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Australian Developments in Distance Education and Their Implications for Rural Schools

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Distance education has for many years played an important role in the delivery of education to rural parts of Australia. Recent developments in information and communication technologies, together with the advent of federally funded open learning at the tertiary level, are challenging traditional notions of distance education in Australia. These developments have many implications for Australian rural educators who must now consider their applications for teachers and learners in remote parts of the country.

Traditionally, rural and distance education have been seen as the provision of schooling for people who live in isolated areas. With changes in communication technologies, however, distance education is perhaps now inappropriately named; "tele-education" more accurately describes it in the late 20th century.[1] In Australia, open learning[2] has received commonwealth approval at the tertiary level and is likely to become an increasingly popular way of delivering education for the rest of this decade, particularly to non-urban areas of the country.

Distance education in Australia has always been paper-based, characterised by heavy dependence on postal deliveries of correspondence courses. Although many distance education courses are likely to continue along these lines, new electronic forms of delivery of education to students are currently being examined and evaluated. In the process, distance education in Australia is undergoing a transformation and, with this, the notion of isolation is being reconsidered. Changes in modes of delivery of distance education in Australia are likely to challenge the very notion of rural education.

Some of the more significant developments in contemporary distance education in Australia include (a) the use of new communication technologies, particularly computers, electronic mail (e-mail), and faxes; (b) changes in the concept of Distance Education Centres (DECs) and the advent of open learning; and (c) the concept of inter-institutional networking. These should be considered in relation to social and economic changes in Australia that are providing current developments in distance education with added significance: the rate of unemployment, currently estimated to be over one million people; the need to be competitive in international trade, particularly in relation to certain Asian economies; and the desire to strengthen industry-school relations.

For rural communities, there is the ever-present problem of rural-urban migration and the maintenance of viable rural infrastructures, an important aspect of which is the local school. For secondary schools in rural Australian communities, a major issue has traditionally been the relatively limited curriculum choice that has been made available and, in particular, the absence of full secondary school education that enables students to graduate and enter tertiary education institutions. With fewer curriculum choices and the absence of full, local, secondary education, many Australian rural communities can justifiably claim to have been educationally disadvantaged (Schools Commission, 1975; Stevens, 1989, in press).

[1]Tele-education refers to the application of communication technologies to the delivery of education to a learner who is being taught at a distance.

[2]Open learning is more of an approach to distance education than a particular discipline. Its aim is to make education more accessible to people who have in the past been excluded from traditional forms of education. Distance education takes place where the learner is remote from the teacher in the tele-learning process (Buckrell, Hamilton-Williams, McAulay, Prebble, & Rajasingham, 1992).

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Australian rural communities are not unique in facing problems of access to educational resources (Stevens, 1991); every country, except city states like Hong Kong and Singapore, seeks to find ways of addressing the issue of reaching equality of educational opportunity for its young people who are reared and educated beyond its urban areas. Distance education has for a long time provided rural Australians with possible ways of achieving the level of access to educational opportunities that are enjoyed by urban people. Today, however, the possibility of realising this elusive goal that has guided rural Australian education policy since Karmel (1973) brought it to the nation's attention is enhanced by recent developments in communication technologies.

Background to Distance Education in Australia

Distance education has played an important role in the provision of educational equity for learners who live in remote Australian communities. Higgins (1993) has noted that, in Australia, "adopting communications and transport technology is a theme running through rural education as Education Departments sought to maintain a service to remote places while keeping high staff costs to a minimum." Early distance education in Australia was described by Barlow in 1922:

> So that educational assistance may reach parents whose children are situated at a distance from permanent country schools and away from the tracks followed by itinerant teachers, typed copies of instructions, directions, explanations and illustrations, forming a series of lessons on the most important subjects included in the Primary School Curriculum, are posted each week from the Primary Correspondence School in Brisbane. . . . Typed copies of weekly lessons carefully graded are transmitted with accompanying directions, some intended for the guidance of parents. Written lessons when finished are then returned to the school for correction, comments and further advice. The marked lessons are then returned to the home from which they have been received. (from Higgins, 1993, p. 14)

