within a postmodern framework to be continually self-reflexive and constantly attempting to make explicit my subjectivities that I may take to be natural and normal. It is also about continually trying to uncover ways in which post-literacy ideas may influence my own as well as others' teaching practice. The practice of post-literacy changes its parameters and hence how it is re-conceptualised. This was negotiated every week with all participants either face-to-face, or by email or phone.

An important lesson the adult participants had to learn was to know when to take a large step away from what was happening and let the students take more responsibility for the development of the website. This was difficult when there were deadlines to meet and disagreements amongst the different groups. It was also a test of the shift in the changing role of the teacher mentioned earlier in this paper. By already having established roles and responsibilities, and having modelled appropriate languages, this became easier. If there was a disagreement about the design of an image for example, the designers discussed the design principles with various members of the school and regional communities behind the image and the producers reminded the group what the outcomes of the questionnaire were.

The adults in this situation had to embrace what we knew theoretically: that power relations were changing; we were facilitators but, more importantly, we were also transformed as learners on the journey with the students. We had to be willing to make mistakes and learn from them along the way, as well (Willmore, 2003).

Have some fun

As Rowan (2001) stated: "This may sound like an obvious point to make …. However, as with most things that we try to teach, there is a much greater chance that students will take the ideas on board if they have some fun while they are learning about them" (p. 102). The children organized an event and had fun, had parties, played around with graphics, trialed ideas. Perhaps the most fun aspect of constructing the website was that the students helped organize a community event where, besides presenting a movie of the processes they went through and the challenges and successes they faced, they also launched the website for the school, the regional community, and the global community to interact with. Each parent and community member was presented with a business card that contained the new school website address and they were encouraged to make comments and suggestions. The learning adventure continued.

CONCLUSION

The point of this paper has not been to present the view that this project was successful in a lock-step way. What this paper has attempted to illustrate is on one example of how one regional school has begun to engage with lifelong learning that incorporates current global discourses. The rural context in which this school and university are located provided some unique opportunities to engage the broader community to make some inroads into engaging with technology in meaningful and productive ways.

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THE THREE TIERS OF INFORMATION LITERACY: A MODEL FOR DEVELOPING LIFELONG LEARNING AT A TERTIARY INSTITUTION

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ABSTRACT

The University of Otago Library has created a three-tiered model to develop transferable information literacy skills that support lifelong learning. These tiers are standards-based and consist of traditional, user, education-based tours and classes (tier 1), a generic information literacy competency guide (tier 2), and the embedding of information literacy into academic curricula (tier 3).

INTRODUCTION

The University of Otago is a multi-campus tertiary institution based in Dunedin on the east coast of New Zealand's South Island and is the most southerly of the 50 universities in Australasia[1]. Founded in 1868, the university is the country's oldest, and it currently has approximately 18,000 students (16,000 efts [equivalent full-time students]) spread across four academic divisions: Health, Business, Science, and Humanities. While most students are based in the Dunedin region, approximately 3500 students, mostly studying post-graduate Health Sciences, reside elsewhere in the country, and overseas. The library system includes five Dunedin-based libraries: Central, Science, Law, Hocken (NZ collection and archives), and Medical, as well as medical libraries in both Christchurch and Wellington. The Central Library is based in the heart of the Dunedin campus in the new NZ$42 million Information Services Building that was officially opened in 2001. There is a common information and resource access management system (IRAMS) based on Voyager software that was introduced in mid-2003. The new system was implemented by LCoNZ (formally CONZULSys), a consortium of four New Zealand university libraries – see Hudson & Dewe (2004).

The decentralised nature of the University of Otago Library has resulted in the development of a diverse and subject-specialised professional staff but it has also presented coordination difficulties, particularly regarding the development of information literacy (IL). These problems have been exacerbated by the need to move away from traditional user education programs and to develop a more flexible learner-centred model. The complex system of IL that has developed across the library network can be categorised into three separate but inter-related tiers: user education, an IL competency guide, and embedded IL. This three tiered model is proving to be very effective in the development of information-literacy skills that are transferable beyond the University of Otago, and is, therefore, also producing lifelong learners.

LIFELONG LEARNING, USER EDUCATION, AND INFORMATION LITERACY

In general terms "lifelong learning" refers to the continuation of learning throughout the lifespan of an individual (Candy, Crebert, & O'Leary, 1994). More specifically, however, it emphasises the processes of developing new skills and understanding new concepts beyond the period of formal education traditionally associated with learning (Jenkins, Jones, & Ward, 2001). Lifelong learning is now widely accepted both as a social and economic imperative (Leader, 2003) and features prominently in both popular and academic literature. For example, it is now widely cited as a "graduate attribute" at many tertiary institutions (Down, Martin, & Hager, 1999). The importance of lifelong learning has grown dramatically in recent years as individual needs have adapted to the new demands of the emerging information society and the concept is therefore intrinsically linked to that of information literacy (Candy, 2002). The term 'information society' refers to one in which the creation, processing, and consumption of information have become the most significant socio-economic activities (Johnston and Webber, 2003).

[1] 39 in Australia, 8 in New Zealand, and 3 in Papua New Guinea.

There are no universally accepted definitions for the terms "user education" and "information literacy" (Bawden, 2001). In general, however, user education is a process involving a situation-specific response to a particular information need and is similar to the long-established practices of bibliographic instruction. In contrast, IL is a learning outcome focusing on the lifelong ability to recognise the need for, locate, evaluate, and effectively use information (ALA, 1989). The origins of IL can be found in both information science and bibliographic instruction (Johnston & Webber, 2003) and the concept now features in a very wide cross-section of education-related, academic literature.

Issues relating to user education and IL have been widely debated for many years, and over 5000 related articles have been published over the last three decades (Rader, 2002). Such debates have been associated with a worldwide shift in the philosophy of education from an emphasis on teaching styles, to one focusing more on student-centred learning (Kuh & Gonyea, 2003). During the 1980s this change was evident in the reconceptualisation of "library instructional efforts as information literacy" (Grassian & Kaplowitz, 2001). The magnitude of this transformation represents a "paradigm shift" in educational philosophy (Thompson, 2002), and today IL represents a cornerstone of librarianship (Marcum, 2002). In an information society, all students need to be information literate if they are to stay up-to-date with developments in a particular subject (Breivik, 1998). Nevertheless, IL has not completely superseded practises of bibliographic instruction and user education (Bawden, 2001), and emphasis on, and resource allocation to, the more traditional approaches is likely to remain into the foreseeable future.

In relation to IL, the term "embedding" refers to the process of aligning IL objectives with the learning outcomes of an academic course or program; "the embedding of information skills into a subject integrates it into the content, learning activities and delivery modes of the subject" (Hine, Gollin, Ozols, Hill, & Scoufis, 2002). It is desirable because students are much more likely to retain IL skills and hence develop into lifelong learners if IL is presented as integrated with a subject rather than as a "clip-on" (Bruce, 2000). In recent years the practise of embedding IL into the curriculum has become widely accepted (De Jager & Nassimbeni, 2002) and many university-based librarians are now working in conjunction with academic staff towards this goal. Such initiatives also represent a valuable opportunity for librarians to collaborate with and improve overall relationships with their faculty-based colleagues (Ivey, 2003). Such improvements are of fundamental significance, not only to the successful development of IL, but also to the "continued viability of academic libraries and librarianship" (Kotter, 1999).

The growth in initiatives aimed at embedding IL has been closely associated with the proliferation of IL standards. Standards are important for the development of IL as they "promote agreeing about the meaning of terms" (Catts, 2002) and also facilitate the application of IL theory. In New Zealand the most widely used version are those prescribed in the Australian and New Zealand Institute for Information Literacy (ANZIIL) Australian and New Zealand Information Literacy Framework 2004 (hereafter referred to as the 'ANZILF') and their use is being actively promoted at the University of Otago and at many other tertiary-education institutions throughout New Zealand (see http://www.anziil.org/resources/Info%20lit%202nd%20edition.pdf).

THE THREE TIERS: AN OVERVIEW

The University of Otago has a strong commitment to lifelong learning. It is one of the "Six Dimensions of Quality Learning" specified in the University of Otago Teaching and Learning Plan (TLP) 2002 (See http://www.otago.ac.nz/about/pdfs/teachinglearning plan.pdf). Furthermore, lifelong learning and IL are two of fourteen "Graduate Attributes" identified in the TLP. Both lifelong learning and IL are therefore of fundamental importance to all education programs offered by the University of Otago. This high-profile recognition at senior levels of the university hierarchy therefore presents the library with valuable opportunities to significantly extend the traditional range of services offered to the academic community.

Each of the seven University of Otago Libraries have developed a comprehensive user education program based on tours, tutorials, and (primarily) one-off lectures (see http://www.otago.ac.nz/about/pdfs/teachinglearningplan.pdf). Inter-branch cooperation and resource sharing relating to these programs varies although most are

designed independently. These programs range from the completely generic to the very specific targeting of individual assignments. These user education programs make up the "base tier" of IL at the University of Otago Library and are likely to continue to be the major component of the library's IL program into the foreseeable future.

At the other end of the spectrum the library also actively promotes the embedding of IL into the academic curriculum. The large number of papers offered across the university and the limited resources available, however, limit the number of new academic programs that can join the embedding scheme to only a few each year. Therefore, the decision was made to initially target specific programs for embedding based on a variety of factors but primarily on the course coordinator's level of interest in participating in the project. The embedding of IL into the curriculum represents the "top tier" of IL at the University of Otago.

Traditional user-education and curriculum-embedding schemes, however, do not provide adequate support for the development of IL throughout the university. Many staff and students require more assistance than the traditional user education programs can offer and adequate resources are simply not yet available to fully embed IL into the curriculum of every subject. A middle or "2nd tier" in the form of an "IL Competency Guide" has therefore also been created to act as a guide to the identification of IL skills for each academic level and also to assist academic staff with the application of the ANZILF. As shown in Figure 1 these strategies combine to form "three tiers of IL" at the University of Otago and each level is comprehensively explained below. Tier 2 is outlined last as it serves primarily to fill the gap between tiers 1 and 3. All three tiers are informed by the ANZILF.

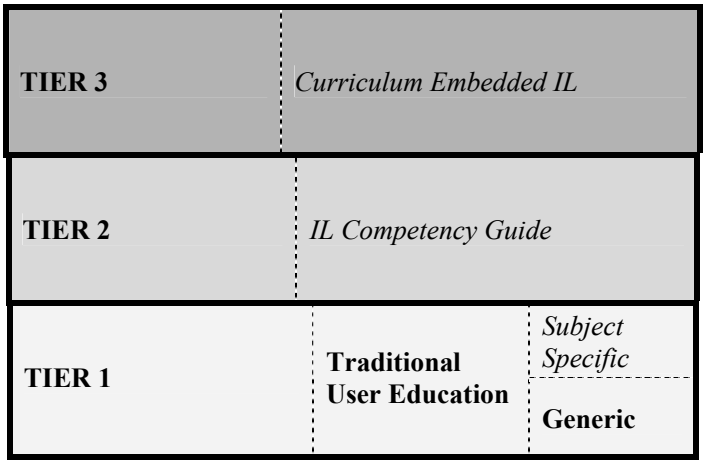

Figure 1. The three tiers of information literacy at the University of Otago.

TIER 1: TRADITIONAL USER EDUCATION

The library has provided a wide range of tours and classes for many years. In 2003, 703 classes were delivered to 11,098 students; about half of these classes were based in the central library. These numbers have remained relatively consistent for several years and represent a relatively high commitment to the education of library users when compared to other New Zealand universities (Mosley, 2003). The user education program takes two major forms: generic and subject specific (see http://www.library.otago.ac.nz/services/tute.html). Unlike tiers 2 and 3, this tier is not explicitly and systematically linked to the ANZILF, but the basic principles are incorporated wherever possible. The importance of adequately recording information sources (ANZILF Learning Outcome 4.1), for example, is an important component of classes that relate to finding academic journal articles.

They are scheduled at each of the seven library branches and include both generalised sessions such as tours and catalogue classes as well as much more focused tutorials based on such aspects as the use of specific databases. These sessions are offered throughout the academic

year although the peak demand is obviously at the beginning of each semester. They are attended by a very wide cross-section of the academic community from Foundation Studies (pre-first-year) to doctorate students and staff. In most instances attendance is voluntary, with many sessions being highly recommended by some academic staff. This approach to user education is flexible in terms of delivery but in some cases problems have resulted from the wide range of different levels and abilities that may be represented in a particular session. Student numbers also vary greatly and bookings are essential for some of the more popular database classes.

Each of the various subjects taught at the University of Otago has a reference librarian allocated from the relevant library. At the beginning of each semester the reference librarian contacts each academic department to promote the subject classes. Such sessions comprise of a wide variety of formats from subject-orientated tours to the use of discipline-specific, academic databases. In some cases lecturers are also looking for more detailed information based on a specific assignment task. These sessions are usually held in scheduled tutorial times and therefore attendance rates are high. They are very common at the beginning of each semester but are held only irregularly throughout the rest of the year. During peak times reference librarians from throughout the library system spend the majority their time preparing and conducting these sessions.

These subject-specific sessions also extend to personalised research consultations with post-graduate students and staff. They occur throughout the year and are usually most popular with new staff and students at the start of their research. Wherever possible such sessions are organized by the relevant subject reference librarian. These consultations are promoted on the worldwide web and within academic departments. The degree of uptake of these subject-specific sessions varies greatly despite the fact that the library's user-education programs are promoted equally to all academic departments. Some subjects expose nearly all their students to formal user education while others have only very limited contact with the library. These variations result from a wide range of factors including historical involvement with the library, attitudes of academic staff members toward IL, and demand from students.

TIER 3: CURRICULUM EMBEDDED INFORMATION LITERACY

Sociology was selected as the first subject in which to embed IL because the program has actively promoted the development of IL in the past and academic staff were very enthusiastic about the ANZILF. Work began mid-2003 on the embedding of IL into first-, second-, and third-year courses of the Sociology program, with the aim of teaching the first paper in Semester One, 2004. The ANZILF was used as a guide for selecting appropriate IL competencies for each course. It was decided to formally align the assessment tasks' objectives in each of the papers with the 19 learning outcomes specified in the six ANZILF standards. This approach was selected because "such assessment can reveal if there are areas of student performance needing improvement, if students have retained and effectively applied knowledge and skills from course to course, and if instructional strategies and learning outcomes are well aligned" (Rockman, 2002).

The initial challenge was to devise an appropriate practical framework. After much deliberation a table was developed with assessment tasks listed vertically and each of the desired learning outcomes listed horizontally. In this way individual assessment tasks are also aligned with both the 19 learning outcomes specified in the ANZILF and the relevant objectives outlined in the University of Otago TLP. Aspects of each assessment task were classified as either "core", "intermediate" or "advanced" in terms of the relevant IL learning outcome. In the future a "research" level will also be added to cater for post-graduate students in Sociology. The second assignment in Sociology 101 (an information-gathering exercise), for example, specifically relates to the ANZILF Learning Outcome 1.1 (the information literate person defines and articulates the information need) at the "core" level. This scheme applies to three Sociology courses at first-, second-, and third-year levels, and the scheme and has been designed so that at the completion of the third-year course each of the learning outcomes will be met at the advanced level at least once. This approach is consistent with techniques outlined in workshops at the 1st ANZIIL Symposium held at QUT in Brisbane in July 2003 (see http://www.anziil.org/resources/Alignment_of_IL_final.doc).

The task involved with the embedding of IL into the Sociology Program proved to be complex and time consuming. A successful NZ$8000 grant application was therefore made to the Committee for Learning and Teaching, and a research assistant was employed to help with the project. Evaluation of the scheme will be based on the use of the CAUL Information Skills Survey (see http://www.anu.edu.au/caul/index.html) and on information provided by focus groups. Two IL embedded Sociology courses (first- and third-year) were delivered on schedule in Semester 1, 2004 and a second-year course is scheduled for Semester 2. An unexpected bonus of the Sociology/IL embedding program has been the forging of much closer working relationships between librarians and academic staff.

TIER 2: THE UNIVERSITY OF OTAGO INFORMATION LITERACY COMPETENCY GUIDE

As outlined above, this tier is necessary because sufficient library resources are simply not available in the short to medium term to embed IL into the curriculum of every academic subject. The University of Otago IL Competency Guide is an interdisciplinary framework that provides a range of competencies appropriate for particular academic levels. "A framework or set of guidelines should provide support and overall structure to the planning process, yet allow flexibility for individual requirements" (Orr, Appleton, & Wallin, 2001). Therefore the IL Competency Guide is designed to provide academic staff, librarians, and students – from all academic disciplines at the University of Otago – with a general indication of appropriate IL competencies for each level of academic study: core, intermediate, advanced, and research. These terms were selected in preference to simply using the year level (1, 2, 3, 4+) because of inconsistencies across different academic programs; in some cases, for example, students in a first-year course may actually be working at the intermediate level and vice versa.

The IL Competency Guide evolved from an exercise conducted by reference staff from the central library in 2002 that involved the identification of generic, library-related skills or competencies desirable for each level of study at the University of Otago. This information was edited by reference librarians from all seven branches, collated, and eventually released in April 2003 as the University of Otago IL Framework (see http://www.library.otago.ac.nz/services/tandl2.html). This guide enabled academic staff to easily identify skills appropriate for their students and has proved to be very popular across a diverse range of subjects.

