INFORMATION LITERACY – AN INSTITUTION-WIDE STRATEGY

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ABSTRACT

This paper outlines the conceptualisation and implementation of an information literacy strategy within a concept of lifelong learning at the curriculum level. The strategy involves a framework which identifies the characteristics of the lifelong learner and which forms the basis of the development of resources. It argues that particular roles of teachers and staff providing academic services are central to the success of the strategy.

INTRODUCTION

This paper explores the ways in which the concept of information literacy is used within the fields of education and work, and its relationship to broader social and economic changes. Education within competitive capitalist societies is fundamentally linked to the general wealth of a nation and the distributed wealth of its citizens. Information literacy is critical to achieving these economic outcomes.

Recent rapid and pervasive social, technological, and economic changes have significantly impacted on educational contexts, requiring radical rethinking of the manner and means of higher education. In particular, information literacy has been redefined to take account of the demands of the knowledge society conceptualised within lifelong learning. The focus has shifted from acquiring the skills and understandings for success in academic settings, to those developed across the lifespan, including both professional and citizenship dimensions.

Within this perspective, this paper outlines a strategy to implement information literacy within a concept of lifelong learning at the curriculum level at the University of South Australia. The strategy consists of three components: a comprehensive and yet accessible means of understanding the concept of lifelong learning; resources to be used in the design and delivery of lifelong learning within subjects and courses, and examples of how this has been done within specific fields; and a tool for auditing the lifelong learning dimensions of subjects and courses.

The first component is the central core of the strategy, conceptualising lifelong learning through a powerful framework which identifies and maps the progression of skills and understandings. Components 2 and 3 are part of the implementation phase and are currently under development. They use the framework to build practical field and discipline-specific resources and exemplars, and an audit tool for use in evaluation.

An important feature of the strategy is the way in which it challenges the roles of those involved in information-literacy related activities: teachers and staff providing academic services such as librarians, professional development staff, and learning advisers. Involvement traditionally defined by the boundaries of professional expertise needs to be reconceptualised around multi-skilled teams with the common purpose of engineering opportunities for student learning. This approach entails professional coalitions rather than the marking of territories, with common goals and a common vocabulary for both learners and the facilitators of learning.

SHIFTING SANDS – THE RELATIONSHIP BETWEEN HIGHER EDUCATION AND WORK

Economic and technological shifts that have fundamentally challenged the relationship between education and work have caused significant and pervasive changes within higher education. Many authors (Candy et al., 1994; Coaldrake & Stedman, 1998; Coaldrake & Stedman, 1999; OECD, 1993) have catalogued these interrelated changes which include:

- new technologies – the convergence of information and communication technologies have led to proliferation of information and global access;
- the nature of work – new technologies, and the shift away from production economies to knowledge economies, have initiated and accelerated demand for an educated workforce that is a learning workforce, responding positively and rapidly to change;
- increased competition – as traditional sources of funding decline and exposure to the market increases, increased competition is impacting at all levels, with service, creativity, accountability, and productivity a focus from organisational to individual levels;

- a move from elite to mass higher education – technological change, changes in the nature of work, and the information explosion have demanded a more highly educated workforce than ever before, and ongoing changes are increasingly making learning and education a continuing process not confined to the transition from school to work.

These wider changes are the engine of reform for universities creating new demands, and also impacting directly upon universities themselves as an 'industry'. New technologies have revolutionised the making and exchange of information and knowledge, and enabled unmediated access, as well as streamlined administration. These new technologies provide new opportunities for teaching and learning, new demands on both staff and students, and new forms of educational delivery. Because government funding for education is declining significantly, universities must compete with one another, or collaborate in strategic groupings, to secure income. As students fund increasing proportions of their own education, it is seen less as a privilege than as a consumer transaction, redefining relationships between teacher and learner (Coaldrake & Stedman, 1998). The quality of courses, teaching, and support take on a new significance in a marketplace that must meet the needs of a highly diverse domestic and international student body in a global economy. In this climate there is increasing demand for universities to demonstrate – rather than assert – their value to all stakeholders and particularly to government. These pressures have also impacted upon the university as workplace, with competition and change demanding that institutions themselves become 'learning organisations' in the ways that they operate and in the ways that they apply technology (Senge, 1990; Senge et al., 1999).

