TECHNOLOGY AND DISTANCE EDUCATION

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Under the Distance Education Plan of the NSW Department of School Education, the provision of a full secondary education to rural students has been enhanced through the use of technology based communication networks. In the Riverina region of New South Wales, a pilot project linking three Central Schools into a cluster commenced in 1990. This pilot project is known as the Telematics Access Program and is similar to other projects in operation in Victoria and Queensland. Each school is linked to the other schools in the cluster by teleconference, fax and electronic blackboard computer facilities.

Through the schools in the cluster sharing teacher expertise and using the technology to link students and teachers, a comprehensive Years 11 and 12 curriculum has been offered to these students. Students can select from 17 subjects currently available.

Benefits to the School and Community

Through the introduction of the Telematics Access Program, each participating central school has seen many benefits for the school, students, teachers and community. Several significant benefits for Ariah Park Central School are listed below.

1. Being able to offer a Years 11-12 (HSC) Education.

   This simple fact means many benefits to each school and its community. Students who may not have elected to complete an HSC education (who may have tried to get work) elect to continue their education and obtain the Higher School Certificate. (In the current economic circumstances this is an important consideration for each school as there have been many students who have continued on knowing work is not available.)

   Students who have traditionally boarded away can now complete their secondary education at the local government central school. This reflects positively on the local school and on the state education system. Many students have commented on the benefits of being able to complete their secondary studies with the support of their home environment.

2. Able to broaden the subject range available.

   Through the Telematic Access Program more subjects can be made available to students. The Program gives each school access to more staff thus broadening the range of expertise available for teaching students and available to assist students (including those who may be studying some subjects via correspondence).

3. The positive impact of having Years 11-12 in the school.

   The presence of the Year 11 and 12 groups and their impact on the other K-10 students in the school has been very positive. The senior students have set good examples for the younger students and this has, in turn, brought about better attitudes toward school by the younger students.

The senior students have exhibited leadership, offered assistance, set role models and caused more involvement (greater participation) in numerous school and community activities.

4. The accompanying learning about and understanding of technology.

   Due to the nature of the operation of the Program, the students have developed their understanding and appreciation of the use of technology considerably. The technology becomes "transparent" - the means to an end. Student focus on the lesson content and not the mode of delivery. A positive consequence of reaching this point is the students have become very comfortable users of technology.

5. Building bridges between small communities.

   The Access Program has improved the links between the three Riverina communities involved. Not only for the students, but also for the teachers (professional benefits) and the parents. This has led to mutual support and special links being established overcoming some of the problems previously experienced by small schools and communities.

6. There is no doubting the Program has had a very positive impact on parents' perceptions of the school. Ariah Park is now regarded as a "whole school" - it goes through to Year 12. Parents who previously sent their children away to complete secondary education or had them sit on buses for up to an hour and a half daily now elect to send their students to the school. Parents from the nearby small community of Barmedman see the school as a better option for secondary education now that the school goes through to Year 12. The school, like Barmedman school, is a small school and is more akin to the learning environment experienced during their primary education. Many parents have indicated they feel their student may be "lost" in the crowd at the larger schools, whereas at Ariah Park each student is known well by all staff and students.

7. Telematic Education - Greater Responsibility.

   Because of the nature of studying via Telematics students take more responsibility for their own education. The students develop an awareness early on of the ownership they need to have of their school achievements. This holds students in very good stead for later study at the tertiary level: indeed for life itself.

8. Professional opportunities for staff members.

   Ariah Park Central school is in an isolated area. Many teachers would not be prepared to come to a school in an isolated area, particularly if there was no opportunity to teach the HSC subjects. Staff currently involved at the school have found the opportunity to teach Years 11 and 12 a new challenge and one most welcome.

   Staff members have increased their understanding and use of technology since the inception of the program. This has not been restricted to staff members involved in the telematics program. There has been a "spill over" effect directly onto other staff members.

   The staff have benefitted by the resultant liaison with other schools. The large increase in communication between the schools has led to improvements in the quality of programs offered to our students (not only those in Year 11 and 12).