The major limitation with this guide, however, was the lack of formal alignment with the ANZILF. The term "IL Framework" was also substituted with "IL Competency Guide" to avoid confusion the ANZILF. In late 2003 work commenced on the new version, and all reference staff from the seven branches were consulted about aligning the IL Competency Guide with the ANZILF. Consultation over a four-month period occurred in the form of meetings, teleconferences, and email discussions. This project proved to be very complex and the development of the new IL Competency Guide resulted in many lively debates since a degree of subjectivity is involved with deciding to which ANZILF learning outcome a particular IL competency is most appropriately aligned. In some cases this process revealed "gaps", and completely new competencies were therefore devised for the new IL Competency Guide. Eventually, at least one IL competency was allocated to each of the 19 learning outcomes specified in the ANZILF at each of the four levels (core, intermediate, advanced, and research). The ability to construct and implement effective keyword searches using appropriate synonyms, for example, is aligned with ANZILF Learning Outcome 2.2 (the information-literate person can construct and implement effective search strategies) and is listed as a core-level IL competency. After considerable deliberation a preliminary version of the new "standards aligned" IL Competency Guide was eventually made available in April 2004 (see http://www.library.otago.ac.nz/services/tandl8.html) with the aim of producing a finalised version by the end of the year following consultation with the wider university community. The IL Competency Guide will also be used to assist in the embedding of IL into curricula (tier 3).

CONCLUSION

The transition from traditional user education to a more flexible IL-based approach, presents a major challenge for all academic libraries. At the University of Otago Library the response has

been the development of a three-tiered teaching and learning program: traditional user education-based tours and classes (tier 1), the IL Competency Guide (tier 2) and the embedding of information literacy into academic curricula (tier 3). All three tiers are based, either implicitly (tier 1) or explicitly (tiers 2 and 3), on the ANZILF.

The long-established user education program (tier 1) offered by the library continues to be effective. The large investment of time and resources that has been associated with the embedding of IL (tier 3) into the Sociology program will make similar future developments with other subjects significantly easier. Furthermore, the new University of Otago IL Competency Guide (tier 2) is assisting with the integration of IL into the curriculum at all academic levels across many different subjects. The "three tiers of information literacy" at the University of Otago is proving to be an effective model for the development of transferable IL skills and is therefore also producing lifelong learners.

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NO END IN SIGHT – INFORMATION SKILLS FOR ACADEMICS AND RESEARCHERS

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ABSTRACT

This paper follows the genesis, development and delivery of knowledge management seminars aimed at academics and researchers in the university environment who, although they are lifelong learners in their own subject areas, are not necessarily maintaining the currency of their own information-seeking skills.

(Te Kunenga ki Purehuroa – Inception to Infinity: Massey University's commitment to learning as a lifelong journey).

Much of the literature about the acquisition of information skills within universities relates to the teaching of students and to the skills required by graduates (Owusu-Ansah, 2004; Buchanan, et al., 2002; Candy, 2000). It is assumed that university academic staff have, in the course of their own education and subsequent research and teaching activities, acquired and maintained the information skills and the understanding of the knowledge environment needed to operate effectively in a profession that is defined, perhaps more than any other, by the accumulation, examination, creation, and communication of knowledge. There is a reverse logic to the assumption that because they are operating effectively they must therefore have the requisite skills and understanding to do so. The university, almost by definition, is seen to have created and maintained a research environment and culture in which participants share not only information itself but also knowledge about information sources and the skills needed to use these sources. Librarians naturally play a supportive role in this process, but one that is largely confined to acquiring and organizing the information itself and providing informal support and advice about its use. The formal teaching of information skills is regarded as important for students who are still learning how to do research, but such skills once acquired are then considered, like riding a bicycle, to be adequately maintained and developed by ongoing practice.

In recent years, a growing emphasis on academic practice and the need for university teaching to be more strongly linked to identifiable research has highlighted the fact that research performance is very uneven (Goldfinch, 2003; McMillan, 2003; HERO - Higher Education & Research Opportunities in the UK, 2001). In New Zealand, the introduction of performance-based research funding has required university staff to submit portfolios of research outputs that will be evaluated and "graded" according to criteria such as the citation rankings of the journals in which articles are published. What has been known anecdotally about the balance between teaching and research varying across the range of disciplines is now becoming quantifiable, and universities are recognising that the existence of a research culture cannot be taken for granted but requires nurturing and support through such activities as training and mentoring (Massey University Training and Development Unit, 2003; University of Sheffield, 2002; Eliasson, Berggren, & Bondestom, 2000).

A paper given at this conference two years ago (Abbott & Selzer, 2002) contrasted the impoverished information environment of students with that of academics who had "established networks for identifying information and accessing the shared information resources of an established culture" but went on to cite another study to the effect that "students … generally lacked confidence in the ability of the supervisor to assist in the development of high level information skills" (Genoni & Partridge, 2000). That a discrepancy exists between formal expectations of the information skills and understanding of academics and their actual performance should come as no surprise, however. While Abbott and Selzer correctly pointed to networks and shared culture as being the great strengths of the academic research community there is, leaving to one side for the moment any concern about the extent to which all academics participate in these networks, substantial reason to question whether the networks themselves are capable of performing the complex task expected of them in this regard. Mann (1993) pointed out the weakness of "the invisible college" when "one's colleagues are themselves innocent of contact with library resources."

It is important, however, not to suggest that the information-seeking behaviour of academics is absolutely deficient in varying from a predetermined norm that lies within the domain of librarians and information specialists. A recent study of the search habits of "domain experts" (Drabenstott, 2003) has summarised research that suggests that the academic literature searching of such experts is firmly integrated into the totality of their existing knowledge of their fields and of the literature. Far from being a neat, stepwise progression from a state of unknowing ("information need") to one of knowing, it is in fact an ongoing interaction with the literature through such activities as area scanning, footnote chasing, and known-author searching. Stoan (1984) had noted that established researchers identify "much of what they need without recourse to the library's access and synthetic literature" because of their knowledge of the major contributors to their fields and their extensive reading of the literature. While their range of behaviours may have been extended by the desktop availability and multiple-year searching capacity of online databases, there is still reason to believe that many academics rely primarily on their existing knowledge of authors and sources and that they may even find the keyword approach to information searching unsatisfactory (Jefferson & Nagy, 2002). The popularity of cited-reference searching and its extension beyond the originating ISI databases would tend to confirm this view, as it is a methodology slanted towards the use of existing domain knowledge. Mann (1993) has characterised the information behaviour of scholars as following "the Principle of Least Effort" and any approach to modifying this behaviour needs to take that principle into account.

A difficulty exists here, however, in that we cannot automatically assume that all academics are domain experts in all circumstances. There is considerable movement of staff between academia and industry, for example, and a consequent need to develop current knowledge of the field before key authors and information sources can be identified. In other cases, an academic who has concentrated on teaching may find that they are required to undertake more research. Interdisciplinary research and the development of new areas are other cases in which domain expertise cannot be taken for granted. A further drawback to area scanning is that it is not always either efficient or effective. An excessive reliance on known authors and sources may retard a researcher's awareness of new developments and of the linkages between their own area and related fields. The ideal toolkit would equip the researcher with skills for both area scanning and information searching.

The greatly increased information access provided by electronic systems has come at the cost of a correspondingly greater degree of complexity, and the high rate of change has continued to make skills and knowledge redundant at an equally fast rate. While much of this change and complexity is relatively trivial and relates to such matters as variations in truncation symbols or methods of creating marked sets of records, it is precisely these factors that stand as a barrier to any but the most basic use of many information systems. The use of a minimal set of techniques is an understandable response to the variability that exists between different systems and, over time, within the same systems. Many databases, for example, use the same standard Boolean logic but differ syntactically, using different truncation symbols, adjacency operators, limits, and so on. By ignoring these features the library user is able to assemble a simple toolkit that works in most circumstances but at a

considerable cost, usually not visible to them, in terms of both recall and accuracy. While this is absolutely understandable it greatly decreases the value of the institution's investment in information products.

An environment characterised by rapid change at the detailed level is not well suited to the "cultural transmission" of knowledge and skills from senior members of the community to neophytes. Although patterns of knowledge transmission through university communities are considerably more complex than this simple model suggests, it is nonetheless true that those to whom a student or junior staff member might look as possessors of a weight of knowledge and experience in the field are no more likely than anyone else to be up to speed with the electronic "latest thing". It could even be argued that, as new technologies are taken up more readily by younger people (Chau & Hui, 1998), and by those with a certain amount of discretionary time, academic discipline leaders are in fact less likely to be early adopters of novel information-seeking and management practices and that this is the source of some of the tension surrounding the ongoing information revolution.

Massey University is a fairly typical example of the benefits afforded by the new information environment and of the difficulties presented by it as well. Situated in Palmerston North in the lower half of the North Island, an area of only medium population density, it was originally New Zealand's only provider of university education by distance and remains pre-eminent in this field with a large body of students throughout the country. Ten years ago Massey embarked on an ambitious program of expansion, opening a second campus in Auckland and merging with the College of Education in Palmerston North and with the Wellington Polytechnic. (Both of these institutions have been fully incorporated into the university with their staff taking on the status and accountabilities of university academic staff. One result of this is that there are many university staff working on PhDs or otherwise trying to establish research careers). At present the university operates on four main sites and has five libraries. At each stage of development the features of the electronic environment have provided critical support to this development; from the online catalogue giving staff and students at new or smaller sites access to the total library collections, to the extension of online database access to distance students and, more recently, to the electronic provision of substantial journal collections to the entire university community. At the same time, this process has placed heavy demands on the university's computing and network infrastructure which has struggled to deliver good-quality access to the full range of information provided by the library. It has also required library users to keep up with constant change and to tolerate a degree of uncertainty about the resources available to them and the optimal means of accessing these resources.

By and large these developments have been received very positively, but a growing concern by many academic staff that they have "lost touch with the library" is also evident. The making of fewer visits to the library as a result of electronic journal provision is an obvious and universal example and there is consequently less opportunity for casual contact with library staff that in the past, went along with information or serials desk enquiries. Massey, like many libraries, introduced a liaison scheme giving librarians specific responsibility for groups of academic staff and postgraduate students in order to counter this trend and to follow the information out of the library. As well as formal training they have provided individual research consultancies which have been taken up more enthusiastically by postgraduate students than by staff. Many staff will recommend that their PhD students take a research consultation with a member of the library staff much more readily than they will request one for themselves. Academic staff, following the "principle of least effort", seek no more than a minimal toolkit of techniques. The task of information skills trainers is to help these staff to develop the most effective toolkit consistent with the principle.

Eleanor Smith of North Carolina State University has developed a checklist of information skills for the "Professional Scientist: Postdoctoral and Independent Researcher" which is a very useful summary of what such a toolkit would consist of (Smith, 2003):

- Updates on new features of known resources and introduction to new resources.
- Keeping up with the literature: environmental scanning/browsing, table of contents services, alerts/SDIs.
- How to identify core journals in a discipline.

- Citation indexing and Journal Citation Reports. "Publish or Perish." The uses and limitations of citation counting and impact factors. Searching the ISI databases.
- Advanced searching of key, discipline-specific resources. Bibliographic and data sources.
- Science on the web: portals, resources, directories, news, organization and publisher information, searching, databases available.
- Locating meeting and grant news and announcements.
- Issues in scholarly publishing and communication. Copyright. The serials crisis.
- The E-journal revolution, electronic publishing, and accessing full-text journals online. Relevant preprint collections or services.
- Managing a personal resource collection. Different organizational ideas and systems. Bibliographic management software tools.
- Crossing boundaries, entering new territory. Inter- or cross-disciplinary searching. Locating key information tools and ideas in new subject areas.
- Information skills and instruction in undergraduate and graduate courses, and in graduate and postdoctoral training and mentoring. (from section headed 'A Proposed Bibliographic....')

This list is valuable in that it includes searching and scanning skills, current awareness tools, use of the internet, and bibliographic management software; and places the skills firmly within the broader context of academic practice. The use of tables of contents services and automated alerts, for example, provide forms of area scanning that are both familiar and congenial but that extend the researcher's capability well beyond what has traditionally been possible. Bibliographic management software provides a linkage between the literature search and publishing activities, and is widely popular, but its full functionality – particularly in relation to database searching – is not widely appreciated. A broader understanding of e-journal publishing and related ownership and copyright issues is a counter to the widespread misconception that, in the new environment, information has become freely and universally available. The identification of core journals is an aid not only to scanning but to publishing as well, whereas an understanding of the Journal Citation Reports and journal ranking systems is fast becoming an essential tool for the modern academic. Last, and by no means least, the ability to locate quality information and websites of high domain relevance on the internet is an absolutely basic skill for any knowledge worker.

Smith's list also highlights the fact that much of the additional capability, or added value, provided by electronic information systems has a greater relevance for research students and academic staff than for undergraduate students. But while research students have a natural point in time at which to begin to acquire information skills and a distinct awareness of the need to do so, this is much less the case for academic staff. The importance of "embedding" the learning of these skills into a broader learning context has been widely recognised (Abbott & Peach, 2000) but there are difficulties in locating an appropriate context for academic staff when so much of their professional learning is delivered by colleagues and research networks. Massey University Library liaison librarians had used various outreach techniques involving visits to departments (including "library connection" sessions held in departmental computing labs) or individual research consultations with some success but it was difficult within these contexts, where the emphasis tended to be on new information products or where help was generally solicited for quite specific problems, to introduce academics to a broad range of issues relating to the new information environment.

An opportunity presented itself in the form of the university's Training and Development Unit's (TDU) Research Management Skills Programme. The aim of this program, which leads to the Research Management Skills Certificate, is to "encourage and support staff new to research at Massey." (Massey University Training and Development Unit, 2003) It consists of modules which "are designed to provide opportunity for participants to obtain policy and practice information and to engage and interact on various topics and issues. Participants will gain insights from experienced senior researchers presenting at the workshops and seminars." A proposal was made to TDU that a knowledge-management module be presented, and on its acceptance a half-day presentation was prepared entitled "Knowledge Management in the Emerging Electronic Environment". The title emphasised the

intention to go beyond a traditional library or information skills approach and offered an integrated set of skills for exploiting the new environment.

Obviously this was a broad area to cover in half a day and the session was essentially an overview – introducing participants to a wide range of functionalities rather than trying to teach specific skills in detail. The aim was that participants would become aware of the scope of electronic information functionality and of areas that they could later explore in depth. A further relevant factor was that the Research Management Skills Programme was multidisciplinary in nature – TDU courses are marketed to the whole academic community so that whatever was produced had to be of broad appeal and relevance. Ideally a program of this type would be of high domain relevance to participants but there was a tension in this case with the cross-disciplinary nature of the program. A further potential difficulty arose from the likelihood that participants' existing levels of knowledge and skill would vary widely.

The presentation covered the following areas.

- an overview of the electronic information environment, and the distinction between the deep and surface webs;
- use of Google, including advanced searching and limiting by country and domain;
- the relationship between the web and standard academic publishing formats and the importance of access tools;
- standard database searching, including Boolean logic, truncation and proximity operators. Links between database records and electronic documents;
- cited reference searching;
- journal contents page alerts and subject-based alerts;
- the importance of learned society web pages and other internet communities;
- use of bibliographic management software to capture, store and output records;
- journal citation reports and other methods of selecting journals in which to publish;
- participant reflection on the implications of what they had learnt that might help get their own research published and read, and on their own role in encouraging lifelong learning for their students.

Emphasis was placed on a presentation that would be lively, interactive, and varied without being patronising. It was broadly based around a PowerPoint slideshow using a mixture of explanatory slides and screen shots with four or five hands-on exercises. To minimise any discomfort that may have been felt, a light and humorous tone was maintained and the detailed complexity of the field was acknowledged. The unique characteristics of academic information were emphasised throughout and the continuity between the print and electronic environments was highlighted wherever possible.

Confirmation of the relevance of the session and of the need for it came with the high number of enrolments when it was advertised as part of the TDU Research Management Skills Programme. There was strong interest from the start and a total of sixteen sessions were delivered to 211 staff over three campuses during 2003. Attendance was roughly similar over the three campuses – it was higher in Wellington as an extra session was held for a departmental group at the request of its manager.

Although no formal analysis of the status and length of employment of attendees was undertaken they appeared to fall into four groups: relatively newly-employed staff including some in research-support positions; staff upgrading qualifications; staff who had been researching for more than ten, or even twenty, years (including some fairly senior academics); and a group with reasonably well-established research careers. The reasons for attendance by those new to academic life or by those upgrading their qualifications are obvious. The lack of relevant information skills amongst senior staff was noticeable and it is possible that although they are less able to acquire these skills through networking, they are comfortable doing so in a formal training context alongside other academic staff. Those with well-established research careers tended to be "research enthusiasts" keen to acquire fresh techniques.

As soon as the first round of sessions had been held the presenters concluded that the content of the course was both novel and relevant to participants. While many participants had heard of Boolean logic their understanding tended to be hazy and all but a few were surprised by the power of Google Advanced Search. Many participants had heard of bibliographic management software but few were using it and fewer still were aware of the extent of its

functionality. It was also evident that electronic networking and current awareness were not widely practised. At one session, none of the participants currently subscribed to any academic electronic discussion groups and held the view that they "already got too much email" suggesting that they did not make full use of the organizational and filtering capabilities of their software.

Evaluation forms aimed at obtaining feedback to improve the modules were distributed at all sessions. Participants were asked to rate the session, reflect on its relevance (particularly regarding aspects and/or knowledge that they would be likely to apply), comment on the general presentation and content, and list suggestions for improvement to further training sessions. The average rating was 4.38 out of a maximum rating of 5, indicating that the content and presentation were favourably received by participants. The qualitative comments in the feedback indicated that the aims and relevant issues were being addressed. The feedback was collated, reflected on, and acted upon appropriately.

