The Inaugural Lecture

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"Education for All: The Tyranny of Distance Overcome?"
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"EDUCATION FOR ALL: THE TYRANNY OF DISTANCE OVERCOME?"

Background

Australian society is in a state of change. As well as the observable changes associated with our ethnic
composition and cultural attitudes, there are the changes brought about by computing and technological
advances. The applications of these advances now pervade most facets of our daily lives. Clearly, in an
increasingly scientific and technologically oriented society, our education system has an obligation to
provide education and training programs for individuals to enable them to cope with and contribute to that
society. Consequently, there is now a genuine concern within society regarding equity and access in
education — real equity of opportunity for education and training for all Australians.

How accessible is education for all Australians? Can the tyranny of distance really be overcome for
individuals who do not have easy access to education or training facilities? If our goal is to achieve
access to education for all, how will this be gained?

These questions are the focus of this presentation. However, before proceeding, it is necessary to define
the term “distance education”, as it will be frequently used in this presentation, and to provide some brief
background of the government role and commitment to the provision of education through the distance
education mode.

In broad terms, “distance education” is viewed as a mode of delivery of education for people who, for
reasons such as location, physical disability, family responsibility or the demands of employment, find it
difficult to attend regular on-campus classes. For many people, however, particularly those in remote
homesteads and isolated farming and mining communities, it is often the only access to education.
Education through distance education study can result in credit towards formal qualifications, such as a
Bachelor of Arts degree, or non-credit, when short courses or workshops are carried out. Thus, distance
education study can be a means to obtain a formal qualification for training purposes, for general interest or
for leisure.

Also, it is to be acknowledged that distance education is often the preferred means for both educational
opportunity and access to education. Approximately 25 per cent of all distance education students in the
higher education sector live within 40 kilometres of the higher education institution at which they are
enrolled.

As a final preface, while the focus of this presentation is on participation and access to higher education, the
considerations and issues apply equally to distance education available in the secondary school and TAFE
sectors, as well as to industry training and retraining opportunities.

Governments' role in the provision of distance education

Governments do not have a long history of involvement in distance education. Their views were not felt
until after the publication of Open Tertiary Education in Australia in 1974 when the Commonwealth sought a
role in the development and coordination of distance education. The Federal Government then came to
recognise distance education as a means of broadening access and participation in higher education.

Before 1970, six higher education institutions offered courses by distance education, but by 1987, that
number had increased to 48. This attracted the attention of the Commonwealth Tertiary Education
Commission (CTEC) in its Review of Efficiency and Effectiveness in Higher Education (1986), which identified "a
fragmentation of resources and unnecessary duplication of effort” and “a failure to make the most of potential economies of scale” (CTEC: 1986: 222).

As a consequence, the Commonwealth Policy Statement of Higher Education (1988) outlined a model for the nationalisation of distance education in Australia through the designation of about six distance education centres (DECs). Designated DEC institutions were to have a broadly based educational profile and be expected to meet national as well as state needs in distance education. Only those with a broad range of courses available or able to be developed, a demonstrated capacity to develop and deliver high quality materials and a willingness to ensure the broadest possible access to geographically isolated areas would be considered as DECs. The criteria for designation also included a minimum enrolment level of 3 000 distance education students. The final outcome was the establishment of eight DECs (Queensland 2, New South Wales 2, Victoria 2, South Australia 1, Western Australia 1).

In terms of participation in higher education, distance education student enrolments increased by 40 per cent in the decade following 1974. In 1990 there are approximately 50 000 distance education students enrolled in higher education courses in Australia.

### Table 1
**Distance education enrolments by State — 1989**

<table>
<thead>
<tr>
<th></th>
<th>NSW</th>
<th>Qld</th>
<th>Vic.</th>
<th>WA</th>
<th>SA</th>
<th>Tas.</th>
<th>NT</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>DE enrolment</td>
<td>18 844</td>
<td>11 005</td>
<td>10 080</td>
<td>4 021</td>
<td>3 040</td>
<td>656</td>
<td>210</td>
<td>47 856</td>
</tr>
<tr>
<td>HE enrolment</td>
<td>10 5329</td>
<td>47 003</td>
<td>94 877</td>
<td>31 643</td>
<td>27 188</td>
<td>7 058</td>
<td>15 400</td>
<td>328 498</td>
</tr>
<tr>
<td>DE enrolment as %</td>
<td>39.4</td>
<td>23.1</td>
<td>21.0</td>
<td>8.4</td>
<td>6.4</td>
<td>1.3</td>
<td>0.4</td>
<td></td>
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<tr>
<td>of total DE enrolment</td>
<td></td>
<td></td>
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<tr>
<td>DE enrolment as %</td>
<td>17.8</td>
<td>23.4</td>
<td>10.6</td>
<td>12.7</td>
<td>11.2</td>
<td>9.3</td>
<td>13.6</td>
<td>15.3</td>
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<td>of HE enrolment</td>
<td></td>
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DE = distance education HE = higher education