Throughout the 20th century, correspondence schools provided families in remote Australian locations with their own system of education which, to this day, retains many of the original teaching methods, outlined above. The School of the Air began radio broadcasts in 1960 and quickly became an important dimension of distance education in Australia insofar as it enabled students, their parents, and teachers to maintain regular contact. In 1989, the School of the Air and the Correspondence Schools became the Schools of Distance Education. More recently, domestic satellites, personal computers, and modems have been utilised in the delivery of education to students in remote locations:

> The success of the radio experiment encouraged educators to use the first Australian domestic satellite for educational purposes. The Department of Education in Queensland purchased satellite time to conduct lessons through the Mt. Isa School of the Air for eight remote families. Teachers gave regular lessons to the isolated students using the satellite for two-way audio and one-way video transmissions, linked through studios in both Mt. Isa and Brisbane. The experiment succeeded in showing that the satellite could be used for educational purposes. (Higgins, 1993, p. 15)

The application of information and communication for the enhancement of education in Australia has received attention at the highest political levels. *An Apple for the Teacher* (Commonwealth of Australia, 1989), the publication of the Standing Committee on Employment, Education, and Training, linked technology and learning objectives. The committee drew attention to the need for effective management of technology if distance education was to succeed, as well as the importance of schools having compatible hardware and software and adequate preservice instruction for teachers. Teacher unfamiliarity with new information and communication technologies was noted, a matter that is likely to impede their introduction in Australian classrooms. D'Cruz (1990) examined the application of various types of communication technologies in the state of Victoria and pointed out the importance of communities cooperating in the choice of technology in small rural schools. The technological development of rural schools is closely linked to the economic advancement of rural communities (Department of Primary Industries and Energy, 1988; Parker, Hudson, Dillman, & Roscoe, 1989)

and to the issue of equity with other, particularly urban, communities (Darnell, 1992).

New Communication Technologies and Rural Education

At the present time, many new communication technologies are available in Australia. The problem for educators is knowing which ones are the most appropriate to use and in what combinations. To a considerable extent, distance education in Australia today is shaped by many combinations of technologies, put together in ways that were until recently not considered possible. In particular, the use of computers and, through them, e-mail, enables students and their teachers to communicate regardless of location. The addition of modems to computers to access libraries and data stored in various locations enables senior rural secondary students and their teachers to undertake research in major libraries as effectively as their urban counterparts. For some time now, facsimile machines have been part of the administrative structure of Australian schools; this development is a useful adjunct to the use of e-mail and the telephone. Perhaps more than most new technologies, it is the enhancement of the telephone that has facilitated new forms of communication.

The educational applications of television and radio are not new, but the development of storage facilities such as videos, tape recorders, and even telephone-answering machines (as well as reproductive technologies such as paper copiers) mean that the rural student and teacher today is as well served as his or her counterparts in Sydney or Melbourne. A particularly powerful new technology is the arrival of multimedia compact discs that have the capacity to store a variety of forms of material (e.g., sound, visual, and print) and that the student can access in a variety of ways. Multimedia compact discs are, as the name suggests, small and capable of storing previously unheard of amounts of material.

Changes in the Concept of Distance Education Centres (DECs) and the Advent of Open Learning

Since 1989, there have been eight officially designated DECs; this commonwealth-funded system was abandoned in 1993. Today, any university in Australia can be a provider of distance education and some of the former DECs have been absorbed into larger universities. The promotion of open learning by the commonwealth government is likely to impact not just on the higher education system, but also on schools in rural communities. Open learning in Australia is headed by a consortium known as the Open Learning Agency of Australia (OLAA). Backed by $50 million from the Department of Employment, Education, and Training, and with assistance from ABC radio and television, the OLAA is a company chaired by Monash University in association with six other universities that reach across the country from Western Australia to Queensland.