An informal telephone survey was conducted in January 2004. A random sample of 21 attendees (10 percent of participants) were contacted and asked whether they had used any of the knowledge or skills they had gained from attending the session, and if they thought the session had been worthwhile. One participant, who was a recent graduate, said he knew most of the session content but that it was a good refresher for him. The rest said they had successfully applied skills and knowledge gained from the session. Without exception they stated that it was "definitely" worth attending. A number of participants had recommended the program to colleagues and it was the experience of the presenters that some participants at later sessions were attending because of word-of-mouth reports. Others had referred postgraduate students to liaison librarians for research consultations.

CONCLUSION

The concept of lifelong learning implies that the learner is undertaking a journey coextensive with life itself and that there is no point of arrival. It is easy, then, to overlook those who have "arrived" and to exempt them from the necessity to update their skills and knowledge on an ongoing basis. If this attitude exists, albeit unconsciously, towards and on the part of professional academics, then it has not served them well. Professional training for academics is a relatively new and growing field and one to which information professionals have much to contribute. While the program at Massey University has been relatively limited in scope, it has highlighted both the need for a more formal and extensive approach to the area and the likelihood that it will be received with gratitude and enthusiasm.

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THE WORK OF THE EDUCATOR IN PROMOTING PERSPECTIVE TRANSFORMATION IN LIFELONG LEARNING

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ABSTRACT

This paper intends to present a glimpse into the work of the educator in promoting Mezirow's (2000) perspective transformation as lifelong learning within a pre-undergraduate program that is designed to challenge and change the worldviews of learners seeking entrance to university.

INTRODUCTION

Human beings hold and express many and varied perspectives and worldviews, formed as a lifelong practice and impacted on by multiple sources, including customs, traditions, upbringing, values, beliefs, assumptions, experiences personality traits, learning styles, and societal norms (Mezirow, 2000). These sources overlap to create the lens through which individuals view the world, how they express opinions, how they act and react to events and occurrences, how they judge others, and how they live their lives. Throughout the process of life, such worldviews or perspectives may change. Having those views challenged or changed by considering alternative or other worldviews can be a valuable part of lifelong learning, as one broadens one's perspectives, questions taken-for-granted situations, and takes some time to reflect critically on why things are as they are. As a result of this process, perspectives can be transformed. The *Language and Learning* course of the enabling program STEPS (Skills for Tertiary Education Preparatory Studies) at Central Queensland University is a course that challenges its mature age learners to reflect on their long-held individual perspectives and viewpoints, contemplate how these may have been shaped, and become capable of accepting the worldviews of others. This process could well be viewed as an integral and vital part of lifelong learning**.**

This paper begins by presenting an overview of lifelong learning in today's contemporary context, and alludes to the elusiveness of the sometimes overused and misinterpreted term "lifelong learning"; a term that is undergoing clarification and redefinition in times of great change. A description of who the STEPS students are is offered, followed by descriptions of elements considered to be essential for the educator; namely, adult learning principles and transformative learning. Perspective transformation is discussed, the phases of which reflect the journey some learners engaged in the

Language and Learning course undergo as the course proceeds. Set in the context of higher education – or, more specifically, within a writing course of an enabling program designed as a pathway for mature-age learners to embark on tertiary education – this paper provides glimpses of the roles that educators within the *Language and Learning* course must play in promoting perspective transformation and lifelong learning. It concludes with the recommendation that perspective transformation be considered as an integral part of lifelong learning.

LIFELONG LEARNING

A definition of the term "lifelong learning" is somewhat elusive. Bennetts (2003, p. 457) emphasises the difficulty of defining such a term and acknowledges that "the concept of lifelong learning remains open to multiple definitions and interpretations". A definition for lifelong learning in Australia has been cited by International Insight (2002) as "the process of acquiring knowledge or skills throughout life through education, training, work and general life experiences". The Centre for Lifelong Learning and Development (2001) likens lifelong learning to a journey to be travelled, one that is about not just reaching the destination, but also how the journey is travelled; According to the centre, lifelong learning is "essential for all, as a cradle-to-grave process which involves the continuous development, acquisition and application of knowledge, skills, values and wisdom across the lifespan" (p. 1). There is little doubt that, as we travel the journey of life, we constantly engage in the lifelong process of learning. As Carneiro (2000, p. 30) notes, "humans have been designed for learning" and have been engaged in that process since the first humans roamed the earth and survived on senses and instincts. Thus, lifelong learning is a continual process, spontaneous and contrived, formal and informal, and defies a definitive description.

In some ways the term "lifelong learning" has become a hackneyed phrase of our times, permeating corporate, institutional, government, and workplace vision and mission statements and pertaining to various modes of learning. However, where lifelong learning may once have been viewed as a more personal, informal recreational or educational pursuit, the notion of lifelong learning has changed from its more humanistic traditions to become a much wider concept impacted upon by a combination of aspects of economic, employment, social, cultural, and educational objectives (Adult Learning Australia, 1999). Rapid changes within our contemporary era are exemplified by great transformations in many facets of modern life, and lifelong learning is one such area undergoing great redefinition. Australia is no longer an industrial society of the modernist era, and the dictates of the knowledge- and information-based society are calling for its citizenry to "develop skills that are relevant to their own needs and to those of employers, professional associations, labour markets and society" (Department of Education, Science, and Training, 2003, p. 11). Lifelong learning has never been more important.

In our rapidly globalizing world, knowledge and learning are considered to be valuable attributes, with the acquisition of both being actively encouraged. Van Huren and Henning (1998, p. 2) contend that citizens of our contemporary times need to be lifelong learners if they are to keep up with rapidly changing demands of a more globalized world in which knowledge is commodified as a saleable product. With regards to the Australian context, the Commonwealth Department of Education, Science and Training (2000, p.1) sees it as vital that citizens have the "opportunities to develop the knowledge, skills and understanding needed to prosper in a high technology world". Thus, for many citizens, lifelong learning is necessary for ensuring inclusion and retention in the workplace. This is evidenced by unprecedented numbers of adults entering the realm of higher education in the pursuit of university qualifications. Once the exclusive domain of the elite and younger adults, higher education and opportunities for more formal lifelong learning are becoming far more available to the masses. This worldwide trend is seeing many citizens embark on higher education with the intention of acquiring the necessary qualifications for entry into the knowledge society's workforce. Furthermore, through Australian federal government initiatives that continue to channel financial assistance into university preparatory programs, higher-education numbers have increased significantly. Figures from the Australian Bureau of Statistics (2002, p. 2) indicate that "between 1990 and 2000 the total number of higher-education students rose by 69%". This clearly illustrates the value and priority that is being placed on the acquisition of knowledge and lifelong-learning skills.

It would seem that lifelong learning is taking on a whole new meaning for many citizens. Large numbers of mature-age learners are finding themselves back in formal learning situations after many years of being away from such environments, and studying with fellow students at least half their ages. Many cultures, backgrounds, races, religions, languages, and motivations combine to create unique higher-education learning contexts and, with the excitement such diversity can bring, so too can confusion, conflict, and anxiety occur. And a certainty for many is that change will occur; for, as Brookfield (1987, p. 51) attests, "if one feature in our society appears to hold constant, it is the certainty of change". For some, change may be unwelcome, unsettling, and unwanted but for many it can be enlightening, liberating, and exciting, and great transformations in perspectives may take place. Well informed educators with a strong belief in the power of transformation thus have a vital role to play in facilitating, mentoring, guiding, encouraging, challenging, and celebrating the lifelong-learning process of the learners with whom they interact. The work of the educator in the *Language and Learning* course of the STEPS program is an example of this, as the educator challenges the perspectives and worldviews held by learners, and actively promotes perspective transformation.

WHO ARE THE STEPS STUDENTS?

STEPS students are those aged nineteen and over who wish to embark on higher education and choose an enabling program to equip them with the skills and expertise to do so. Coming from a broad range of socio-economic backgrounds, the learners represent a broad spectrum of society. Such an audience brings with it an array of life experiences, prior learning, biases, opinions, ideas, feelings, disappointments, aspirations, beliefs, motivation levels, and expectations. For some, STEPS is a revelation of another way of thinking, and thus it opens up many possibilities; for others it is a corridor to further hopes and dreams; and for some it is an experiment or a means to an end – merely a litmus test for the rigors of university study. Regardless of motive, many STEPS learners can be viewed as border crossers (Giroux, 1992) because they cross the boundary with stories from the sometimes negative learning environments they have encountered in the past. Many speak of unhappy or unfulfilled experiences within the primary and secondary schooling systems; others speak of economic and social barriers of the past that precluded their entry to university; others state how their lack of academic qualifications has prompted them to seek university qualifications in the hope of a better life for themselves and their families. Some, however, may come to the program because of great disruption in their personal lives – due to, for example, termination of employment, changes or turmoil in personal relationships, or the need for new direction. Most are ready to enact some change in their lives and are motivated to do so.

By virtue of years lived and prior life experiences and learning, STEPS students arrive with their individually shaped and entrenched perspectives and worldviews. Most learners begin the *Language and Learning* course with interesting, amazing, heart-wrenching, insightful, and rich stories, yet many display varying levels of naivety, ignorance, and prejudice and, sometimes, very narrow-minded and ill-informed views. Many have acquired valuable life skills that have held them in good stead, whilst others arrive with stories of past failures that have impinged quite dramatically on their self-confidence, personal growth, and ability to accept viewpoints other than their own. A large percentage of learners express apprehension about entering the realms of formal learning after varying degrees of time away from such structures, and the notion of embarking on higher education can be extremely intimidating. Support from families and friends is strong for some learners, but non-existent for others. The myriad of individual differences and worldviews held by the STEPS learners conspires to make for very interesting and challenging work for the educator. Paramount in the effectiveness of the work of the educator is a thorough comprehension of, and strong advocacy for, adult learning principles and transformative learning.

ADULT LEARNING PRINCIPLES

The role of the educator in promoting perspective transformation as lifelong learning entails a strong adherence to adult learning principles (Foley, 2000; Knowles, 1998; Merriam & Cafarella, 1999). According to Foley (2000, p. 47) adult learning principles are shaped by both humanistic and cognitive psychology and "are principles to guide adult educators when they work with learners". As well as effective and satisfying learning and

teaching principles, Foley (2000) believes them to be "just as much statements of the value positions of particular adult educators" (p. 48). However, these principles are based on the premise that adult learners should be presented with learning experiences that are relevant to their past and present life experiences and should be related to current concerns and experiences. Thus, educators value and build on students' prior knowledge and experiences and consider individual characteristics, interests, and learning styles in the design of learning activities. Central Queensland University (2002, p. iii) notes the importance of this when it acknowledges that "STEPS students come with a wealth of life experiences, ideas and feelings and their learning experiences will be varied according to the different learning environments they have encountered". Educators must also remember that many adult learners have family, work, and other commitments; engagements the educator must be ever aware of and sensitive to in planning, delivering, assigning, and assessing learning experiences.

Adult learners need to see purpose and directions for their educational pursuits. Knowles (1998, p. 151) describes the adults learners' need to know how their learning will be conducted, what exactly will be learned, and why such knowledge will be valuable. These needs are said to affect motivation to learn, learning outcome, and the propensity to use learning in the future. Brookfield (1986, as cited in Foley, 2000, p. 48) lists the six important principles of adult learning as "voluntary participation, mutual respect, collaborative spirit, action and reflection, critical reflection and self direction". Adherence to these adult-learning principles, especially critical reflection, is an integral element of transformative learning and perspective transformation.

TRANSFORMATIVE LEARNING AND PERSPECTIVE TRANSFORMATION

Transformative learning is learning that actively promotes and seeks to cause perspective transformation in the individual learner. Mezirow, considered by Merriam and Cafarella (1999, p. 319) to be the "primary architect and spokesperson" of transformative learning over the last two decades, describes perspective transformation as learning that seeks to help adult learners transform their ways of thinking about themselves and their world (Mezirow, 2000). He believes learning to occur in one of four ways: "by elaborating existing frames of reference, by learning new frames of reference, by transforming points of view, or by transforming habits of mind" (p. 19). Perspective transformation can be immediate or occur over time, and Mezirow (2000, p. 22) is the first to acknowledge that not all learning is transformative. He believes perspective transformation follows a series of phases, often beginning with a disorienting dilemma that confuses or perplexes the worldview of the learner. This takes the learner on a journey of self-examination and reflection to explore and adopt new actions and, when internalised by the individual, can result in transformed perspectives. However, Merriam and Cafarella (1999, p. 333) question the necessity of the disorienting dilemma as a trigger for transformative learning and highlight the problematic issues of transformative learning theory as "the extent to which the theory takes context into account; whether the theory relies too heavily on rationality; the place of social action; and the educator's role in facilitating transformative learning".

Critical reflection is an inextricable facet of perspective transformation and involves critical self-reflection and reflection on discourse and practices. Brookfield (1995, pp. 26-27) applauds the value of critical reflection, believing the ideological concept to "enliven our classrooms…increase democratic trust…[and] ground us emotionally". To Brookfield (2002, p. 125), critical reflection involves the engagement of the individual in some sort of power analysis of the situation or context in which learning is happening, and the examination of hegemonic assumptions that serve the interests of others. Perspective transformation, defined by Cranton (personal communication, November 5, 2003) as "an individual's revision of a meaning perspective or a worldview as a result of critical self-reflection", cannot occur without critical reflection. Critical reflection, however, can occur without an accompanying transformation in perspective. As Brookfield (2002, p. 125) notes, "although critical reflection is an ineradicable element of transformative learning, it is not a synonym for it". The role of the educator in an educational curriculum that espouses transformation of perspectives is thus a vital one because the educator actively models, encourages, and promotes critical reflective practices.

WORK OF THE EDUCATOR IN THE LANGUAGE AND LEARNING COURSE

The thirteen or twenty-six week STEPS program is designed as a pathway for mature-age students to higher education. Language and Learning is a writing course, and represents one of four courses undertaken in the program. Many of the writing strategies used are designed to encourage students to express themselves in both the written and spoken word, one objective being to gain a greater understanding of the self and the forces that have shaped individual worldviews. The aim of the educator is to help learners understand the influences of personal attitudes and beliefs on individual worldviews and how worldviews and perspectives can change and impact on others. Learners are encouraged to record and discuss the changes that may be occurring in their perspectives as they are challenged and confronted by issues in the curriculum. From the very outset of the course the educator encourages learners to use reflections in personal journals as the impetus for writing and discussion. Educators actively promote, provoke, and facilitate discussion and encourage the sharing of learners' stories, worldviews, and experiences through discussion groups, learning circles, and tutorials. They challenge learners to reflect on and write about how their own personal worldviews have been formed and continue to be shaped. The educator then encourages learners to link such insights about personal worldviews, and to apply them to the analysis of broader contemporary societal issues. Such insights, however, can be unsettling and confrontational and may engage the learner in some angst and consternation as change occurs. Assurance, encouragement, and support are offered by the educators, alongside constructive feedback and technical help, as is strong support from the peer group.

Due to its focus on change, the *Language and Learning* curriculum can create what Mezirow (2000, p. 22) refers to as disorienting dilemmas, whereby long-held worldviews are in some way unsettled and challenged. Conflict amongst learners inevitably occurs as learners proclaim their personal worldviews and opinions. Heated discussions, agitated learners, and raised voices are all part of the environment as issues are debated, challenged, and analysed. The work of the educator is to judiciously lead conversation and discussion in the classroom situation, ensuring that all those wishing to voice an opinion may do so in a non-threatening environment. The educator must insist that learners listen to and respect the worldviews of others even though they may not hold the same perspectives. Avenues other than verbal contributions must be made available for those wishing to express their opinions, and all opinions must be listened to with positive feedback given as often as possible. The educator must also be the adversary of oppressive behaviour (Foley, 2000) and reassure learners who are confronting change.

Just as the work of the educator can be quite demanding and challenging as learners deal with change, such work is not without its rewards and gratifications for both educator and learner. Disorienting dilemmas that occur in the personal lives of the learner can set a powerful chain of events in place that can be transformative and eventuate in new-found release from unfulfilled lives. As learners progress through the phases suggested by Mezirow (2000), many accommodate new perspectives to their existing schemas and look at life through a different lens. The suppressed woman who suddenly realises her life can be so different no longer tolerates a minoritised, downtrodden life, and determines that she can pursue her dreams. The retrenched male with financial and other responsibilities suddenly realises his life can be quite different from that expected of him by family and others, and recognises that there are other paths in life he can take. Such changes in perspective according to Merriam and Cafarella (1999, p. 320) are "personally emancipating in that one is freed from previously held beliefs, attitudes, values and feelings that have constricted and distorted one's life".

The educator's work is to support and encourage learners as they embrace change, and also celebrate special moments. The "ah-hah" moments, when one observes or hears manifestations of the learner's transformed views, are very special for the educator. Comments made by learners, such as "I've never considered it like that before", accompanied by expressions of wonder and revelation are the rewards the educator celebrates. Educators also share many exciting moments as they journey with their learners, witnessing personal achievements and transformations of many learners and the impacts these changes can have. As Clarke (as cited in Merriam & Cafarella, 1999, p. 318) says, real changes can occur, for "transformational learning shapes people; they

are different afterward, in ways both they and others can recognise".