All of these forces are creating fundamentally new relationships both within universities and with their external stakeholders as well as directly impacting on both the processes and content of the curriculum. The way in which these rapid and continuing changes have influenced the growing emphasis on lifelong learning and its facilitating portfolio of skills and understandings – information literacy – is considered in the following section.

LIFELONG LEARNING AND INFORMATION LITERACY – HOW HAVE THESE BEEN (RE)SHAPED IN RESPONSE TO THESE CHANGES?

The notion of lifelong learning has evolved by way of continuing education and Universities of the

Third Age which value learning for its own sake and personal fulfilment through learning. The term has been taken up and redefined, in the contexts of the pace and nature of changes in work and society, by organisations such as UNESCO (Delors, 1996), and the OECD (1993) and by other writers (Candy et al, 1994, Coaldrake & Stedman, 1998). The redefinition moved from conceptualisation of lifelong learning as recurrent formal education for adults, to notions that encompass cradle-to-grave learning in formal or informal settings, planned or opportunistic ways, underpinned by appropriate skills and motivation. Personal fulfilment remains as one outcome – lifelong learning as a means to ensure national competitiveness, and as a means for social cohesion, takes on primary importance.

Notions of information literacy have a somewhat different history arising from information literacy as an academic research skill to information literacy as a set of knowledge, skills and abilities transferable to the workplace. This literature has largely been the domain of academic librarians (Behrens, 1994; Breivik, 1998; Bruce 1995). These notions – of lifelong learning and information literacy – have been understood as interrelated, but their integration into coherent and strategic frameworks for implementation have been problematic. Key implementation questions include: what is information literacy, and is it the same for all students? how are information literacy and lifelong learning related? how do you know when a student is 'information literate'? who has responsibility for teaching information literacy? what are the respective roles of teaching academics and librarians and information technology professionals? what is the relationship of information literacy to the curriculum and, in particular, assessment? what are the developmental stages of information literacy? what are reasonable expectations of students at various levels of study and achievement? and how is the professional development of teaching academics undertaken? Although it can be argued that there is no single approach and no clear and definitive answers to the above questions, the position taken here is that a coherent and strategic initiative is required if long term and comprehensive outcomes are to be achieved.

FEATURES OF STRATEGIC APPROACHES TO LIFELONG LEARNING

While there may exist a constellation of practices in any institution, a systematic, developmental, curriculum-driven approach is required to achieve outcomes that are responsive to the increasingly complex information society. To this extent, information literacy is a key condition in design and delivery at the course and subject levels. It is not an

extra set of understandings or skills that are acquired in addition to the field of study – it is integral to the professional preparation provided through a course, specific to the field of study, and central to the learning expectations of stakeholders, including students.

Curriculum as induction into the professions

The challenge to university curricula in recent years has involved the desire for a closer relationship between the outcomes of courses and the professional contexts for which graduates are destined. With information and change being such critical features of today's professional context, information literacy is a key aspect of the curriculum for all professional education. How this aspect of the curriculum is made manifest in the teaching and learning experiences of students is the point in question. To leave such a critical aspect of professional education open to the processes of chance is not a responsible option. Just as the key knowledge outcomes are designed into a course to provide a systematic and developmentally sound sequence of learning, so information literacy outcomes need to be an integral aspect of course design. In such an approach, any teaching and learning will result in information literacy in preparation for lifelong learning, and is integral to, and must be consistent with, the field of study and the learning processes appropriate to that field. To this extent, a student cannot be seen as competent in the field without the appropriate levels of information literacy associated with that field. These skills can only be developed in conjunction with the discourse of the field, not apart from it. All aspects of the learning experience – teaching, assessment, content – must include a planned and purposeful information literacy dimension.

Engineers of opportunities – rethinking the roles of professional staff

In order to give effect to this curriculum-based approach, the roles of staff involved within the teaching and learning environment need to be reconsidered. Academic teaching staff, librarians, student support and information technology professionals, and professional development staff all need to be involved in the information literacy dimension of the design and delivery of courses (George & Luke, 1995).