9. Benefits to the community.

The contribution to the community made by the Year 11 and 12 students is quite significant and should not be underestimated. Without the Access Program many of the people of this age group would have moved away.

Issues

With the introduction of the Telematics Access Program, some implementation, organisational and teaching issues relating to the program must be considered.

1. Staff Expertise and Training

Fortunately, the recent state computer education program has assisted in raising the computing expertise of staff at Ariah Park Central School. Professional development programs in the development of computer usage skills and the mastery of word processing in particular were essential.

Additionally, it was necessary for the staff to become familiar with the software program central to the delivery of the telematic lessons - *Electronic Classroom*. Though not difficult to the computer-literate teacher, a familiarisation course was warranted. This software makes it possible to use sketches and diagrams in the delivery of lessons. The inclusion of some training on the use of a scanner was also warranted.

Communication is one of the most important processes occurring in any classroom. The literature on teaching methods has reported on the value to the communicative process of non-verbal gestures. In the delivery of telematic lessons non-verbal gestures are absent. This presents challenges to the teacher who is trying to confirm how well a particular concept has been understood during a lesson. New teaching techniques need to be devised, new strategies considered and ideas shared.

In summary, teachers need to be provided with opportunities to develop their expertise in three stages:

i) a basic computer awareness and skills development course;
ii) a course providing familiarisation with *Electronic Classroom* and scanning; and
iii) a course focussed on the development of teaching strategies for use when delivering lessons via telematic means.

2. Lesson Preparation Time

The preparation of telematic lessons involves the preparation of not only worksheets and lesson notes (which may be faxed) but also the preparation of "screen exercises". This may involve scanning images, generating text for the students and sequencing screens of information. These processes which are required for each lesson involve the teacher in additional preparation time beyond that necessary for face-to-face teaching A preparation allowance for telematic teachers of 2 periods per week for each telematic subject is recommended.

3. Technological Needs

Since the program began at Ariah Park the use of computer technology has increased significantly amongst the students in the program. It has become a part of their everyday life.

Not only do the students use the computer for receiving lessons, but also they wish to use the technology in the preparation of their responses for assigned work such as essays, practical reports and assignment requirements. The school is experiencing difficulties in making available sufficient computers to the students so that both needs can be met within reasonable deadlines.

4. Technology Limitations

Telephone lines are in constant use when using the telematic facility. The quality of the phone lines has hindered lessons (causing "drop outs"). The number of phone lines going into and out of the small towns in which these schools are located is limited. The school periodically has trouble getting a line out or, alternatively the townsfolk have trouble getting a line.

5. Organisational Needs

Allocation of staff to telematic teaching, preparation requirements for practical lessons, movement of student assignments between schools, supervision of students when not involved in telematic or face-to-face lessons, communication between staff members of each school and lining up timetables at the three participating schools have been some of the organisational issues that the schools have attempted to resolve.

6. Student Support

Students who study via telematics find themselves in a "middle ground" situation between correspondence study and face-to-face lessons. Some see this situation as an ideal preparation for tertiary style study commitment, though it needs to be remembered that not all students staying on in Years 11 and 12 seek to pursue tertiary studies . A well structured program of support needs to be established for the students.

7. Parent and Community Education

The school involves the parents and potential Year 11 students in an awareness raising session towards the end of the Year 10 school year. An understanding of the student's experiences for the parents means they are in a better situation to be supportive of their child in their studies. We have also found that the community generally have wanted to know more of the telematic system and also of its impact on other sections of the school.

Concluding Comments

The Telematic Access Program has brought a large number of benefits to the school and communities of which it is a part. The staff and parents of the schools involved have positive feelings about the Program, but see the need for ongoing refinement and support. With commitment and time the Program will provide high quality educational opportunities to students in these areas.

Postscript

With the release of the 1991 HSC results, the Telematic Access Program received the first tangible feedback on its succes. The school community of Ariah Park was extremely pleased with the outcomes. Both students were offered places in further tertiary studies. One student has deferred for twelve months while the other student is commencing a course in Canberra.