Perhaps one of the most powerful outcomes of transformative learning is the transformation of eductors, who cannot help but be included as they work side by side with transformed learners. Qualities of compassion, humility, and empathy can be greatly enhanced as educators work with learners who have stepped out from worlds of discontent and confronted many hurdles and obstacles placed in their way. Despite these setbacks, many learners tenaciously progress through the course, often learning more about themselves than the rudiments of the academic essay. Many of their strengths lie in the prior learning and life experiences they attest to, manifested in the rich stories many tell. Educators can learn from such stories and experiences, and their own process of perspective transformation can be enhanced. They cannot help but be inspired as they encourage and understand their learners, as well as collaborate and celebrate with them as they travel together on the path of lifelong learning.

CONCLUSION

The work of the educator in promoting perspective transformation in lifelong learning is both challenging and rewarding in the current climate of rapid technological change. A greater diversity of mature-age learners seeking entrance to the realm of higher education calls for educators in preparatory programs to adhere closely to adult-learning principles. Calculated measures of provocation, questioning, and challenging are essential for the educator when engaged with learners in a transformative learning course such as the *Language and Learning* course of the STEPS program. Through the promotion of critical reflection, new perspectives and revised worldviews can be acquired. This is a valuable lifelong-learning skill whereby citizens learn to ask questions and seek answers of systems of which they are a part. The work of the educator is important in both practising and promoting lifelong-learning skills in learners; skills that can stay with those learners throughout university and accompany them on the journey of life.

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"SOMEWHERE AND SOMETIME I CHANGED": STUDENT VOICES FROM AN ENABLING PROGRAM

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ABSTRACT

Post-modern society requires many adults to embark on higher education and to become effective lifelong learners. The success of the STEPS pre-undergraduate program illustrates that an important prerequisite for successful lifelong learning is a curriculum that promotes consciousness raising and an understanding of the interconnectedness of change. As a result, transformed worldviews are possible; and enthusiastic, committed, lifelong learners are created.

INTRODUCTION

The fast onslaught of the information age is consuming our minds and inciting our citizens to quickly fill places in our higher-education institutions. Driven by the demands of a society that regards knowledge as a valuable commodity, growing numbers of Australian citizens of all ages and socio-economic and other backgrounds are seeking entry to, and embarking on, higher education. Through initiatives such as the "Nelson Review", the Commonwealth Government (Department of Education, Science and Training, 2003a) is recognizing the need for enabling programs as a transitionary phase from the ordinary world of work and home, to the world of higher education. One such enabling program is the pre-undergraduate program called STEPS (Skills for Tertiary Education Preparatory Studies) on offer at Central Queensland University. Learners aged 19 years and beyond are eligible for entry to a program that is fundamentally designed to provide a pathway to higher education. The STEPS program was first offered as a Commonwealth-funded equity pilot initiative in 1986, and then grew in subsequent years when the higher-education reforms of 1987 resulted in major expansion in the number of student places and increased opportunities for participation in higher education. The aim of the program is to equip learners with the lifelong learning skills, confidence, knowledge, and independence to successfully enter and complete their tertiary studies.

This paper begins by presenting the context of higher education in Australia and gives some indication of the increasing proportions of the population embarking on higher education. The notion of interconnectivity between dimensions of society and how systems within each dimension impact on the other, is supported. This notion is carefully examined in terms of the impacts that consciousness-raising can have on the individuals, and the dimensions and the systems of which they are a part. A small group of students tell their stories of STEPS and of the program's impact on their university learning, and how, through increased consciousness, their pursuit of lifelong learning has been enhanced and facilitated.

THE HIGHER EDUCATION CONTEXT

In Australia, and indeed worldwide, higher education is becoming more necessary for, and accessible to, more sections of society. According to the Australian Bureau of Statistics (2002), in the ten years between 1990 and 2000 the total number of higher education students rose by 69 percent. This trend has resulted largely from the phenomenon of globalization and the worldwide trend to place great value on the acquisition of the commodity of knowledge. As a result, large numbers of citizens from different social, economic, religious, ethnic, cultural, and other backgrounds are embarking on higher education to obtain such knowledge. As the current Commonwealth Minister for Education, Science and Training, Brendan Nelson, explains, "Globalization, massification of higher education, a revolution in communications and the need for lifelong learning leave Australian universities nowhere to hide from the winds of change" (Department of Education, Science and Training, 2003a, p. 3). Higher education is now an option more and more citizens are choosing as an avenue of lifelong learning.

To ensure a broad range of citizens is eligible for higher education, the Commonwealth of Australia (Department of Education, Science

and Training, 2003a, p. 34) is committed to creating initiatives to guarantee that "there are no barriers to access to higher education for any groups in Australia". As part of the current higher education reforms, the Department of Education, Science and Training, (2003b) announced an increase in funds to support a range of equity initiatives, with specific mention of enabling courses. The potential of these enabling courses in promoting lifelong learning skills is powerful, for programs such as the STEPS program can have a significant impact on learners, who in turn can have significant impacts on the dimensions of which they are part. Higher education represents one of these dimensions.

INTERCONNECTED DIMENSIONS OF CHANGE

Higher education does not exist within a vacuum. It is embroiled in a multidimensional system, as illustrated by figure 1. The inner circle or individual dimension represents the learner, situated at the centre of all dimensions. The next dimension, the institutional dimension, represents the higher-education context of which the learners are a part. The relationship between these two dimensions can be reciprocal, for what happens in one dimension inevitably impacts on the other. The third dimension is the societal dimension, which impacts on and is impacted by, both the individual and institutional dimensions. Bounding all dimensions is the global dimension, which, again, both impacts on and is impacted by the dimensions it bounds.

The cyclical representation indicates that ripples created by change in any one of the dimensions impacts on others in both a forward and reverse direction. Furthermore, change lies both in the interstitial space between the dimensions, and across and within each dimension. The varied directions of the circles indicate both the harmonious and the discordant nature of change. The opposing directions of the circles also imply tension and mismatch, as change has to be grappled with across and within each dimension. The concept of interconnected dimensions illustrates how the lifelong-learning skills of those enrolled in a university preparatory program within a higher-education institution can be impacted on, and how, as a result, they themselves can impact on the dimensions of which they are a part.

THE STEPS PROGRAM AT CQU

The STEPS program at Central Queensland University is a thirteen week, full-time or a twenty-six week part-time program designed to give learners the education, skills, and confidence to embark on tertiary studies. It comprises four components: Language and Learning, Mathematics, Computing for Academic Assignment Writing, and Tertiary Preparation Skills. A great majority of the students who have completed the STEPS program have gained successful entrance to Central Queensland University, while others have moved on to other rewarding careers (Karen Seary, STEPS Coordinator, personal communication, January 17, 2004).

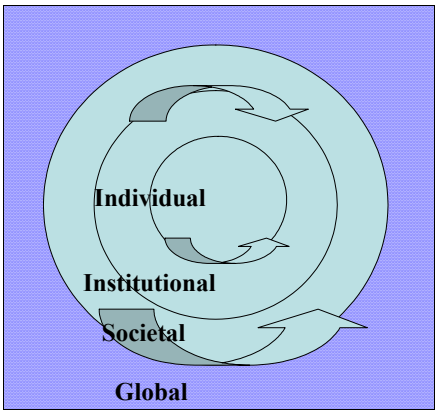

Figure 2. Interconnected dimensions of change[1].

[1] This diagram was developed by the senior author and initially presented at an unpublished colloquium, "The case of perspective transformation" at Central Queensland University, Rockhampton on November 26, 2003.

Recent statistics from the Analysis and Planning Unit at Central Queensland University (2003) indicate that the retention rate for 2002 STEPS students in undergraduate courses at the university was 76.9 percent; comparing favourably with the 48.6 percent apparent retention rate for all undergraduates at Central Queensland University. This posits the STEPS course as a very powerful vehicle for lifelong learning.

However, an effective enabling program such as STEPS does much more than just give students basic skills for university. In these times of change and relative uncertainty, particularly in regard to the nature of future occupations, it becomes increasingly difficult to establish the specific lifelong skills learners need in order to successfully negotiate their paths through higher education and to secure a position in a workforce that will create jobs presently unknown to us. As Ellyard (1998) notes, "the pace of technological and social change means that work skills are made redundant at increasingly fast rates" (p. 71). This places new challenges and pressures on universities as they strive to cater for the needs of their learners. With such a broad cross-section of citizens currently attending universities, each in the pursuit of diverse bodies of knowledge, the need to promote and practise lifelong learning is of great importance to ensure ongoing success and satisfaction in our contemporary society. Therefore, a successful enabling program must do more than teach the rudiments of the academic essay and how to comprehend algebraic fractions. It should aspire to produce self-aware lifelong learners who will take responsibility for their own learning. The STEPS program endeavours to achieve this outcome. Its *Language and Learning* course is underpinned by the tenets of transformative education espoused by Mezirow (2000), the aims of which are to help learners with their comprehension of the meaning of their experiences, understandings, and beliefs; engage in critical reflection of both their own and others' beliefs; and then act on their judgments.

CONSCIOUSNESS RAISING

For students, reflecting on their learning journeys, both during and after the program, is an invaluable part of STEPS. Chaplin (1985, cited in Cranton, 1994, p. 174) shows that consciousness raising, "the process of developing self – knowledge and self – awareness", is one vital part of transformative learning. Hart (1990, cited in Cranton, 1994, p. 173) describes one important condition of consciousness raising as the "acceptance of the importance of personal experience". Students' personal experience is valued highly in the STEPS program and its recounting is encouraged throughout the *Language and Learning* course as adult learners become active learner–researchers into their own learning. Many arrive with good measures of ambition and enthusiasm, with the intention to change their lives in some way. Other STEPS learners tell of disadvantaged backgrounds in terms of lack of opportunities to complete schooling, little financial and moral support to undertake studies, or great personal upheavals. However, these experiences then serve as their introduction to the changing social values of Australian society as, through research, students gain a greater understanding of the interdependence of both their stories and the story of their country as it faces 21st century challenges. Through their engagement in critical reflection throughout the program, most learners achieve a better understanding of the dimensions of which they are a part, and come to appreciate the interconnectivity between these dimensions.

WHO ARE THE STEPS STUDENTS?

STEPS students hail from a variety of backgrounds, bringing with them a wide range of skills, experiences, perspectives, apprehensions, and stories. Many have not completed formal schooling, a large percentage come from low socio-economic backgrounds, and most are the first in their family to actively pursue a university education. Housewives, single mothers, fathers, grandmothers, retrenched workers, people with minor disabilities, people with trade qualifications, some who may have completed degrees many years ago, and those who have more recently finished their secondary education are some of the people represented in a STEPS group. Some bring strongly entrenched views; others are naïve and ignorant of social issues occurring within their world. For some, the STEPS experience is a catharsis; for others it is the mere acquisition of lifelong learning skills to accompany them on their journey through university and beyond. All learners arrive with a story of their lives, and many leave with new stories to tell after completing the STEPS program, recounting how STEPS has impacted on their lives and how, as a result, their lives

have been transformed. They have progressed through various developmental dimensions (Taylor, 2000, pp. 161–162) and can apply much of their learning from STEPS to the next phase of their journey.

TRANSFORMED STUDENT EXPECTATIONS

Student voices that tell stories of transformation are a valued part of STEPS. At the end of each program, and later during their university study, students are invited to take part in focus-group interviews. Kreuger (1988) defines a focus-group interview as a "carefully planned discussion designed to obtain perceptions in a defined area of interest in a permissive, non-threatening environment" (p. 18). Over the years, such discussions have provided the STEPS team with invaluable data, not only on the degree of consciousness raising that takes place in many of these learners during the preparatory program, but also on their successes at university. One theme that comes through strongly from these interviews reflects the changes that occur when student expectations become optimistic. Seligman (1990) shows that pessimists can learn skills to become optimists; in other words, optimism can be learned and can predict academic success (Simpson & Coombes, 2004). Often, students tell of seriously-damaging, lasting effects of their primary or secondary schooling, and this perception is not discredited in STEPS classrooms. Developing optimism in STEPS students is therefore necessary if they are to gain success in future university study. For this reason, to help students gain the expectation that they will be successful in such a challenging program, courses are designed to allow students early successes. An important precursor to consciousness raising is focusing on students' temperament types and learning styles and helping them to acquire the understanding that everyone learns differently. Many speak about how this alone in the first week of STEPS helped them to gain an appreciation that past failures are not insurmountable.

The following student, Sam[2], although academically able, had worked for most of his adult life in a Rockhampton abattoir that had recently closed. He was a young, unemployed, married man with a family, and his future prospects prior to STEPS were decidedly pessimistic.

> …STEPS for me has filled a void in my life…a void where I felt I was ripped off by the education system…outdated methods of a dinosaur type….I thought I had no brains and was never going to make a contribution to society because of my learning experience at school. Got to STEPS and realize, hey, learning's fun! It doesn't only have to be about facts and figures. It's about the whole world around you and how you relate to it and that's exciting and that's what I want to pass on. I want to be an educator and help fix the system that failed me so badly and get into a job where I'm going to be a role model to students. (Student, Sam)

Sam's story did not end there. His parents, after years of running a small business in a country community, were so impressed at the change in Sam's attitudes to learning that his father intended spending some of his retirement years at another Central Queensland University campus, firstly doing STEPS, and then studying for a business degree. At the age of 56, this adult learner was continuing his journey of lifelong learning in an environment that formerly had been beyond his expectations.

Amy is another so-called "failed learner" who shows that, when expectations change in a positive way, university successes can follow. Having been expelled from school at the age of 14 and been a classic 1970s dropout, Amy spent over 30 years believing that she did not have a chance of higher education. After enrolling in various courses over the years and dropping out of all of them, she was concerned that STEPS was going to become yet another failed project.

> I wasn't to know that STEPS would start me on a journey, not only into the academic world, but also into a world of self-discovery. STEPS taught me that my life experience is my most valuable asset and that my prior knowledge is a considerable resource at my disposal. Another equally important lesson gained during STEPS is that I now understand my own learning style. I realise why I failed at school.
>
> I count STEPS far more valuable than the high school education I missed.

[2] Pseudonyms have been used for the student respondents in this article.

> University can be an overwhelming experience, but when you enter a bridging course believing that you're an academic failure and nearly three years later find yourself with a grade point average of 6.429 you know that you were given more than adequate skills to achieve success. I am very grateful that I was accepted into the STEPS program and that I was taught by people who could see in me what I couldn't see myself. (Student, Amy)

HEALING NATURE OF ADULT LEARNING

Many students tell stories of healing that has come from the consciousness-raising nature of some STEPS courses. Many enter the program in fear, with learning blocks from past negative encounters, and the program undertakes to change damaging perceptions. Parker Palmer (2001) is an American educator who writes about "the violence of our knowledge" (n. p.) because he believes that the Western adherence to objectivity has created disconnectedness in education. He writes in *The courage to teach* (Palmer, 1998),

> The mode of knowing that dominated education creates disconnections between teachers, their subjects and their students because it is rooted in fear. This mode, called *objectivism*, portrays truth as something we can achieve only by disconnecting ourselves, physically and emotionally, from the thing we want to know. (p. 51)

Palmer believes that teaching must heal rather than wound, and echoes the belief that learning is "enhanced by teachers and pedagogies that pay attention to the inner life of students" (n. p.). The *Language and Learning* course of the STEPS program, through encouraging reflexivity as well as an academic appraisal of the changing social values in Australian society, aims to create a balance between subjective and objective modes of thinking. Many students will attest to the effectiveness of this approach.

John had spent his life as a farmer and came to academic lifelong learning to fulfill an ambition that he never believed would be achieved. Today, at the age of 64, almost at the end of a double Business/Arts degree and hoping to study for his masters, he comes to each STEPS testing to speak to new applicants about the program and sometimes tells them about the time when life was so bleak that he tasted the oil from the gun he had put into his mouth. Soon after this episode, he found his way to the STEPS program, but the language course challenged so many of his old worldviews that he strongly resisted the new ways of thinking that were being opened up to him. However, he stayed. The healing was just beginning.

> I hated it when we left the farm and came to Rockhampton. I hated school. I hated the teachers…. Why with my hatred of teachers I wanted to go to university at the age of 60 is a story in itself…. Looking back on it, it is difficult to say just what it was about changing gender roles that I took exception to, but I did. Sometimes my face felt really hot, as I had to sit in class and listen. I wouldn't take part in class discussions…. Once again I hated…. Looking back, I clearly came to understand what they were trying to tell me…. Somewhere and sometime, I changed. (Student, John)

POSITIVE WINDS OF CHANGE AND LIFELONG LEARNING

Through this preparatory program, STEPS students can gain an understanding of the interconnectedness and positive nature of change. There are countless stories that could be related, and a great many are inspiring, especially those from the failed learners of the past. However, numerous student testimonies over the years have shown that the greatest STEPS successes come from the program's affirming, learner-centred nature. Acknowledging the lived experiences of its students, the STEPS curriculum is one that both actively encourages reflective practices and celebrates change. For post-modern Australians, many of whom have seen themselves as victims, a broader understanding of worldviews can be a very powerful and transforming catalyst for change. Such change can impact across the interconnected dimensions and both energise and motivate adult learners to continue in their quest for lifelong learning.

CONCLUSION

Rapid changes in contemporary Australian society have created new clientele for higher education. As the Commonwealth Government pledges commitment to the creation of a more

equitable share of higher-education places, and the demand for the acquisition of knowledge continues, a far broader range of citizens than ever before is embarking on higher education. Many adults fear this huge transition, highlighting the valuable role that enabling programs and their curriculums can play not only in providing the knowledge of academic skills for a successful university experience, but also in promoting a greater consciousness of the interconnectedness of change. As we transform, we contribute to the transformation of all the systems of which we are a part – from families, workplaces, and communities to our country and the very planet itself (Pearson 1998). Many STEPS students, like William, are part of that change.