The nature and timing of the involvement of a range of staff is critical. 'Back end' approaches in which librarians and others are asked to provide training after the major decisions about the course and subjects have been made, have limited effect. Rather, these professionals need to be involved in the crafting of the curriculum to include the

developmental sequence of information literacy – 'Front end' approaches which mainstream the delivery of the appropriate processes.

Such an approach assumes a significant dimension of professional development for teaching staff because of the rapidly changing nature of information services. For the most part, librarians would not take responsibility for the delivery of information literacy; rather it would be a seamless aspect of the mainstream experience of learning, integrated into the teaching and assessment. In order to achieve this, teaching staff need to be provided with, and avail themselves of, continuing professional development focusing on their own personal information literacy skills and information rich teaching strategies. This is as critical as any aspect of the subject matter. Just as students cannot be inducted into a field without the requisite field-specific information literacy, so the continuing professional development of academic teaching staff goes beyond new insights into the content. A variety of information sources – databases, online journals, major websites, people, agencies, computer networks, libraries, television, radio, government sources – are the building blocks of the curriculum, and familiarity with them and their implications for teaching and learning, are a necessary precondition of providing quality educational experiences.

These emphases on curriculum-based approaches and the professional development of teaching staff in information literacy, recognise the highly technical nature and increasing complexity of the information age. The roles of teaching staff, librarians, and other support staff – including those in student support and professional development – will need to be reconceptualised to ensure that the strengths and skills of each group are coordinated to contribute to the desired outcomes.

THE TEACHING AND LEARNING STRATEGY OF THE UNIVERSITY OF SOUTH AUSTRALIA

The university's approach to information literacy in the context of lifelong learning is situated within a wider teaching and learning strategy (Bradley, 1998). The University of South Australia has taken a particular approach in responding to the changes in the wider social and economic climate. Institution-wide planning and development processes are directed by a set of curriculum outcomes – the seven qualities of a University of South Australia graduate – and by student-centred approaches which foster student access to, and control of, their learning processes. Flexible delivery is seen as the means to achieve these.

Information literacy is identified as a component of the second graduate quality relating to lifelong learning: "A graduate of the University of South Australia is prepared for lifelong learning in pursuit of personal development and excellence in professional practice". It also contributes to the achievement of other qualities such as mastery of a body of knowledge, effective problem solving, and developing international perspectives. A set of indicators for each of the qualities has been developed to illustrate the scope of the qualities. For example, lifelong learning is understood to include information literacy skills and understandings as well as the disposition and commitment to ongoing learning.

The process of integrating the graduate qualities within a course begins with the development of course approval documentation. This includes:

- a profile of the qualities being developed at the course and subject levels; not all qualities are addressed by all subjects, but all are developed by the course;
- a matrix demonstrating the year by year development of each quality and the profile of qualities across all year levels;
- assessment for all subjects which must demonstrate a clear relationship to the development of the qualities profiled;
- the teaching and learning arrangements that support students in the achievement of the assessment.

The power of this approach lies in the linking of graduate outcomes to the curriculum through the assessment tasks and the teaching and learning arrangements, and the institution-wide planning and development processes that declare this relationship within the public arena. There are two aspects to this approach. First, the approach takes the seven generic qualities and their indicators and interprets them within the field so that they are connected in real terms to the subject matter. For example, particular kinds of subject matter may be best explored through specific websites or journals or archival material. The process for such exploration needs to be taught in association with the relevant subject matter. Second, it identifies the emphasis given to the qualities and how they will be developed and assessed through the subjects, providing a high degree of transparency for all stakeholders. For example, the developmental sequence of information literacy within a course, and its relationship to the teaching and assessment, is open for consideration in the approval process.

COMPONENTS OF IMPLEMENTATION

Graduate Quality 2 – the development of lifelong learning – is being facilitated by a strategy which fits within this wider framework of graduate qualities. A significant aspect of the lifelong learning strategy is that it is a collaborative initiative, bringing together the efforts of three service sections within the Access and Learning Support portfolio of the university. The library, the Flexible Learning Centre (which includes professional development for teaching and learning and student learning support) and Information Technology Services each have responsibility for aspects of institution-wide implementation of the lifelong learning strategy. Representatives from each of these areas will work with teaching staff from the divisions to develop a set of interrelated components which will be central in the implementation process.