In effect, but not in name, the consortium is an open university that has been instigated without creating a new and expensive institution. Courses that are provided through the OLAA are made available by the member universities and students can access them, through the OLAA, anywhere in the country. For example, a student may take a course on renaissance literature from a Queensland university, a course in 19th century French history from a South Australian institution, and a third course in the history of science from a Western Australian university. Universities that comprise the consortium must ensure that students can obtain credit for work with them which may have been completed through several other members of the OLAA. There has, therefore, to be mutual recognition of courses provided by members of the consortium.

The OLAA is of interest to rural educators because of two features: it has an unlimited capacity to provide tertiary education studies, and it allows for low cost non-campus study. There is to be substantial use of television and some use of radio so that educational programmes can be made easily accessible and delivered anywhere in the country. There will be no open learning degrees in Australia, unlike Britain, as the OLAA is not a university in its own right. Students who take courses through the OLAA will eventually receive degrees from one of the members of the consortium. Although students are enrolled with the OLAA and not with a particular university, they can at any time request degree credit from one of the OLAA members.

In the future, DECs are likely to have a lot less influence on distance education policy in Australia than they have had in the recent past and are instead destined, in some cases, to becoming course development centres through which material will be prepared for open learners. Open learning, through the Monash University consortium, is therefore likely to lead a new generation of dis-

tance education in Australia, characterised by the networking of tertiary education institutions across the country. The concept of educational networking that is being developed by the OLAA will be of interest to rural educators.

Inter-Institutional Networking

Rural education has always been characterised by at least some degree of geographic isolation, particularly in states like Queensland and Western Australia. While rural schools will always remain geographically distant from urban centres, today they need not be isolated from schools and educational institutions in other parts of the country. As geographically distant schools become electronically linked or networked, the relationship between rural education and isolation will lessen. With the system of delivery that is being pioneered by the OLAA, together with the application of new communication technologies to education in Australia, rural educators are now in the position to being able to reconsider the organisation of their schools.

Rural schools will not be as isolated in the future as they have been in the past. Schools in rural areas can now be electronically linked to classes in other parts of the country, although the issue of time zones has to be considered. It is possible to receive a lesson in a rural school on, say, physics or Japanese grammar, taught from an urban classroom. Similarly, it is possible for urban students to receive a lesson on conservation, or the environment, from their rural counterparts and to ask questions, hold a tele-tutorial, or conduct a piece of research together. With schools linked for educational purposes, rural students are isolated only by geography.

Following the example of the OLAA, rural schools may in the future form consortia. This idea has particular attraction for the provision of senior secondary education in remote locations. Students of economics from, for example, Julia Creek in Queensland, Geraldton in Western Australia, Katherine in the Northern Territory, and Strahan in Tasmania could form a class by linking electronically to hold a tele-tutorial under the guidance of a tutor who could be located anywhere in the country. In another subject, some of these students may link with classes in other locations. In the same way as a Year 12 student in an urban secondary school moves from class to class for different subjects during a school day, rural students can move through his or her electronic classrooms.

Teachers in many rural schools today are able to pioneer the application of new communication technologies and, in so doing, become leaders in their profession in the area of networked education and the delivery of information. With the advent of open learning in the country's higher education system, the idea of networking between educational institutions will become widely accepted. It is in the country's rural schools that the application of this skill is particularly useful as it has the potential to considerably expand the curriculum. In some cases, inter-institutional alliances may develop whereby two schools share a scarce resource such as the appointment of a Japanese language teacher who would be expected to conduct some classes using electronic media to enable students in another school to join in his or her classes. An example of this in Australia's tertiary education sector is the joint teaching of a Master's degree in distance education by the University of South Australia and Deakin University. Hopefully, the value of expertise developed by teachers in rural schools in the accessing of information electronically and the running of teleclasses will be recognised by the teaching profession.