> If I look at my life seven years ago I never dreamed I'd be able to go to university. From my background, it seemed that only rich people went to university – the people that had a decent sort of education – whereas my family had no striving whatsoever to better themselves in that vein at all. So generations to come are going to be changed because of my involvement with the STEPS program. (Student, William)

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TALKING THE WALK: TRANSFORMING A LEARNING COMMUNITY AT MACKAY CHRISTIAN COLLEGE

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ABSTRACT

Teachers at Mackay Christian College have forged a passion for professional learning, and a meta-language which informs daily conversations. Through clear values and metaphors, we can "talk the walk" and learn together. The development of a professional discourse that has shared meaning has created an environment within which the transformation to a learning organization is becoming a reality.

INTRODUCTION

This paper looks at part of the journey of one school, Mackay Christian College, as the staff and students seek to become a learning community. In particular, the discovery of the value of developing a common language with true, shared meaning, and the contribution to the journey it made, are explored. Following a short background to the college and a brief explanation of the development of its curriculum and pedagogical models, the transformation of the college into a learning community through the creation of a professional discourse is discussed.

The rapidly changing nature of postmodern society has drawn educators into the new reality of lifelong learning. Educators must continually adapt and learn, and change their practice, if they are to remain relevant, valued, and essential to the success of society. At Mackay Christian College, our learning culture is being transformed. We have forged a passion for professional learning, a vision for students as lifelong learners, and a meta-language that informs the daily conversations about learning. Through our clearly-articulated values and metaphors, we can "talk the walk" and learn together. The development of a common language, within which professional discourse has shared meaning, has created a learning environment in which the "resistance-to-change" factor is being transformed to a "learning-is-lifelong" attitude.

BACKGROUND

At MCC the staff, students and parents know what we value, what our vision for our students is, and we can all tell you about it. A shared set of values was developed over five years ago as a result of the three-year strategic planning process that involves mainly the staff and the college board members. The original ten values were synthesised by the principal, to five, after some spot checks revealed that the staff, students and parents did not know what the ten values were. The acronym CLEAR was introduced by the principal as a mechanism to assist people to remember the values. They are, Christlikeness, Learning, Excellence, Attitude, and Respect. Thus at MCC our values are CLEAR. With this change, the values quickly became part of the college culture, and was the starting point for staff and school leaders talking together about the meaning and purpose of our work as educators.

As a Christian College, the staff, through the employment policies and processes, already share a common foundation of values and beliefs. Several vigorous and open discussions with large and small groups of staff served to tease these out to the set of values that were truly shared. The college executive then sought to model the use of these values in their daily language. Teachers referred to them in classroom and playground situations, posters declared them in every nook and cranny of the college, and the senior staff used them in formal situations such as assemblies. Two years ago the college's strategic plan was reviewed and the new plan was written in terms of the CLEAR values. The staff handbook and other college documentation were also rewritten in a values-based format, to provide alignment with these values. The values describe both how we conduct ourselves while members of the college, and the qualities of character that will be needed by students when they leave our school to participate in complex life roles.

These values have also been used to create our "vision of a learner", our values-based "purposeful pedagogy", and a "professional

learning framework" for teachers, which focuses on continuous improvement. The college's vision of a learner is a description of what we envision a graduate of the college to look like at age 35 or 40. (We picked these ages arbitrarily as opposed to trying to assess the success of a school when the graduates are seventeen years old or eighteen years old. We believe that the input of a school has significant influence and impact on a person's life for years after they have finished year twelve). Our purposeful pedagogy addresses what a teacher should look like in relationship to a student in order to successfully achieve the outcomes of our vision of a learner. The professional learning framework provides scaffolding for teachers to reflect on their professional practice and to plan for improvement. These scaffolds have extended our professional discourse and learning, while further clarifying the common understanding of the values they are all based on, and our role as lifelong educators.

Through these commonly-held values, and their use in whole school constructs, we are empowering teachers and students with self knowledge and ways of talking about their learning that is changing schooling from "secret teachers' business" to a learning journey authored and enjoyed by individuals. The teaching staff of the college have reflected to the authors that they believe that our journey to create a lifelong-learning discourse and to become educators who are lifelong learners and a part of a learning community, has resulted in a clarification – perhaps even a reformation – of our identity as educators.

OUR JOURNEY

"Talking the walk" or, in this case, shared discourse about how we teach and learn at Mackay Christian College, has been an important agent of change in our school's transformation into a learning community. The very first step in our journey was overcoming our teachers' traditional attitudes of resistance to change. The members of the college executive (the principal and the directors of studies, primary and secondary) had all expressed some degree of frustration at the degree of resistance to change they had experienced in many members of the teaching staff. In the early 1909s the principal attempted to lead a school-wide change in curriculum and pedagogy. This failed. Analysis of the failure by the college executive – through surveys, meeting debriefs and observation – led to the conclusion that the college had a culture that was in itself resistant to change. As a result of this experience, the principal adopted the strategy of moving the college from being resistant to change to one in which learning opportunities are actively pursued and shared by staff. The result has been an openness to learning and change.

At the heart of the professional learning community metaphor is the premise that "effective schools are created by effective people, improving schools are created by improving people, and learning cultures are created by people learning" (West-Burnham, Bradbury, & O'Neill, 2001, p. 23). The desire of the college executive was that MCC become a professional learning community – which included the teaching staff – within the culture of lifelong learning, so that school became "a safe place where the gifts and strengths of each individual (teacher and student) could be maximized, where authorship could occur, and where individuals could work together with others, developing their emotional intelligence and finding meaning in what they created" (Beerens, 2000, p. 22). Initially, the main mechanisms used by the College Executive to move the staff towards a sense of shared meaning and community included staff meetings, faculty meetings, across year-level team-based planning sessions, and the daily morning prayer and reflection meetings. As time progressed, these were expanded to include activities involving parents and students as well as the staff. These included assemblies, chapel services, awards (speech) nights, and other regular school events. Gradually the language of the shared values of the college began to be a part of the way in which teachers spoke to each other and to their students on a daily basis. Values-based expressions have become a normal part of the behaviour-management approach of the college. For example, "When you speak to her in that way are you showing respect? We value respect at MCC"; and "You need to check your attitude. We value a positive attitude at MCC." Our experience in the journey to becoming a professional learning community has shown us that through the creation of a purposeful, shared, sense of community, the daily work of teaching has deeper meaning, and so increases "personal identity, motivation and empowerment…because people are willing to thoroughly invest themselves in their work" (Schwahn & Spady, 2001, p. 80).

The college executive included staff in its understanding that learning is the currency of power in our knowledge-based society and that teachers, as knowledge workers, have a leading role in the evolution of our knowledge-based society (Crowther, Hann, & Andrews, 2002, p. 10). Not only can schools prepare and shape a future world for students, but also the culture of a professional learning community has the potential to improve the quality and productivity of teachers' work, thereby improving immediate student learning outcomes. For example, our experience has been that when students and teachers become co-learners in the classroom, the level of engagement in learning increases. The ownership of the learning process is shared between the participants in ways that improve the quality of the learning outcomes. As an extension of the work described in this paper the college executive has begun an action-research project in which staff are participating in a variety of professional-development activities and becoming the leaders of learning when they report back to the whole staff about their learning experiences. Included in these professional-development activities are opportunities for participation in small, focused, staff discussion groups, and opportunities to "work shadow" other staff members and establish peer-coaching relationships. It is a strategic decision to invest in staff learning in a state-wide educational political climate which is not as financially supportive of these activities as it once was and yet places even more demand on already-stretched human resources. The college executive is determined to put its money where its mouth is when it purports to see the college's human resources as its most important resources.

Building a professional learning community occurs when the leadership intentionally shapes a school culture and creates shared meaning. As Addelson explains, learning is the process by which individuals actively interpret their world and that as such, organizational learning is a metaphor rather than a single, all-embracing reality (Addelson, 1996, p. 34). School is not the same reality for each teacher. In fact, according to Gray (1998, p. 143), the perceptions of individual teachers could lead to the claim that each member belongs to a different organization because experiences of "the same" are different. An example might occur at a staff meeting. Although every teacher is at the same meeting, everyone experiences the meeting in different ways. There was evidence of this occurring at MCC in the variety of meanings that staff from different levels of the college took from the meetings – in memos and newsletters. Members of the college's middle management expressed frustration at the time taken in meetings to clarify what a statement meant. Gray (1988) poses the question "if each individual has a different experience of a school, how can the school function when interests differ?" (p. 144) An answer lies in the creation of a common language with which negotiations and conflict resolution can occur and relationships can develop. A strong sense of purpose, as expressed in a shared vision, cannot be developed unless the members of the organization all interpret the words used to delineate the vision in the same way. Discussions centered around discovery of common meaning often result in individuals saying "Ah, now I see." This, as Gray (1988) explains (p. 152), invariably means that the individual now sees the situation or organization differently. The college's three-year strategic planning process, during which teachers established the priorities of the college in terms of our values for the next three years, proved to be key in facilitating the process of developing shared meaning. Without the establishment of common meaning, productive professional discourse is severely hampered and may not occur at all, or the professional isolation for teachers may be encouraged. On the other hand, the establishment of clear, common meaning promotes productive professional conversations. By keeping in mind this common understanding, leaders and teachers are able to filter and prioritise actions when faced with dilemmas requiring action or direction.

Common features of the metaphors of professional learning communities are a shared sense of purpose and values between the community members (in the context of MCC this means the staff, students, and parents); norms of continuous learning and improvement; a commitment to and sense of responsibility for the learning of all students; collaborative, collegial relationships; and opportunities for staff reflection, collective inquiry, and the sharing of personal practice (Taylor, 2002, p. 42). We have seen these features become the norm in our school. However, the traditional isolation of teachers, and the resultant loss of community, has worked against attempts to develop a professional learning community within the school context.

Traditionally, teachers spend much of their professional lives isolated from their colleagues, and this has resonance with the type of work Segil (2002) sees as part of our post-industrial world, where "knowledge workers don't want to be lead as much as they want to be self led – namely to be given the vision and the tools, then connected to a network and left alone" (p. 17). The growth of MCC had led to the establishment of a variety of teacher and staff preparation rooms that are spread widely, geographically, throughout the college. While the college is a P-12 school there had been a structural drifting apart of the primary and secondary sections due to all sorts of administrative imperatives such as different toilets, the building of secondary specialist areas, and the location of playground equipment. These are examples of some of the things that had in the past led to a degree of professional isolationism emerging at MCC. Limerick, Cunnington and Crowther (1998) believe that the "post corporate age has accentuated both loss of community and the social function of the workplace" (p. 199).

At MCC we believe the social side of work, including fun, adventure, challenge, and fellowship, make for a meaningful work environment and optimum performance (West-Burnham, et al., 2001, p. 20). One of the ways we have achieved this is through careful planning of staff meetings and professional-development activities so that they are built around fun and humour. While there are other formal and structured ways we have sought to bring this about (such as the staff social club, small prayer groups supporting each other, secret-Santa type activities, and encouraging notes), we have found that the informal, unstructured side of the interactions between staff has been of equal, if not more, importance in building meaning in the day-to-day life of teaching and learning. We have seen evidence of this in the secure way in which staff members are able to express their opinions – even if they disagree with the college leadership. There is further evidence of it in the warmth of relationships, support when one is unwell, flowers for a new baby, and the humour that flows between staff members. The biggest clue that this formal and informal relationship focus has assisted us to build common meaning has been the lack of isolation between sections of the college such as primary and secondary. It is the "community" in a learning community. According to West-Burnham et al., (2001) culture is empowering, and a change-friendly culture promotes "personal initiative, improved performance, and organisational effectiveness, openly encourages new ideas and lasting organisational health" (Schwahn & Spady, 2001, p. 77). It is this type of change-friendly culture that the college executive sought to bring about at Mackay Christian College.

Our experience at MCC has been that a professional learning community changes the traditional command and control structure and culture of a school staff to that of collaborative individualism, where individuals are "mature, autonomous, proactive individuals who collaborate to achieve personal and organisational goals" (Limerick, et al., 1998, p. 106). Hindsight has enabled the college executive to see that the leadership structure of the college prior to starting the journey towards becoming a professional learning community was more like the traditional command and control structure than the culture of collaboration. This has provided a degree of insight into why the principal's early attempts at school-wide change failed. School change has now become a collaborative effort, and talking though change is our first step. We have built up teams of teachers who work together, and who value the work that they do. More staff are involved in college-sponsored, professional learning than ever before, and they are showing leadership in sharing their learning with others. This has changed our traditional hierarchical culture to become one that is much less predictable and linear, but it is more dynamic and is experiencing greater growth. By focusing on staff professionalism, engagement, initiative, and learning for continuous improvement, and continuing to build a supportive community culture, we have increased our potential to improve the quality and productivity of teachers' work and the quality of student learning outcomes. This pattern of collaborative individualism is biblically relevant and culturally timely.

A key step in communicating this change in expectation and roles for teachers, has been through the power of a metaphor, as "language is one of the most significant expressions of culture and the use of …metaphors is an important reinforcing factor" (West-Burnham et al., 2001, p. 19). We have adopted Paul's metaphor of the body in Romans 12, "…in Christ we who are many form one body, and each member belongs to all the others" (Holy Bible, (1985), Romans 12, Verses 4-5). This

metaphor of mutual interdependence is preceded by an exhortation to "be transformed by the renewing of your mind" (verse 2). This is an ideal metaphor for our college professional learning community, with its emphasis on diversity of functions, feeling of connectedness, emphasis on learning, and resonance with existing college metaphors in our vision of a learner and our purposeful pedagogical model, LeRACE. We foster this valuing of the contributions of all members of our college 'body', by celebrating and rewarding positive contributions of all kinds, making time for informal collaborative networks and relationships (Leonard & Leonard, 1999), using discourse to build understanding (Addelson, 1996), and encouraging attitudes of mutual respect. We look for opportunities to create value in the intangibles such as "recognition, achievement, engagement, autonomy, growth, learning, fulfilment and engagement with the higher order purposes of education" (p. 25).

As part of our journey we have discovered the benefits of empowering others by involving them in the decision-making processes, and casting new ideas as hypotheses to be tested rather than directives being handed out (Lashway, 1998.) The balance between teacher autonomy and responsibility for accountable leadership is preserved by providing clear parameters to staff, and filtering decisions against the question, "is this action or behaviour consistent with our vision and values?" (DuFour 1999). We empower through rewarding positive contributions such as winning, risk taking, losing and learning, committing fully in team efforts, doing it on time with quality and a smile, and even challenging the status quo. Rewards are recognition, advancement, freedom, responsibility, "attagirls" and "attaboys", influence, or dollars, depending on the staff member, their contribution, and our budget (Schwahn et al., 2001, pp. 116-7). We have sponsored higher-education courses for staff, and we are seeking to work in partnership with a local university so that our staff members who need to upgrade qualifications can engage in action-learning projects that benefit our college, model the professional practice of reflective learning we wish to encourage, and benefit the individual teacher with the professional qualifications he or she needs. Learning is becoming a collaborative, goal-oriented task rather than a generalised desire to stay current (Lashway, 1998).

CONCLUSION

At Mackay Christian College, we are continuing to reach for our vision of "becoming all God wants us to be", this "becoming" is all about learning and improving. The reflections of members of the staff of Mackay Christian College indicate that through the creation of a purposeful, shared sense of learning community, based on the development of a professional language with real, shared meaning, the daily work of teaching has a deeper meaning, and so is increasing "personal identity, motivation and empowerment… because people are willing to thoroughly invest themselves in their work" (Schwahn et al., 2001, p. 80). There is an excitement and synergy among staff members that is already leading to staff-initiated plans to involve students in the same excitement about learning. Through our pastoral-care curriculum, we are developing a common language for students – based on the habits of mind – for successful lifelong learning. A staff team is currently developing curriculum structures such as our Electronic Learning Portfolios for grades 7 to 9 that will involve students in the culture of "talking the walk."

We want every student and staff member to be able to say "I know how I learn best, what I am learning, and why I am learning it. I can see by looking around me that what we talk about is true….Learning is for everyone. Learning is transforming. Learning is for life."

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WHEN LIFELONG LEARNING ISN'T ENOUGH: THE IMPORTANCE OF INDIVIDUAL AND ORGANISATIONAL UNLEARNING

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ABSTRACT

As organizations increasingly strive to maximise the utility of their human capital, many encourage lifelong learning, and some have adopted formal knowledge-management strategies. There is an ever-growing body of research relating to organizational learning and knowledge-management (Easterby-Smith, Burgoyne, & Araujo, 1999; Markoczy, 1994; Nonaka, 1994; Starbuck, 1996), particularly since the transition to the "knowledge era". There has been more recent focus on the topic of unlearning both at an individual and organizational level. It is proposed in this paper that these four concepts are interrelated, and a model for linking these is put forward.

INTRODUCTION

Organizations need to develop specific capabilities to remain competitive. As the business environment is not static, a successful company must be dynamic and ready to change and re-orient core competencies in order to deal with new environmental challenges, utilizing dynamic organizational capabilities (Teece, Pisano, & Shuen, 1997). An organization's competitive position stems from its internal capabilities (Amit & Schoemaker, 1993). Knowledge-based resources are characterised by "uncertain imitability" (Lippman & Rumelt, 1982), which renders them relatively unprotected from imitation, so that competitors can develop similar or even superior knowledge-based resources. Such imitation normally takes time and organizations with superior knowledge-based resources can develop their own assets further by engaging in ongoing learning (Miller & Shamsie, 1996). In seeking to develop a culture and commitment to learning and change there needs to be a focus on a firm's capability to renew its managerial competencies and to create radically new competencies in order to "… achieve congruence with the changing business environment" (Teece et al., 1997, p. 515). In facing dynamic market requirements and new competitive situations, learning processes can affect the capability to reconfigure and transform a firm's assets and competencies.