At present, the Federal Government's response regarding access and participation to education has basically been in terms of quantity; the Australian population needed to become more educated. It is the policy of all Australian governments to increase the school retention rate to Year 12.

This has been effected by the Commonwealth Government through the provision of an increased number of places in higher education and the states have in most instances expanded their TAFE provision. Also, industry is under pressure to provide training for all workers and the restructuring of awards provides incentives for further training and retraining of the workforce.
Based on the projected population growth to the Year 2001, there will be considerable pressure to provide additional educational opportunities. The largest increase will be in the 30–39 and 40–64 year age groups as shown in Figure 1.

These projected demands will compel changes in educational approaches and strategies, if the objective of a more highly educated total population is to be achieved. Clearly, distance education will have an important role to play in the provision of:

- Quality education/training programs
- Models/approaches to provide real equity of opportunity for all individuals
How are distance education issues being addressed?
In distance education Australia is recognised as a leader in providing students with quality study materials. However, distance education students still face significant communication difficulties which need to be overcome. These include:

- Few opportunities, if any at all, to share problems, or other questions with the lecturer or fellow students causing despair and aggravating the student’s sense of isolation, particularly when students are experiencing difficulty with their study;
- Delays in obtaining feedback from assignments;
- Limited access to computing facilities;
- Limited access to library and other resources; and
- Cost associated with communication or contact with the lecturer.

It is generally accepted the new telecommunications and computing technologies will have a substantial impact on the provision of education. The quality of the impact will depend largely upon the use to which technology is put and how this use is implemented.

Potential benefits which technology offers to the distant learner include:

- Greatly improved interaction with institutions, staff, other students and resources;
- Improved quality of the educational experience through the use of realistic applications and simulations to enhance learning materials;
- Reduced time required to complete courses; and
- Improved access to educational opportunity and reduced costs in isolated communities.

Enhanced telecommunications and computer technologies are being introduced for distance education students throughout Australia and elsewhere. These give students greater independence and control over their learning environment through improved access to resources and people.

There is now little doubt the new communication technologies can improve educational accessibility, and it has been amply illustrated around the country that students using these techniques suffer no learning detriment.

Communication technologies which have been used in distance education
Technologies being used for communication between the student and teacher are:

**Telephone line**
- Data transmission between students and institutions using networks
- Communication between lecturer and students and between students on a one-to-one basis or by teleconference and teletutorials
- A 008 line for direct access to institutions by students for specific purposes
- Recorded message service

**Viatel**
- Bulletin boards
- Course information directories
- Tutorial services

**Electronic mail**
- Interactive communication between student and student, and student and lecturer
• Access to and transmission of library catalogue information and documents
• Database information

Facsimile
• Similar application to electronic mail, with the advantage that complete text, such as student assignments, can be sent

Interactive video
• One-way video and two-way voice used in the delivery of courses by land-line and satellite

Videotext
• Access to information databases that can be interactively used
• Approaches that will enable interaction with academics or other institutional personnel and students, which may be face-to-face contact and/or through available technologies
• Ready access to learning resources and facilities that may be made available through the central campus, open learning centre or by available technologies such as facsimile

The impossibility of making the same type and level of communication and resources available to all students needs to be acknowledged. For instance, students living at remote homesteads and isolated farming and mining communities will have fewer opportunities for face-to-face contact with institutional staff and other students. Thus, the range of communication options and access to resources for students in these locations will be more limited than for students residing in cities and towns.

Approaches being developed for distance education

The present viewpoint of many distance education providers is that learning at a distance should as far as possible be based on self-instructional and self-paced materials that provide a high degree of autonomy for the student. Accordingly, an increasing number of study packages now contain study guides supported by resource books, audio and video tapes and computer-assisted learning materials.

This approach to the provision of education is termed "open learning". The freedom of time, place and method is made possible by providing the learner with a carefully planned, flexible learning package, which is given both tutorial and administrative support. This support can be provided by teleconferencing sessions, electronic mail and facsimile communications between the lecturer and students and between students.