The three components constitute a 'front end' professional development approach, providing teaching staff with a comprehensive and yet accessible means of understanding the concept of lifelong learning; resources to be used in the design and delivery of lifelong learning within subjects and courses, and examples of how this has been done within specific fields; and a tool for auditing subjects and courses.

Component 1 – characteristics of a lifelong learner

Although Graduate Quality 2 and its indicators provide some pointers to the developmental aspects of lifelong learning, a finer level of specificity has been developed as a statement, *Characteristics of a lifelong learner*. This framework has a professional development dimension for academic staff, provides students with guidance in the development of their own skills and understandings, and clarifies the possible roles of other stakeholders. These characteristics are identified below – see the Appendix the detailed subcategories for further clarification.

A lifelong learner:

- 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.

These characteristics have come from two main sources. The first seven are widely agreed characteristics of the 'information literate person' (see, for example, Nahl-Jakobovits 1993; SUNY Council of Head Librarians, 1997). The remaining two were added to the strategy to include attitudinal characteristics which position information literacy within the wider notion of lifelong learning as one of the seven qualities of a graduate of the University of South Australia. This integration of skills, understandings, and attitudinal aspects within the curriculum, equips learners for their own ongoing development as professionals and citizens. The approach links professional competence for both the novice and the expert to the capacity for, and motivation to, lifelong learning.

Component 2 – a web-based resource for design and delivery

The *Characteristics of a lifelong learner* provide the framework for a web-based resource which is being developed. This will provide generic and field-specific resources for both staff and students on information literacy strategies at the micro level within subjects. It will initially draw together existing resources and examples of best practice from within the university and beyond. New resources will then be developed in those areas not adequately represented. It is anticipated that staff will use the resources directly in their teaching and assessment and that examples will provide ideas for the development of lifelong learning in subjects and courses. To this extent the web-based resource will provide a significant professional development dimension at a highly practical level. For students, the resource will enlarge their appreciation of the dimensions of lifelong learning and permit self assessment and self development of their skills. The framework is capable of being linked with university initiatives that are being developed in the area of recording student achievement (see Nunan 1999 for the background to this approach). The framework provides a common basis for discussion, debate, and negotiation of the concept between all stakeholders.

The following example illustrates how the *Characteristics of a lifelong learner* (see Appendix) draws together information about resources and examples of best practice that serve to explicate the dimensions of the particular feature of a lifelong

learner at various developmental stages and in different fields of study.

For example, one of the characteristics of a lifelong learner is one who "develops skills in using information technology". This is further extended in a range of subcategories:

- keeps up to date with developments in information technology;
- can access the Internet, and can navigate the information highway to locate information appropriate to need;
- uses group communication methods, electronic mail, discussion groups for information gathering, feedback and interaction;
- effectively expands or narrows a search as needed;
- manipulates and transfers electronic information.

If we take one of these subcategories – uses group communication methods, electronic mail, discussion groups for information gathering, feedback and interaction – the links or location information show resources and practices that can be used at various levels of student development as follows:

- for the beginning student, online information leaflets on using e-mail produced for a program of orientation to the university's computing environment 'Student e-mail with Microsoft e-mail', (<http://www.unisanet.unisa.edu.au/flc/sls/publicitns/comleafs/comleaf4.asp>);
- this is supplemented by more extensive information about the university's e-mail environment, (<http://www.unisa.edu.au/its/exchange/home.asp>);
- students' use of e-mail is encouraged by information on finding out e-mail addresses, (<http://www.library.unisa.edu.au/internet/intguide/emailext.htm>);
- for students who are beginning to engage with the field, there is a leaflet (online) 'Using a listserv' which introduces discussion groups, (<http://www.unisanet.unisa.edu.au/flc/sls/publicitns/comleafs/comleaf5.asp>).

These sample resources can be woven into teaching programs at various levels from first year undergraduate to postgraduate levels, by teachers and support staff. They also stand as a group of resources that students may access directly,

providing a degree of access and control of learning that helps students build their sense of agency and responsibility for their own learning. In addition to these resources, examples of best practice are being gathered. These will document initiatives such as a communications subject which included as an assessment item a debate involving students in the subject and students from other institutions in Australia and overseas collaborating electronically to build their arguments. Gathering information about best practice in this way is a means of breaching the almost 'tribal' boundaries that can exist within and between disciplines that work against dissemination of innovation and best practice. The resource is cumulative. As it is built it has the potential to become a stimulus for creation of new resources that push the boundaries of the concepts of information literacy and lifelong learning.