However, simple learning, and developing new competencies and capabilities, is not enough, as Hedberg (1981) argues

> There is too much waste of human resource, capital, knowledge, and enthusiasm in letting organizations develop with learning abilities only. Such organizations build walls around them, and grow defensive. They become insensitive to signals from the environment, and they accumulate so many resources that they cannot afford to move when times are changing. That is why abilities for learning, unlearning, and relearning must be equally developed. To learn, unlearn, and relearn is the organizational walk: development comes to an end when one of these legs is missing. (p. 23)

Therefore, this paper identifies links between individual and organizational learning, and the importance of unlearning in this process, in order to ensure that lifelong learning remains an organizational priority.

ORGANIZATION AND INDIVIDUAL LEARNING

Learning in an individual, collective, or organizational sense does not occur in isolation. Rather it occurs within the constraints of both the internal and external environment, and not all environments are conducive to or supportive of learning. In addition, there is a growing argument that focusing on learning alone will not allow for lasting individual or organizational growth and change; the key purpose of encouraging lifelong learning. Many researchers have identified factors which inhibit individual and organizational learning; one of the significant issues being the interference of previous learning, knowledge, and skills (Baxter, 2000). Rather than just focusing on how to provide new skills, it has been shown that prior to, or at least simultaneously, old knowledge and skills must be challenged and unlearnt.

In order to show this link between individual learning and unlearning, and organizational learning and unlearning, as well as the impact of the internal and external environments, a model is proposed in Figure 1.

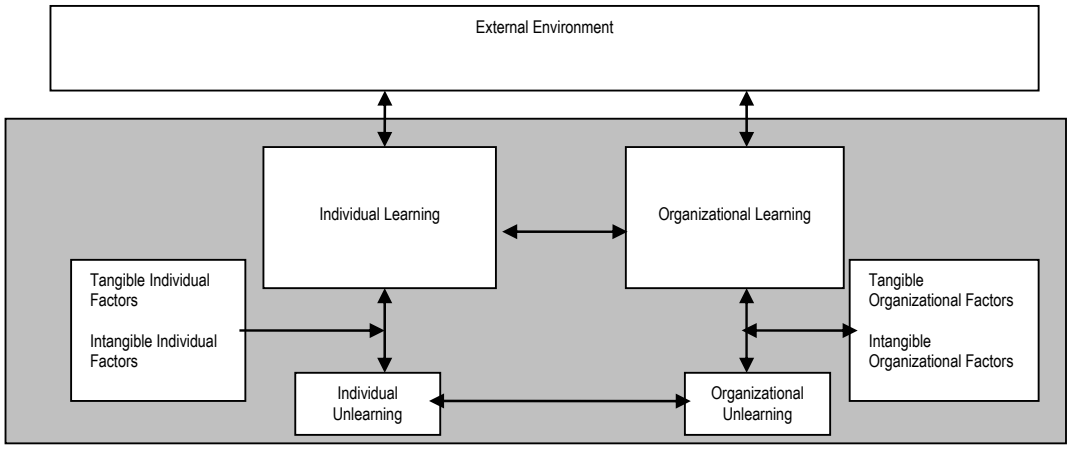

Figure 1. Model of individual and organizational learning and unlearning.

This model proposes that the concept of unlearning at both an individual and organizational level plays a part in the overall learning that occurs. However, it also recognises that a number of factors relating to both individuals and organizations will have an impact on the ability to learn. Finally, it proposes that the external environment in which an organization operates will also have an impact on the amount and significance of the learning that takes place at both the individual and organizational level. It is the purpose of this paper to establish and clarify the links between these four areas of individual and organizational learning and unlearning, and to examine the impact of both internal and external factors on this relationship.

INDIVIDUAL LEARNING AND UNLEARNING

The importance of learning, not only for individuals, but also for the organization in which they work, has long been recognised as a crucial factor in organizational strategy and sustainability (Anderson & Boocock, 2002;

Senge, 1990). Knowles (1970) became a renowned researcher in the field of adult learning by putting forward a number of arguments about the need to recognise the difference between child and adult learners. As a result, the term "andragogy" became utilised to describe an orientation focused on the particular characteristics of adult learners. Knowles (1980) suggested that adult learners should be encouraged to be self directed, that their experience in the learning situation should be viewed as valuable, that they will be ready to learn when they see a need for such knowledge and that they will view learning not as simply content matter, but as a means for self-development and fulfilment. Therefore, it is crucial that those in organizations responsible for encouraging a focus on lifelong learning understand these principles. However, with the valuing of previous experience comes a more recently identified issue: that of unlearning, and the problem of identifying when it is in fact valuable, and when it is an impediment to further development.

As opposed to the area of adult learning, the topic of unlearning has received much less consideration. Many researchers previously have inferred the existence of issues relating to the interference of prior learning in the learning process, even if they have not referred to unlearning as such; as Anderson and Boocock (2002) state:

> Learning arises out of the tension between 'new' knowledge and the 'old' knowledge stored in the memory of an individual. In this context learning occurs when concepts, frameworks and capabilities are created or redeveloped in the light of knowledge that is new to the individual.

It can be argued that the need to consider the impact of prior learning on the process of learning is crucial to ensuring effective lifelong learning. If individuals are not able to successfully unlearn past skills, knowledge, or frames of reference that no longer apply, then they will be less likely to embrace new ways of working.

There are some key researchers who have proposed models in relation to unlearning. Hedberg (1981) suggests that new knowledge simply replaces old knowledge as an individual learns more. It is also reinforced that this process is not the same as forgetting where information is lost regardless of its usefulness. Hedberg (1981) sees the two processes as happening simultaneously, proposing that knowledge both increases and becomes obsolete, or is discarded as the situation changes. This discarding activity is often referred to as unlearning and it is seen to be as crucial as gaining new knowledge. In contrast, Klein (1989) put forward a parenthetic model of unlearning suggesting that the old knowledge is not erased, but maintained (in parentheses as it were) for situations where an individual believes the new knowledge does not apply. In this sense, it is being argued that the context of application of particular skills and knowledge is a key factor.

In the model proposed in Figure 1, it is assumed that individual unlearning is connected to individual learning. Klein (1989) also explains this in terms of understanding unlearning, not as a concept in its own right, but as part of an ongoing process of change, development, and learning. It has been identified that in many cases, prior learning can in fact inhibit the acquisition of new knowledge and skills (Baxter, 2000). Work in this area refers to proactive inhibition, or "the brain mechanism responsible for maintaining and preserving everything we know… a case of the old interfering with the new…" (p. 13). Therefore, it is argued that rather than simply focus on individuals and their learning in an organizational context, there must also be a focus on assisting individuals to recognise and overcome the restraints placed upon them by prior learning and knowledge. The literature relating to individual transition and change often refers to this important step of acknowledgement and release of previous mental models and theories of action (Bridges, 1991; Conner, 1992)

Therefore, the two areas of learning and unlearning at an individual level cannot be viewed separately. In certain circumstances, unlearning will be more or less important to the overall goal of learning and development. For example, when skills, behaviour and mental models are long-held and have been positively reinforced for a long period of time, then the stage in the learning process of unlearning will be more important.

Many examples of the importance of individual unlearning can been seen when observing organizations (and often entire industries) undergoing change. Heavy industry within

Australia has experienced many challenges in ensuring all individuals focus sufficiently on workplace health and safety issues. In many cases, it is those with the most experience who are seen to disregard new safety directives in favour of the practices with which they are familiar. In this sense then, those people in an organization who may be considered experts, may well present the greatest challenge in terms of ensuring that unlearning occurs.

MODERATING FACTORS AT AN INDIVIDUAL LEVEL

Learning and unlearning at an individual level however, does not occur in isolation. There are a number of moderating factors that can impact either positively or negatively on the amount and depth of learning and unlearning that occurs in individuals. These can be broken into two categories; tangible and intangible factors. Whilst there is a great deal of literature on most of these factors, the extent of the impact on unlearning remains to be established.

Tangible factors impacting learning and unlearning in individuals are relatively easy to identify and to measure, and therefore, it can be assumed, easier to address. In particular, these may include the explicit knowledge, experience, education, training, and qualifications of the individual. Researchers in the area of knowledge management (Newell, Robertson, Scarbrough, & Swan, 2002; Nonaka & Takeuchi, 1995; Roy & Roy, 2002) have identified the difference between explicit and tacit knowledge and suggest the former refers to easily-expressed and easily-documented knowledge or information. Therefore, this type of knowledge is generally found in organizational procedures and processes, and it could be assumed that even though this knowledge has the potential to impact on the learning and unlearning process, the more fully it is articulated, the more easily it is addressed. In the same sense, the background, education, and formal training that an individual brings to the learning (and unlearning) process will impact on personal theories of action and frameworks that may no longer apply.

Alternately, intangible factors in learning and unlearning relate to issues less able to be measured or easily examined, and therefore are less likely to be able to be observed in relation to the learning and unlearning process and subsequently addressed. Their impact on the process of learning and unlearning, however, is nonetheless substantial. These factors may include issues such as the tacit knowledge of the individual, personality, attitudes, beliefs, individual capacity to learn and unlearn, and learning styles. Tacit (or implicit) knowledge, relates to information not easily explained or documented, and is often referred to as know-how (Newell et al., 2002). Importantly, it is this tacit knowledge that often makes the difference between an average and an excellent employee – not necessarily what they do, but how they do it. Newell et al. (2002) suggest there are a number of reasons why this tacit knowledge is not easily explained or documented. However, regardless of the reason, it is clear that if an individual is unable to articulate knowledge that has the potential to impact on the learning and unlearning processes, it will be far more difficult to address than if the knowledge were explicit. Likewise, individual ability, personality, and learning styles - and social and cultural factors - have the potential to impact upon the quality and quantity of both learning and unlearning, as they determine the individual's outlook on personal change and development.

ORGANIZATIONAL LEARNING AND UNLEARNING

As well as developing our understanding of individual learning and unlearning in the workplace, it is also important to consider organizational learning and unlearning. It has been proven that in addition to the learning and development in individuals, organizations as a collective also have the ability to learn – to an extent that is well beyond the reach of any one individual. (Appelbaum & Gallagher, 2000; Nonaka & Takeuchi, 1995) This means that long after old ways of operating and acting as a collective are applicable, some organizations continue to allow their internal systems and processes to reinforce these approaches.

Easterby-Smith (1997) argues that learning is crucial in building competitive advantage and as such the organization should be concerned with building learning competencies. In studying organizational learning, Senge (1990), Huber (1991), Walsh and Ungson (1991), and Nonaka and Takeuchi (1995) maintain that there are several elements defining organizational learning: the creation (and change) of shared mental models; a constant process of alignment with their environment taking place in complex and dynamic processes involving the creation,

processing, transfer, and storage of implicit and explicit knowledge throughout the organization; and finally; is goal-directed. Most importantly, these definitions highlight the concept of shared mental models, or theories of action operating in a dynamic environment.

So organizational learning is an iterative ongoing process that takes place through the life cycle of an organization. Stakeholders within an organization need to continually update their knowledge and skills through learning if they are to contribute effectively to organizational learning. In this way organizational learning becomes lifelong learning for both individuals and the organization. However, just as learning is only one part of the equation for the individual, this will also be the case at an organizational level. If organizational learning involves the creation and change of shared mental models, then unlearning will remain a key priority. Unlearning in an organizational sense therefore, will involve the replacement or updating of these models in order to ensure that individuals and the organization as a whole does not revert to old ways of operating.

Both Hedberg (1981) and Klein (1989) have identified models to explain how unlearning occurs. These are no less applicable at an organizational level as at the individual level. In fact, it is claimed that the lack of ability to engage in unlearning at the collective level is a "crucial weakness of many organizations." (Hedberg, 1981, p. 3) Again, this will mean that both learning and unlearning at the organizational level are closely linked. In some cases the organization may see the need for radical unlearning, if the behaviours are too tightly ingrained and are to the detriment of the organization as a whole. In situations such as this, management may make the decision to outsource a function such as maintenance (see Hyland, Sloan, & Barnett, 1998) and so the maintenance capability is unlearned in the organization. Management needs to be able to judge whether radical or incremental unlearning is required.

MODERATING FACTORS AT AN ORGANIZATIONAL LEVEL

Just as learning and unlearning at an individual level are impacted by external factors, so too are learning and unlearning at an organizational level. Many writers (Delahaye, 2000; Stacey, 2003) in the area have referred to the existence of both tangible and intangible factors – referred to as the *legitimate* and *shadow* systems operating within an organization. It is argued that both these systems have the capacity to either encourage or discourage both learning and unlearning at the organizational and individual levels.

Within the legitimate system, organizational policies, structures, procedures, practices, and processes are embedded with organizational theories of action and particular frames of reference. For example, policies and procedures are developed within organizations to encourage and reinforce particular behaviours. When these behaviours no longer contribute to the ongoing development and sustainability of the organization, they become a hindrance, and even if individuals are able to learn, the existence of old ways of operating will impact on the behaviour of any single individual. Therefore, it is imperative that the legitimate system keeps pace with the learning occurring within the organization. Failure to do so will hinder the process of unlearning.

In addition, intangible factors (i.e. the shadow system) within the organization are not as overt, but still play a large part in either assisting or hindering learning and unlearning at both the collective and individual level. Organisational culture, power, and politics, and organizational filters and theories of action, are all difficult concepts to measure in a practical sense but are no less an influential on the ability of the organization to unlearn. In the shadow system, informal structures and a culture emerge that either encourage individuals to question current ways of thinking and to challenge the status quo; or they send a message of compliance and acceptance of current organizational procedures and processes.

THE EXTERNAL ENVIRONMENT AND ITS IMPACT ON LEARNING

It has been argued that the external environment and the organization will have direct impacts on one another (Buckler, 1997). That is, the environment in which an organization operates will directly impact on strategies within the organization, and the actions of the organization itself also has the potential to impact on the external environment in which it operates. A wide variety of social and cultural pressures, as well as market forces, are having an impact upon organizations and the amount of learning

required to remain sustainable. At present, markets are experiencing the internationalisation of technology-driven competition, globalization of manufacturing due to faster transitional flows of materials and money, compression of product life cycles, the need for greater integration of technologies, and increasingly sophisticated customers (Shepard & Ahmed, 2000). These challenges have inevitably resulted in many organizations turning to innovative measures and strategies.

Thomas (1993) in a study of industrial policies in ten nations, concluded that a very demanding external environment can be conducive to innovation. Further, Afuah (1998) argues that factors such as natural resources, skilled labour, capital, universities and private research laboratories (which are a supply of scientific, technological and market knowledge), can be sources of local advantage. Supported by such a platform of excellence, new ideas can be nurtured into products and services. The nature of the local demand for products and services reflect the local firm's ability to innovate, and some studies of regional clusters have shown a common pattern of smaller innovative firms clustering around a larger client with extended market reach. Customer needs, preferences, and expectations should be broadly articulated to organizations and provide some focus for them in their innovative thinking. In addition, suppliers can be critical in generating new product or service ideas, and supporting them through subsequent development and commercialisation. Local rivalry can improve the ability of firms to innovate. Firms may pick up knowledge from each other, and build on it to improve and survive; with this leading to more innovative ideas. Finally, government policies in most countries assist organizations to innovate through funding, assistance, consultancy, and other policies.

DISCUSSION AND CONCLUSION

The model put forward in Figure 1 can be validated by a wide range of works. The model however, draws together some of the work on organizational and individual learning in a different way that provides some understanding of the need and effects of unlearning. As organizations seek to survive in an increasingly turbulent environment, managers need to be aware of both the past and the future. In understanding the past they will understand the basis of the existing organizational culture and perhaps some of the sub-cultures. If they can understand how the culture has evolved, they will recognise that for effective long-term learning both individuals and the organization as whole needs to unlearn. Many managers seeking to be competitive and innovative have sought to introduce new cultures into the organizations they manage. Those who fail to recognise the need to discard the past and ensure most if not all the old ways of surviving and succeeding have been expunged will have to invest massive amounts of time and effort in re-enforcing the new ways. However, re-enforcing the new ways is not sufficient, as many organizations have found out, if they cannot de-program the old habits of individuals then as they have done in the past they will have to rid the organization of the individuals.

Links have been established between the concepts of individual and organizational learning and unlearning. In addition, it is clear that there exist a number of internal and external factors that impact upon the individual and organization's ability to unlearn. Exactly how and when in the overall process of learning, unlearning occurs, still requires further research. In addition, it will be imperative for future research to focus more heavily upon the relative impact of moderating factors on the process of unlearning in particular. In essence, it is important for those encouraging and promoting lifelong learning to understand the nature and strength of the links between unlearning and learning at both the individual and organizational level. By understanding the process of unlearning at both the individual and organizational level, and the factors that can assist and hinder the process, it is possible that organizations embarking on organizational change initiatives will do so armed with the ability to instil in both individuals and the organization a focus on lifelong learning.

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ENHANCING GRADUATE ATTRIBUTES: MECHANISMS FOR FACILITATING THE TRANSFER OF ACADEMICALLY-ACQUIRED GENERIC SKILLS INTO THE WORKPLACE

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ABSTRACT

This paper explores the ways Arts students may be assisted in acquiring an explicit rather than a tacit understanding of their full range of graduate attributes. With this understanding, the students may be better able to represent themselves when seeking graduate employment and be more proficient at transferring their academically-acquired skills into the workplace.