Thus, open learning is an approach to the delivery of education which aims to give students more choice and control over the time, place, style and rate of learning.

In the use of open learning for distance education programs, two essential elements need to be incorporated in the learning and support model for students. These are:

• Approaches that will enable interaction with academics or other institutional personnel and students by face-to-face contact and/or through available technologies;
• Ready access to learning resources and facilities, such as library resources, computers and computer software, that are needed for study, and which may be made available by some mechanism through the central campus, open learning centre or by available technologies, such as facsimile.
A model support system including these two elements and showing interactions between students and institutional staff and resources is shown in Figure 2.

This model permits the provision of a range of academic and administrative support and resource services centrally, through an open learning centre, or at home. Also, interactions between students and academics or other support staff can be face-to-face, or by post, telephone or electronic mail. Interaction between students and academic staff may also be through intermediate support, such as an open learning centre liaison officer.

Figure 2:
Model Support System

I will now briefly describe two examples of how the above approaches have been put into practice — the establishment of the Queensland Open Learning Centre Network and the national provision of taxation studies.
Queensland Open Learning Centre Network
The Queensland Government, in addressing the issue of increased accessibility and participation in higher education, is providing $1 million to establish the Queensland Open Learning Centre Network (OLCN) as part of the total funds of $4 million for the Queensland Open Learning Project (QOLP).

The OLCN when fully established will consist of approximately 40 open learning centres in a range of locations throughout Queensland (see Figure 3). The open learning centre locations include primary and secondary schools, education centres, TAFE colleges and universities.

Figure 3: Locations of Open Learning Centres
The QOLP includes:

- Development and delivery of preparatory study and bridging courses with special emphasis on science, mathematics and communications;
- Development and delivery of courses for tourism, hotel management and related studies;
- Development and delivery of courses for the remote area Aboriginal and Torres Strait Islander Teacher Education Program in North Queensland; and
- Development of an information service for education courses.

The University College of Central Queensland, in conjunction with other Queensland higher education institutions and TAFE, played a pivotal role in the establishment of the OLCN. The main goal of this network is to increase access, equity and participation. Achieving these goals was seen to depend upon:

- Educational awareness and promotion
- Availability of preparatory and bridging programs
- Overcoming geographical and other forms of isolation
- Flexible entry requirements
- Course design
- Available and emerging communication technology
- Credit transfer capabilities
- Quota management.

The open learning centres are seen as a means to:

- Provide links between the general community, higher education institutions and TAFE to foster and promote participation in higher education; and
- Provide support mechanisms for services for persons in regional communities seeking to undertake education programs.

The OLCN will operate in the manner shown in Figure 4.

![Figure 4: OLCs as a component of a communication network](image-url)
Communication technologies and computers are being used as a way of bridging the communication gap and improving information access to communities. In particular, the use of interactive electronic technologies such as audio, audiographic and computer-based learning systems will considerably improve the quality and access to education in isolated and remote communities.

Thus, the following equipment will be placed in each open learning centre:

- Computer hardware — printer and modem
- Video player and monitor
- Audio teleconferencing system
- Facsimile machine
- Telephone answering machine
- Telephone lines for teleconferencing, electronic mail and facsimile services

The role of the open learning centre and its coordinator is shaped from the needs of four user groups:

- Community members
- Students
- Institutions
- Management committee

The interaction between these groups and the open learning centre is shown in Figure 5.

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**Figure 5:**
Needs of an open learning centre
The Community includes commerce, industry, community groups, teachers, parents, secondary school students and private providers. Community needs for the open learning centre are:

Centre facility
- Information and referral centre for courses available at TAFE and higher education institutions
- Display and promotion of activities
- Training and in-service facility
- Communications facility for such items as teleconferencing, electronic mail and facsimile
- Consultancy services provided by higher education institutions and TAFE

Centre coordinator
- Career and course information and referral-advocate role
- Information source for higher education institutions and TAFE colleges
- Facilitator for training and continuing education courses
- Facilitator or organiser of community events, such as career markets, orientation and graduation functions
- Facilitator for consultancy services available from institutions
- Linking of community needs to institutional facilities

The coordinator also assists people in the community set up and use communication technology. For example, a coordinator is able to assist and train new users about use of electronic mail and teleconference facilities.