Vocational choice has for a long time been a problem for rural senior secondary school students (Stevens, 1989; Stevens & Mason, 1992) and this has been a common reason for rural-urban migration. Teachers are not usually skilled in the provision of vocational advice and assistance in the transition from school to work. Advances in communication technologies can assist young rural people and their families to obtain up to date information about non-local careers and to make decisions about them. One way in which this could happen is through peer interaction during tele-tutorials.

Rural communities in many parts of Australia have for decades suffered the effects of out-migration. When a local school is run down or perceived to be inferior to other schools by a rural community, people will consider migrating for the sake of their children's education. If, however, rural schools are seen to be receiving the same lessons as students in urban classrooms—as described above—many families may reconsider the costly move to an urban area.

Implications for Further Research

The changes that are currently taking place in the relationship between Australian rural and distance education have a number of implications for further research. At present, a dominant characteristic of the relationship between rural and distance education is the gap separating developments in information and communication technologies and their classroom applications. Technological developments are ahead of educational planning and teacher education. While there are many examples of ways in which distance is being reduced in outback Australian schools through the use of new technologies, there is little in the research literature to guide teachers, teacher educators, and educational administrators in the choice of appropriate technologies.

There is little in the educational literature to guide the current development of inter-institutional teaching in rural communities, although there have been some recent reports on this matter in Australia (Cruise, 1991). The advent of inter-institutional teaching has implications for preservice and inservice teacher education, the development of curricula, and the assessment of learning outcomes.

Research is needed regarding rural schools' application of information and communication technologies in extending curriculum choice at senior high school level, as well as in the assessment of learning outcomes in relation to urban schools. The outcome of such research is likely to influence the extent to which Australian state and commonwealth governments support the upgrading of technology in remote schools.

As new technologies increasingly influence the organisation of education in rural schools, it is appropriate that the requirements of particular groups—girls, Aborigines, and children with special learning needs—be assessed in relation to its introduction.

Vocational choice and the issue of post year ten education has been a significant issue in Australian rural high school education (d'Plesse, 1993; Stevens, 1989; Stevens & Mason, 1992). In particular, the use of modems on rural school computers and the extent to which interactive distance education technology makes non-local worlds and occupations "real" for isolated students requires investigation. Longitudinal research is needed to determine whether rural working class students in the future enter tertiary educational institutions and professional occupations in numbers that approximate those of their urban counterparts.

Little is known from rural parents' and students' perspectives how, in qualitative terms, information and communication technologies reduce educational isolation. This information would be of value to all professionals involved in the delivery of education in remote Australian locations as well as to companies that sell technology. It is possible that increased use of technology may actually increase educational isolation for some rural students and their families if its application reduces teacher contact. Furthermore, the application of increasingly sophisticated information and communication technologies in schools in small rural communities may contribute to the isolation of students from their parents who are not introduced to either its use or made aware of its educational and vocational potential.

New technologies in rural schools are unlikely to be fully utilised unless attention is given to the professional development of teachers in their selection, application, and assessment in relation to teaching and learning. Research into the changing needs of the rural teaching profession, with particular attention to these matters, would be very timely. New technologies provide ways in which rural teachers can access professional development courses (Prain & Booth, 1993).

Conclusion

Changes in communication technologies and in the nature of distance education can be expected to influence the delivery of education within rural Australian schools for the rest of this decade. Communication technologies can be assembled in a variety of ways to facilitate the delivery of education anywhere in the country. Of particular interest to Australian rural educators is the advent of open learning in the tertiary sector. This provides a model for the delivery of education in non-urban locations as well as a framework for inter-institutional cooperation, with many potential applications for rural schools.

Australian rural educators now face the task of realising the educational potential of recent technological advances. This will require a reassessment of the role of the teacher in rural schools and, indirectly, to the rural economy. Technology will never replace the teacher in any classroom, but with careful planning and judicious use, it can provide ways of enhancing rural education.

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