INTRODUCTION

Universities are increasingly being expected to turn out "work ready" graduates for a contemporary workplace that is demanding an ever-increasing level of multi-skilling and flexibility from employees. As a result, the ability to transfer skills among various contexts is becoming increasingly important (Seltzer & Bently, 1999). These forces have prompted renewed interest in the acquisition of transferable skills. One response to this expectation has been the growing importance placed on the development of generic skills among university undergraduates (Crebert, Bates, Bell, Patrick, & Cragnolini, in press). It is argued in this paper that students are in fact acquiring a range of generic skills within the academy yet are not being sufficiently pressed into explicitly identifying these skills, with the result that the students often under-represent themselves to employers.

A key activity that can serve as a tool in aiding individuals to recognise and recontextualise their skills and attributes is that of structured and guided reflection (Kemmis, 1985). However it would appear to be a process that is under-utilised in universities. This paper draws on findings from the *Workplace Learning Project* (Buckridge, Buckridge, Ferres, &Yashin-Shaw, 2002) conducted in the Faculty of Arts at Griffith University, to propose mechanisms by which students may acquire an explicit rather than a tacit understanding of the full range of their graduate capacities. The project used students' paid, part-time work as a context for examining the application of academically-acquired knowledge and skills. The theoretical framework of the paper draws on and synthesises current literature related to the transfer of learning and the development of generic skills in undergraduates.

THEORETICAL FRAMEWORK

Traditionally, much university teaching has been directed at the teaching of abstractions so that the knowledge acquired may be generalizable and not context bound. However, if students then have difficulty in applying these abstractions in non-academic contexts, or "if abstractions are not understood in such a way that they can be related to new contexts, then they suffer from a lack of, what cognitive psychology denotes as, transfer" (Yashin-Shaw & Stevenson, 2003). For this reason a number of cognitive researchers such as Collins, Brown, and Newman (1989), and Brown, Collins, and Dugiud (1989) have argued that students are better served if they learn abstractions from multiple contexts rather than learning them directly. However, given that much university learning is – by nature – decontextualised by virtue of the fact that it takes place in lecture theatres and seminar rooms, what mechanisms are available to university educators to help students ground their decontextualised learning into contextualised experiences? Van Oers (1998) proposes a framework by which to investigate this issue. He argues that generalizability is achieved not through decontextualisation of knowledge but rather through recontextualisation which involves "contextualising something in a new way" (Van Oers, 1998, p. 483). Rather than "freeing" knowledge from situational constraints (thereby supposedly making it more generalizable), generalizability is more likely to be achieved when knowledge is transformed through being used iteratively in different contexts and for different purposes.

University students find themselves in different contexts as part of their day-to-day lives. For example, an ever-increasing number of them

have part-time work, and therefore they transit regularly between academic and non-academic contexts. They therefore have the opportunity to recontextualise their academic knowledge and understanding in non-academic contexts and vice versa. Unfortunately, however, this does not happen automatically. Indeed, as Marshall and Cooper (2001) have shown, there is no easy or automatic connection between students' academic study and their world of work. They have little sense of how to construe anything that they are doing at their work as a skill that has any particular form or that has been transferred from any other context, let alone that of the academic classroom. Understanding of how knowledge is recontextualised is most likely to happen when activities in different contexts are "consciously reflected on, often struggled with and the eventual outcome changes one's sense of self and social positioning" (Beach, 1999, p. 114). Beach (1999) has coined the term "consequential transitions" to refer to the transformative nature of experiences across different domains and environments which give rise to generalizations as well as new conceptions of "knowledge, identities, ways of knowing as well as new positionings of oneself in the world" (p. 113).

Helping learners to acquire the tools by which they may examine these transformations and understand the ways in which they may be able to recontextualise their knowledge is important. It can empower undergraduates with a sense of confidence in their ability to adapt to different contexts – be they academic or non-academic – by reconstituting, refocussing, and repackaging their knowledge. This is essential in a workplace characterised by transition and change and where graduate employment options may not be clearly defined. Explicit identification by Arts students of how they transfer their acquired capacities between academic and non-academic contexts is likely to enhance their success in graduate job seeking and make the value of their Arts degree more visible to prospective employers.

It is argued in this paper that one mechanism for doing this is to provide students with the space, opportunity and, indeed, the press to reflect on and struggle with the activities in their lives which give rise to consequential transitions. Acknowledging that students are busier than ever because of their part-time jobs and therefore less likely than ever to take time out to reflect, it would be a good idea to build time into the curriculum when this can be done. Because the kind of reflection that effects change and transformation is often difficult and discomfiting, students are more likely to engage in it only if pressed. Furthermore, for it to be effective and purposeful the reflection needs to be deliberate, structured, and guided (Boud, Keogh, and Walker, 1985). This opportunity (and associated conditions) were provided by the introduction of a new course in the Faculty of Arts at Griffith University entitled *Learning and the Workplace*. It was the culmination of the *Workplace Learning Project* undertaken in the Faculty of Arts at Griffith University over 2002-2003.

The aim of the project was to help Arts students explicitly identify the full range of skills they had acquired at university. Arts students traditionally do not undertake formal work placements as do students in other faculties with more vocationally-orientated degrees. They therefore are not afforded the opportunity to apply their academically-acquired skills and knowledge (acquired in a relatively abstract and decontextualised way at university) in an authentic workplace context that carries academic credit. Nonetheless, many of these students work, often long hours, in some form of paid part-time employment. The course, *Learning and the Workplace*, sought to use this employment as a context for helping students to identify the full range of academically-acquired skills they had at their disposal and ways in which they transferred this knowledge between academic and workplace contexts.

METHODOLOGY

In the first stage (Stage 1) of the Workplace Learning Project, which took place in Semester 1 of 2002, voluntary participants for the research were sought from among third year humanities students enrolled in a Bachelor of Arts degree to provide case-based qualitative data. Students needed to have been engaged in some sort of part-time work for at least six months. Twenty students volunteered to participate in the project. Each of them was interviewed one-on-one for approximately one hour for the purpose of identifying ways in which they were applying their academically-acquired capacities – both arts-specific and generic – within the workplace; ways in which their workplace experience may serve as a alternative to work placements of the kind available to students in other more vocationally inflected degrees; and links and

connections between their academic and non-academic contexts.

Each interview was a combination of structured and unstructured approaches advocated by Qureshi (1992) as being suitable for "applied research" which is "research directed toward practical use within certain policy or problem areas, undertaken by researchers employed or contracted by policy makers" (p. 105). The research being reported in this paper was not primarily for the purpose of generating theory but to illuminate a range of considerations associated with students' acquisition of generic skills through studying a liberal-arts degree and the application of these skills in their existing part-time work as a preparation for graduate employment. Furthermore, the outcomes of the study led to changes in practice i.e., the introduction of a new undergraduate course called *Learning and the Workplace* specifically designed to provide students with the opportunity for extended and scaffolded reflection. The value of the opportunity for reflection provided by the course is discussed in the following section.

The core of each interview covered a number of predetermined questions and considerations such as the following.

- Referring to the list of generic graduate capacities (Table 1), identify ways in which you use these capacities in your part-time work.
- Think of some specific problem or difficulty you encountered in your workplace recently. Identify which skills you used in dealing with it explaining how you were able to identify these skills in action.
- Identify ways in which the skills you have discussed in the previous question have been developed through your academic studies.
- Identify some specific content knowledge from your university courses that you have applied in your part-time work.
- In what way has the experience of simultaneously being a student and a worker informed your understanding of both contexts?

GENERIC GRADUATE CAPACITIES	
Cognitive	Ability to : • think critically (including the ability to critique existing paradigms i.e., question accepted wisdom), • think creatively, • think analytically, • problem-solve (including identification and problem definition), • analyse and critically evaluate.
Social	Ability to : • communicate effectively - in both oral and written form, • work effectively and collaboratively as a member of a team, • assume responsibility and make decisions, • be sensitive to and appreciate differences in gender culture and customs, • value truth, accuracy, accountability and a code of practice.
Personal/ attitudinal	Ability to : • initiate and lead enterprises, • commit to life-long learning, • be self-reliant, • be reflective, • engage in self-assessment and analysis.
Technological	Ability to : • use a wide range of technology (e.g., www and electronic databases) to locate, evaluate, and manage information, • be confident in the use of computers for various purposes and outcomes.

Table 1. Generic graduate capacities.

There was also opportunity for more open-ended discussion and generative questioning during the interview process. These opportunities were designed to help students "unpack" responses which were likely to yield useful information. Too structured an approach was likely to "inhibit the free expression of feeling or the expression of unanticipated responses" (Qureshi, 1992, p. 109). Too highly unstructured an interview might not have sufficiently pressed students into unpacking their repertoire of transferable skills – especially considering that students were being asked to think about associations and applications of their knowledge, which they may not have considered previously. Prompting or assistance was provided where necessary to assist students to access and verbalise some of their tacit knowledge.

The interviews were audio-taped, transcribed and analysed according to six major themes. These were students' knowledge of generic capacities; how generic skills are developed in students enrolled in Arts courses; the value of BA studies in the part-time workplace; how part-time work undertaken by Arts students may serve as a work placement experience to develop work readiness; the complementarity of Arts studies and part-time work in preparing students for future employment; student perceptions about the value of studying Arts. The data collected were used as a basis for formulating ways of adding value to students' Arts degrees. No claims to generalizability of findings are made. Given the small number of participants (N=20) and the fact that they were acquired by voluntary participation rather than random sampling,

The second stage (Stage 2) of the project involved the introduction of the *Learning and the Workplace* course as a pilot offering in the Arts Faculty, with enrolments being drawn from those students who had participated in Stage 1. The aim of the course was to formally continue the opportunity for structured and guided student reflection initiated in the interviews conducted in Stage 1. Five students enrolled in the course. Stage 3 of the project, which took place in Semester 2, 2003, involved a revision and expansion of the pilot course which was then offered to all Arts students. Six students enrolled in the course. Feedback from students as part of the course evaluation was also used as data, the relevant aspects of which are reported in the following section. In Semester 2, 2004 the course will be available to students as an elective on a university-wide basis.

The *Learning and the Workplace* course focuses on explicit identification of the full range of generic skills acquired by students, the origins of the skills, their current applications, and their future usefulness. Central questions with which students engage include the following. What are generic skills? How have they been developed in the courses students have undertaken? How are they being used currently in students' existing part-time work? How will the identification of this transfer of academically acquired knowledge into existing work aid in the preparation for, and success in, graduate job seeking and employment? How does the continual transition between university and work and vice versa transform the individual student's understanding of his or her capacities?

All three of the assessment items in the course require students to engage in various forms of extended, structured, and guided reflection and documentation. The significance of such activity and the implications for the students participating in the study are found in the Discussion section.

RESULTS

Student feedback on the course at the end of Stage 3 in Semester 2, 2003 was part of the data gathering process. Extracts from comments are reported below from each of the six students about the experience of scaffolded reflection provided in the course.

> The reflective journal entries forced me to do something I wouldn't have chosen to do on my own. It was the first time I'd done anything like it and it took me a while to feel comfortable with it. But that, in conjunction with the major assignment, really made me explore the full range of my skills. I used to think only very generally about them but now I realise I am capable of so much more. (Student 1)

> I learnt to vocalise links between what I was doing at university and what I could do in my future career. This not only helped to clarify my directions but also made me more adept at talking about my skills, which will be very useful in interviews. (Student 2)

> Analysing our experiences in the way we did helped me to understand that particular skills can be transferred into many different contexts. I realise now that there are limitless possibilities. I feel much more prepared for and confident about graduate employment. (Student 3)

> The course encouraged me to look reflectively at myself. The process of examining different skills and reflecting, vocalising and writing about their links and transferability, allowed me to have a clearer picture of my evolution as a learning creature. (Student 4)

> Having to think about what I do at university and how it applies in the workplace has helped me to see the bigger picture of what I'm doing here. I used to only think about passing the course but not thinking about how it's going to help in the long term. (Student 5)

> The assessment items made me think about my abilities in a way that I have never done, or needed to do, before. I have a different understanding of myself and what I am capable of. The course has boosted my confidence tremendously. I have already found graduate employment in a field I would never have thought I would have had a chance in. The insights gained from this course have been invaluable. (Student 6)

It would seem, from the above feedback, that, for the students enrolled in the course in 2003, the press to reflect was a somewhat novel, though ultimately, rewarding and valuable experience for them. The process of reflection appears to have changed, to various extents, the way they think about themselves and their abilities. The usefulness of such an activity is discussed in the following section.

DISCUSSION

There are different mechanisms for helping students to become more consciously aware of the full range of their skills. The most obvious is to embed them within the curriculum and to explicitly identify, teach, and assess them. Griffith University's *Griffith Graduate Project* is currently engaged in this undertaking. However the subject of this paper is the initiative in The Arts Faculty at Griffith University which has seen the introduction of the course *Learning and the Workplace* to cater for students who cannot formally engage in work placement. Thus far, only eleven students have completed the course. In 2004 the course will be available on a university-wide basis and it is anticipated that more students will enrol – especially those from disciplines which do not provide a formal work placement.

The cornerstone of the *Learning and the Workplace* course is the opportunity it affords students to reflect on their experiences as part-time workers and full-time students. Such an activity may well deliver rewards to undergraduate students who, according to Marshall and Cooper (2001), have limited experience and success in using reflection to make connections between their academic and non academic experiences. It is argued in this paper that it is the activity of reflection that forges the links within students' understandings of the various contexts across which they operate, thereby promoting a deeper understanding of each context. However, as Marshall and Cooper (2001) observe, it is essential that students are pressed into, aided, and given the opportunity for such reflection.

The course *Learning and the Workplace* provided the scaffolding students needed to make their transitions between their academic and work contexts "consequential" (Beach, 1999). To some extent the course is a response to the gap that the literature suggests exists between higher education and the world of work. Through structured and guided reflection students can be encouraged to forge explicit links between the various experiences in the different contexts in which they find themselves. Reflection then may be, for some students, a key activity by which to add value to their learning both within and outside the academy. It is this activity that has the potential to help them to gain facility with recontextualising their knowledge. "The capacity to reflect is developed to different stages in different people and it may be this ability which characterises those who learn effectively from experience" (Boud, Keogh, & Walker, 1985, p. 19). The benefit of reflection is hardly a novel concept for educators who for centuries (since Plato) have espoused the transformative power of such activity. Yet a number of students in the *Workplace Learning*

Project reported that they rarely engaged in active, structured, or guided reflection in the usual course of their academic studies; this is illustrated by the extracts in the previous section. It was hardly surprising therefore that some students initially found it difficult and even discomforting to undertake the kind of thinking required for the *Learning and the Workplace* course, yet having done so found it extremely valuable. This is also illustrated by the student feedback in the previous section.

Most of the students who enrolled in the course (both in 2002 and 2003) did so in their penultimate semester. Many of them said that, having seen the benefits of developing a reflective approach to their learning, they wished they had been encouraged to do this sooner. It would be ideal if students were required to formally engage in some form of reflection at the end of all their courses to identify the extent to which they have acquired the skills targeted in the course. In the short term it may help students to see how different courses articulate with each other and build on and inform each other, instead of viewing each course as a discrete unit which can be neatly put aside at the end of the semester. In the long term it could help students be more flexible in the workplace by encouraging them to use reflection as a means of recontextualising their knowledge.

CONCLUSION

Graduates who are able to explicitly identify their generic skills and to understand how they have acquired them and how they are already using them, are more likely to be able to recontextualise and repackage them. Structured and guided reflection is an important mechanism by which to facilitate the transfer of academically-acquired generic skills into the workplace. This paper has drawn on findings from the *Workplace Learning Project* at Griffith University to argue that students acquire a range of transferable skills at university that are often under-recognised (by both themselves and potential employers). One possible reason for this is that students do not generally engage in a process of reflection designed to help them explicitly identify the way they use the full range of their abilities in non- academic contexts such as in their part-time work. When students are pressed into undertaking such an activity, their understanding of themselves, their capacities, and subsequently their abilities to engage with different contexts, can be transformed. It affords them the opportunity to identify the ways in which they can continually reconstitute their knowledge, making it possible to transfer their skills across multiple domains. Such an understanding is invaluable for graduates entering a workplace characterised by change, where those able to be flexible, adaptable, and multi-skilled are most likely to succeed.

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USING PROBLEM-BASED LEARNING IN A SECOND YEAR CHEMICAL ENGINEERING INFORMATION-SKILLS WORKSHOP – AN AUSTRALIAN CASE STUDY

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ABSTRACT

Problem-based learning has been widely used in engineering education. This paper outlines the use of problem-based learning in an information-skills workshop for second-year chemical engineering students. The workshop and the learning outcomes are evaluated, and the results and the implications for future practice are presented and discussed.

INTRODUCTION

Problem-based learning (PBL) is "a way of constructing and teaching courses using problem as the stimulus and focus for student activity" (Boud & Feletti, 1997). It promotes critical thinking, problem solving, and self-directed learning skills, and encourages students to become lifelong learners. It emphasises the process of learning, with students taking control of their own learning, and learning how to learn (Swanson, Case, & van der Vleuten, 1997). Dahlgren (2000) described the characteristics of PBL:

> The idea of problem-based learning can be described in the form of three distinctive features. Firstly, real life situations constitute the starting point for the learning; secondly, the learning is self-directed; and thirdly, the basic work form is the tutorials, where 5-7 students work together in a group with a tutor. (p. 31)

PBL has been widely used in engineering education because it meets the demand of the engineering profession in the real world (Chung, Harmon, & Baker, 2001; Green & Kennedy, 2001). Johnson (1999) claims that lecturing as a sole teaching technique has repeatedly been shown to be ineffective. Ditcher (2001) in his article argues that problem-based teaching overcomes shortcomings in traditional teaching in engineering.