Students enrolled in higher education institutions and TAFE colleges are able to use a centre for:
- Lectures and tutorials delivered by communication technologies
- Meetings with local students and visiting lecturers
- Quiet study
- Faxing assignments to the student’s institution
- Twenty four hour access to computers
- Access to study resources
- Access to on-line library catalogues
- Course and career information from higher education institutions
- Examinations

In the establishment of the network, extended use of communications technologies is a means to improve access to higher education and the quality of education. However, each of the QOLP projects has taken a relatively cautious approach to the use of new and emerging technologies.

The first steps towards a state-wide system are being based on sound experience, affordable systems and the pervasiveness of the carriers. By using the existing terrestrial telephone system for audio teleconferencing, electronic mail, facsimile and the postal service, it will be possible to reach almost everyone in the state. The different projects have been mindful that they should not exclude people through decisions to use technology which is not widely available. However, some experimentation with emerging technologies is to take place in developing courses to be used by the network. A major challenge for each of the projects will be for course designers to ensure the advantages of the interactive power of these technologies are built into the programs and their use is appropriate in terms of both the media and the educational objectives. These technologies can facilitate students’ interaction with teachers and other students in ways not previously possible and improve overall educational quality and access to programs.
National provision of taxation studies

The Australian Taxation Office (ATO), which has over 20,000 employees, has recently funded the establishment of a Bachelor of Taxation and Master of Taxation to be available by distance education mode through the University of New South Wales. UCCQ has been contracted as the DEC to develop and deliver the courses at a national level.

Students in these courses will receive relatively stand-alone study materials. The student support system to be developed will consist of a network of learning centres using ATO regional centres as shown in Figure 6. The functions of these centres in the delivery of the course are yet to be fully developed and articulated. However, it is envisaged the centres will be used for:

- Teletutorials
- Self-help groups
- Tutorials presented by local tutors
- Computer activities
- Sending assignments by electronic mail and facsimile
- On-line library searches
- Viewing videos made available from the University
- Computer-assisted learning

With such a network in place, the ATO could use the potential of these centres for the delivery of its own staff training and retraining programs and local workshops for the taxation industry.

In the future it is envisaged ATO learning centres will be equipped with two-way video and audio facilities. These will enable groups of students to interact directly with lecturers and students at other locations.
Conclusion

It is clear from these two examples advances in telecommunications and computing have the potential to remove distance as an obstacle to access and participation in education and make possible the provision of quality education and training programs no matter where they are used.

With the advent of the learning centre networks, there will develop a need for students to interact with others who are studying in the same courses. As a focal point, the open learning centre can assist students by creating national links. Scheduled interactions could take the form of tutorial sessions or informal sessions, where students with similar problems are encouraged to interact using the regular telephone, or even an audioconference. Students will have the opportunity for social interaction and the chance to discuss their work with other students. It may be premature to think in practical terms about home and work place delivery for education, but certainly in theory planning should now be conducted to develop the personal network. Basically, this network should provide the student access from both home and work.

Through computer access and a printer, the student will be able to receive study materials and other support from either the institution and/or a learning centre at designated times. With the inclusion of a facsimile card into the hard disc on a personal computer the student could return enquiries and assignments, and request other materials. It should also be possible to have voice interaction between lecturer, tutor and student at the desktop regardless of location, and ultimately combined video and audio access will be available. In time, the personal delivery network will probably form the dominant interface between the institution and the student. With such a development, greater emphasis will be attached to this network.

Factors that need to be considered are:

- Affordability of the telecommunication and computing equipment for the user
- Reliability of the existing communications and computing systems
- Ease of use (user friendliness) of technologies for student and teacher
- Availability of well developed learning systems that have made use of the appropriate computer and communications technologies

However, it is reasonable to expect that before the year 2000, the following advances will have been made in distance education:

- Students will be able to enrol on-line in a course and select a program of studies that would draw upon subjects available at different institutions;
- Study materials will become available to students via CD-ROM or a similar device and the student will immediately have access to all information needed for the course on a home computer;
- Students will send all assignments by electronic mail and have almost instantaneous feedback;
- Extensive use will be made of computer-based instruction;
- Students anywhere in Australia could discuss problems by video phone;
- Two-way video conferences will be commonplace;
- Extensive use will be made of the video-telelearning concept with groups of students linked to each other by video phones; and
- On-line access to library information will be commonplace.

To put these scenarios in place is the challenge faced by the staff at UCCQ engaged in distance education. We have always been at the forefront of developments in distance education, and we will certainly be contributing to developments in the future.

John Dekkers is Professor of Distance Education at the University College of Central Queensland.