Component 3 – an audit tool

Based on the *Characteristics of a lifelong learner*, an audit tool is being developed for use by course teams in the design and evaluation of the lifelong learning dimension of their course or individual subjects. The tool provides a framework against which to assess the degree to which a course and its component subjects provides opportunities, resources, and the stimulus for students to develop information literacy skills that will equip them as graduates who value and participate in lifelong learning as professionals, and in their personal development. Such an audit provides a basis against which the web-based resource (component 2) can then be 'mined' to extend and improve dimensions of development of lifelong learning.

CONCLUSION

The framework proposed here is based on a relatively simple statement of characteristics of a lifelong learner. The statement is derived from information literacy and lifelong learning literatures and situated within an overarching teaching and learning strategy which focuses on graduate outcomes as an organising principle for activities across the University of South Australia. A curriculum approach, and a rethinking of the roles and relationships of teachers and support professionals as the engineers of learning opportunities, underpin a resource for teachers and learners which draws together a range of resources and exemplars of practice to extend and improve the way lifelong learning and its enabling portfolio of skills – information literacy – can be supported and developed throughout courses and subjects.

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APPENDIX

CHARACTERISTICS OF A LIFELONG LEARNER

recognises the need for information	<ul style="list-style-type: none"> formulates and focuses appropriate questions based on information needs recognises that the accurate and comprehensive information is the basis for intelligent decision making and problem solving defines a manageable focus and timeline
accesses information from appropriate sources	<ul style="list-style-type: none"> understands the purpose, scope and appropriateness of a variety of information sources including: people, agencies, computer networks, libraries, television, radio, government sources, etc develops and refines efficient and effective search strategies understands standard systems of information organisation understands the purpose, potential and limitations of the World Wide Web, e-mail and electronic mailing lists interprets bibliographic citations from printed and electronic sources interprets a resource list to identify the nature and source of specific items eg identify resources citing a book, a chapter from a book, a journal article, a Web page, and audiovisual presentation understands the purpose of components of resources e.g. a table of contents, preface or foreword, index, list of references or bibliography, credits for visual productions, hypertext links
develops skills in using information technology	<ul style="list-style-type: none"> keeps up to date with developments in information technology can access the Internet, and can navigate the information highway to locate information appropriate to need uses group communication methods, electronic mail, discussion groups for information gathering, feedback and interaction effectively expands or narrows a search as needed manipulates and transfers electronic information
critically analyses and evaluates information	<ul style="list-style-type: none"> understands that information and knowledge in any discipline is a social construction and is subject to change as a result of ongoing dialogue and research maintains a sceptical predisposition when using information sources understands the difference between data, information and knowledge evaluates information sources for purpose, conceptual framework, level of information, point of view, audience, accuracy and currency of information can understand and use the criteria for determining the credibility of the producers of information takes a critical evaluative approach to the relevance, currency, comprehensiveness and accuracy of information distinguishes among facts, points of view and opinions
organises and processes information	<ul style="list-style-type: none"> analyses and synthesises information from a variety of sources integrates new information into own knowledge base makes inferences, connections, and draws conclusions organises information for practical application
applies information for effective and creative decision making	<ul style="list-style-type: none"> manages, interprets and uses information for effective decision making or problem solving
generates and effectively communicates information and knowledge	<ul style="list-style-type: none"> presents and communicates the information so that it is accessible to the target audience evaluates the effectiveness/success of products developed and presented
develops attitudinal objectives which lead to appreciation of lifelong learning	<ul style="list-style-type: none"> understands the power and scope of information in today's society is motivated to read beyond set texts derives satisfaction and sense of pleasure from research applies these information seeking skills to independent, self directed lifelong learning
appreciates their own developing position as a learner in relation to the field of knowledge or profession	<ul style="list-style-type: none"> recognises their limitations and potential identifies their own preferences in learning styles and strategies acknowledges achievements as a learner consciously adopts a position within the field based on knowledge and values