In information-skills teaching, people have begun to design teaching methods that reflect this approach. Carder, Willingham, & Bibb (2001) described the advantage of the cased-based problem-based learning (CBPBL) approach as follows:

> The primary advantage of CBPBL is that students have the opportunity to apply library skills to the solution of meaningful problems, which makes the concept of information literacy immediate and relevant …. (p.189)

The objective of this study is to critically evaluate the outcomes of an information-skills workshop that used a PBL strategy.

THE WORKSHOP

One of the second year chemical engineering courses at the University of Queensland (UQ) was designed on PBL principles. Students undertook projects that had problems drawn from real-life experiences with outside companies working closely with the Chemical Engineering Division in the university. Students were required to undertake two team-based projects. Project 1 was to analyse the flowsheeting and process system for the manufacture of formaldehyde. Project 2 was also a team-based investigation of a "local" process industry and of professional engineering careers in this industry. For both projects,

students were required to write a report. The report for Project 1 was a group report, whereas the report for Project 2 was individually written. The learning outcomes of the course were stated in the course outline. Parts of the learning outcomes were that,

> Students should be able to:
> - Use library resources to locate relevant information and data
> - Systematically target and survey information using a wide range of resources
> - Critically evaluate information
> - Present technical data and information in an appropriate form, and targeting a specified audience (both technical and non-technical) appropriately.
> (University of Queensland, 2003)

As part of the project preparation, an information-skills workshop run by library staff was arranged. The purpose of the workshop was to teach students the skills of searching and using information effectively and efficiently to meet the learning outcomes (stated above) of the course. The workshop was carried out at the first or second week of the semester to allow students enough time to search for relevant information for their projects. There was no formal assessment of the learning outcomes resulting from the workshop, and the workshop did not play a role in the final assessment of the course.

The design of information-skills workshops in UQ Cybrary is based on the Council of Australian University Librarians Information Literacy Standards for Higher Education. These standards are used as the guidelines for the learning outcomes for all information-skills workshops. The information-skills workshop for the second-year chemical engineering students followed these guidelines. Moreover, in order to be in line with the PBL approach adopted in the course, the same approach was used in the workshop.

In 2003, seventy-six chemical engineering students undertook the Process System Analysis information-skills workshops that were offered by the library. There were six repeat sessions with 16-18 students in each session. The duration of each workshop was one and a half hours. In accordance with the PBL strategy, students were asked to examine their project first, and were then presented with the problem, 'How do you find relevant information for your project?" In order to solve this problem, students needed to ask themselves a number of questions – each of which were "mini-problems" requiring solutions. Answers to those mini-problems formed the final answer to the main problem. A "search-planner form" was used to guide students through this questioning and answering process.

The format of the workshop was based on the "Floating Facilitator Model" by Duch (2001). This model has the following features.

- A considerable portion of time is devoted to group discussion aimed at solving the problem.
- The instructor moves from group to group, asking questions to direct the discussion.
- If necessary, mini-lectures or whole class discussions can be carried out in the middle of the group discussion.

The learning outcomes of the information skills for the workshop were that students should be able to, 1) define the need for information and select the appropriate information-access tools for finding the needed information; 2) construct effective search strategies to retrieve the needed information; 3) assess the utility of the information retrieved; 4) present the assessed information retrieved.

THE SEARCH PLANNER

A modified search-planner form, based on the one used in other information-skills workshops, was used to achieve the learning outcomes. It was designed to promote the critical thinking, problem solving, and self-directed learning skills of students.

Information seeking is one aspect of the problem-solving process. Eisenberg and Berkowitz (1990) identify six information problem-solving skills in this process: "1) task definition, 2) information seeking strategies, 3) location and access, 4) use of information, 5) synthesis, and 6) evaluation." Their model embeds the three skills that PBL promotes: critical thinking, problem solving, and self-directed learning.

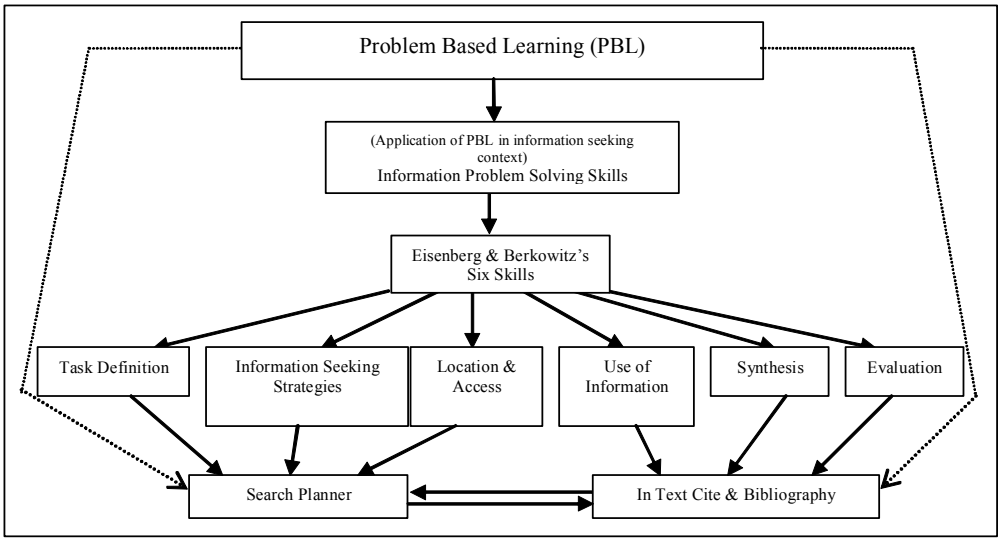

Figure 1. The relationship between skills promoted by the PBL strategy and information problem-solving skills.

The search planner design was based on Eisenberg and Berkowitz's (1990) framework, implementing information problem-solving skills from Eisenberg & Berkowitz' model. Figure 1 shows how the PBL strategy, Eisenberg & Berkowitz's (1990) model, and the search planner are related to each other.

As part of the search-planner activity, the students were required to write down their project title, identify the major concepts in the topic, and follow the search strategies presented in the question forms. When they finished the initial search, they again had to answer a series of questions, this time to assess their information needs. Students worked in project teams and were encouraged to discuss the problems with their team members throughout the searching process.

EVALUATION

The workshop and learning outcomes were assessed using data collected from three sources: an evaluation questionnaire filled in by the students at the end of the workshop, the instructor's observations during the workshop, in-text citing in the group project reports, and the bibliography produced by students for their group project report.

The bibliographies of students' individual report for Project 2 were not examined due to time constraints.

Assessment of the workshop

The evaluation questionnaire was the main source of data used to assess the workshop outcomes. The questionnaire required students to indicate the level of agreement with six statements regarding the workshop. The questionnaire also asked what the students thought of the search-planner activity.

Over 80 percent of students "agreed" or "strongly agreed" with five out of the six statements: "this course was appropriately structured"; "the presenter(s) delivered their topic effectively"; "the course handouts etc. were worthwhile"; "the course objectives were met"; and "there was enough time for exercises/hands-on practice". The results are shown in Figure 2.

Responses to the question about the search planner were also very positive. Eighty-two percent of students responded that the search planner was very useful, helpful, and effective. Some comments were as follows.

> Excellent, provided a straight forward and easy planner in which to search for information.
> Get to use the steps and could ask questions if there were problems. It gave us a chance to practise and ask questions.

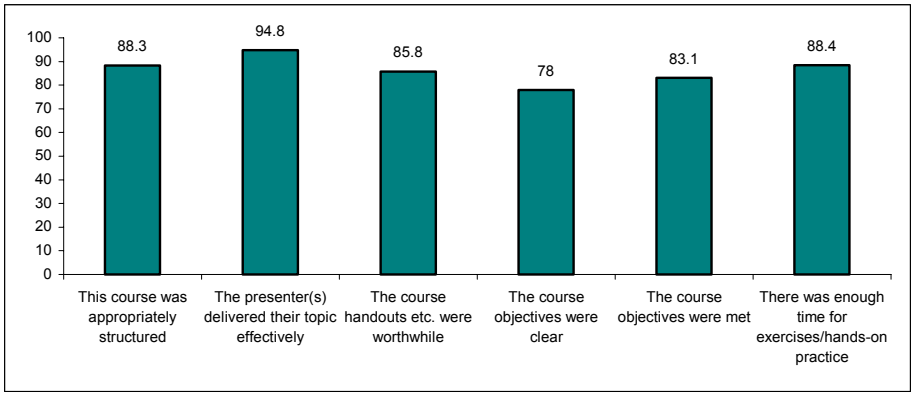

Figure 2. Students "agree" or "strongly agree" with the questionnaire statements.

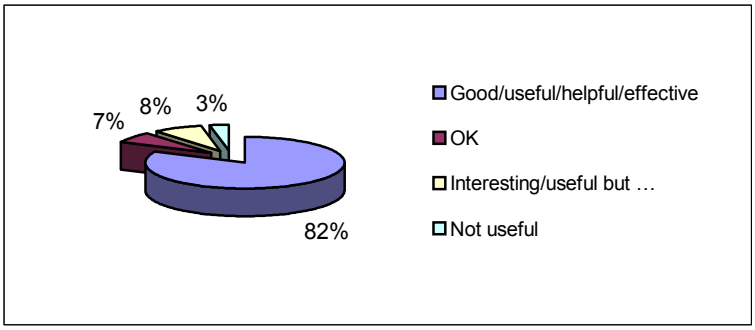

Figure 3. Students' responses to the search-planner activity.

Very effective in helping to organise ideas.
I think you need actually do hands-on work to benefit, watching and listening doesn't reinforce as much.
It was useful to actually use a plan to set out a search so you have an idea of what you're looking for. (Student comments on questionnaires)

Assessment of learning outcomes

An assessment of the learning outcomes was based on the instructor's observations during the workshop, and on an examination of the in-text citing of the literature and the bibliographies produced by the students.

Learning outcome 1: to be able to define the need for information and select the appropriate information-access tools for finding the needed information.

The instructor's observations showed that,

- the problem ("How do you search relevant information for your project?") was simple and straightforward enough for students to understand;
- students were able to identify the major concepts in the project title;
- students discussed with team members what information they needed;
- most students used more than one source: the database listed on the search planner (Compendex), the Internet, Cybrary catalogue, and other databases. A few students used the Compendex database only.

After the instructor showed the relevant information sources available on the UQ Cybrary catalogue, and demonstrated the sample search planner, most students were able to perform searches using the search planner. The search-planner activity successfully involved students in group discussion as well. Being able to work with team members is one of the skills required in the PBL process. It is also one of the essential skills in lifelong learning.

Learning outcomes 2: to be able to construct effective search strategies to retrieve the needed information.

From the instructor's observation, it appeared that,

- students could find relevant terms (linked to major concepts) in their project titles and use them as key words to perform searches;
- students were able to use critical-thinking skills to design various strategies themselves as well as seeking help from the instructor on what other information sources they could use;
- students were able to work with their team members, divide searching tasks among themselves, and discuss the sources to be used and how to search.

Initially, some students were confused about what they were supposed to do. They did not expect to work with team members in a self-directed learning mode. They had expected the instructor to do much of the lecturing. With further explanation and demonstration, however, they were able to follow the search planner to perform the searches required.

The instructor's observations identified a timing issue regarding the search-planner activity. How long should the activity last? What proportion of time should be spent on lecturing and on the search-planner activity in each session? There were comments from students that there was too much time spent on the activity. An international student commented that the lecturing part went a bit too fast.

Learning outcomes 3 and 4: to be able to assess the utility of the information retrieved; and to be able to present the assessed information retrieved.

To be able to assess the utility of the information retrieved means one can recognize the importance of the information in achieving the implied communication purpose. In the context of this study, utility is defined in terms of how students cite the information in the body of their project report and how they list it in the bibliographies. The examination of the bibliography and the citing of the information in the project report indicated that,

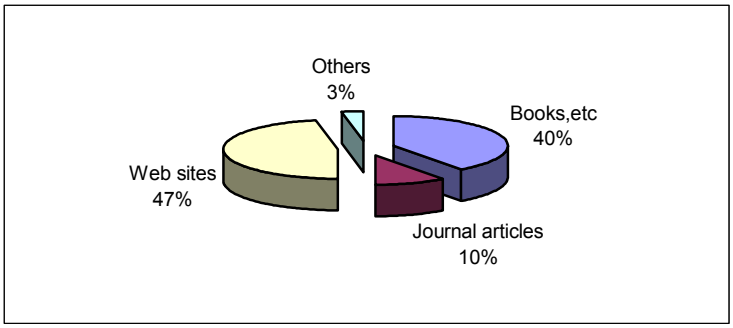

Figure 4. Percentage of items from various sources in students' group project report bibliographies.

- the information came from a variety of sources: books, journal articles, websites, patents, and standards. However, a large number of items were from the Internet;
- most students used an appropriate citation style consistently. Only 13 percent of items in the bibliographies were considered to be inconsistent and to have unacceptable styles;
- the overall percentage of items cited in the report was low. More than half of the items in the bibliographies were not cited in the reports.

Although the instructor emphasised that students needed to find scholarly publications such as journal articles, it had little effect on the outcome. The bibliographies indicated that students still relied too much on the single, and an-easy-to-access source – the Internet. This information-seeking behaviour is consistent with what Powell and Case-Smith (2003) found in their study, that students prefer to use information resources that are readily available to them, such as the Internet.

Another finding was that many items were simply listed in the bibliographies but not cited

in the reports. There are two possible explanations for this: students forgot to cite references in the report, or the majority of items listed in the bibliographies were found and maybe read by students, but the items did not contribute in a direct way to the writing of the report. If the former is the case, the implication was that the students were not fully aware of the importance of citing literature in their study. If it is the latter, it can be deduced that either that the information the students found was not relevant or they simply were uncertain whether the information they found was relevant.

DISCUSSION

Students were generally happy with the workshop's PBL approach and with the problem-solving activity using the search planner. However, there were several issues identified that need to be addressed in order to achieve satisfactory learning outcomes.

Firstly, in order to achieve the learning outcome "to be able to select the appropriate information access tools", the instructor needs to raise students' awareness of the importance of using scholarly literature. In order to achieve this goal, the instructor needs to show the students the difference between the type of information found on the Internet and the type of information found in the bibliographic databases that index scholarly publications. It is necessary to enable the students to differentiate between uncensored, privately-posted information on the Internet, and scholarly research work. Exercises that use examples to demonstrate scholarly publications and types of information retrieved from the Internet should be implemented in the workshop. Such examples could be obtained from the course lecturer. The examples could also be used to show the specific requirements for writing the project report.

Another point is that the instructor needs to make sure students understand why and how to cite literature in their research work. To be able to retrieve relevant information is far from being competent if students do not know how to use the information. Information is only relevant when it is used correctly. Moreover, students need to realise the importance of acknowledging other people's work and be aware of the plagiarism issue. Exercises can be designed to show when they need to cite information and why they need to do this.

Time is obviously an important consideration for having the workshop run effectively. Students must have enough time to do the PBL activities such as the search-planner activity. The instructor also needs time to address all the important issues as discussed above. Obviously if changes are going to be implemented to improve the information-skills workshop, a one and half hour session may not be adequate.

A possible solution to the time issue is to have two sessions of the information-skills workshop of one hour each. In session 1, the instructor could address searching strategies using search-planner activity. In session 2, the instructor could use other PBL activities to show how to cite information and how to write a bibliography in research work. The librarian should work closely with the course coordinator to arrange the workshop when students need it most. It is also suggested that marks be allocated to the bibliography and citings in the report, and that these make up a meaningful weight in the final assessment.

There are other factors that have to be taken into consideration in order to make the workshop more effective. These factors include the students' knowledge about the library system, their learning habits and expectations, and the project that the students are undertaking. If the students are new to the learning environment, then more time should be spent on introducing the system during the workshop. If the students do not have much experience with the environment, then PBL, more explanation and guidance will be required before the search-planner activity.

CONCLUSION

From this study, it can be seen that many issues remained unsolved. Due to the limited data collected from this study, many findings are suggestive rather than conclusive, with *possible* implications being drawn from the discussion. It is suggested that more studies should be carried out to test the findings from this study in the future. Topics include,

- compare a workshop that has formal assessment with a workshop that has not, in order to examine the effect on the learning outcomes;
- factors such as students' background knowledge that affected learning outcomes were identified. Further studies can be done

to see how these factors affect students participating in workshop using a PBL strategy;

- as suggested earlier, the format of the information-skills workshop can be changed to make it more integrated into the academic course. Studies can be carried out to determine if the new model of the workshop is more effective than the old one.

PBL promotes critical thinking, problem solving, and self-directed learning skills which are essential in lifelong learning. Using a PBL approach in information-skills teaching for engineering students is in line with the general approach in engineering teaching. Second year chemical engineering students were generally happy with the PBL approach in the information-skills workshop, and with the problem-solving activity – the search planner. However, it was found that although PBL is supposed to involve self-direct learning, this also requires sufficient time being allocated so that the learning outcomes can be maximized. It was also found that in the information-problem solving process, to be able to search and retrieve the needed information does not necessarily guarantee that students can use and present the information effectively.

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