This book documents the findings of a survey into current practice in the use of telematics (the use of realtime telecommunications to provide interaction between teacher and learner and between learners) to support distance learners in the AMEP distance learning program using the core course materials. The research revealed awareness of the potential for new technologies to enhance the distance learning experience. While some reservations were exposed, due to awareness of the constraints which limit the use of telematics, enthusiasm for its continued application was widespread from both teachers and managers.

The report is relevant reading for distance learning teachers as well as anyone interested in the potential of telematics for enhancing the experience of distance learning.

Other titles in the series are:

1. *Language Audits and Industry Restructuring*  
   Giselle Mawer, 1991

2. *Computer-enhanced Language Assessment*  
   Chris Corbel, 1993

3. *Teachers Interactive Decision Making*  
   David Nunan, 1993

4. *Learner Pathways in the Adult Migrant English Program*  
   Lilli Lipa, 1993

5. *Non-language Outcomes in the Adult Migrant English Program*  
   Elaine Jackson, 1994

6. *From Proficiency to Competencies: A Collaborative Approach to Curriculum Innovation*  
   Youle Bottomley, Jeanette Dalton and Chris Corbel, 1994

7. *The Process Syllabus in Action*  
   Diana Simmons and Sylvia Wheeler, 1995

8. *The Computing Practices of Language and Literacy Teachers*  
   Chris Corbel, 1996

9. *Investigating Learner Outcomes for Clients with Special Needs in the Adult Migrant English Program*  
   Pam McPherson, 1997

Ann Nicholson has been working in Distance Learning in Western Australia for a number of years. She has been involved in several projects which have researched the use of new technology to support adult ESL and literacy learners.
Current Practice in the Use of Telematics to Support Distance Learners in the Adult Migrant English Program

Ann Nicholson
Current Practice in the Use of Telematics
to Support Distance Learners in the Adult Migrant English Program

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The National Centre for English Language Teaching and Research (NCELTR) is a Commonwealth
Government-funded Key Centre of Teaching and Research established at Macquarie University in
1988. The National Centre forms part of the Linguistics discipline within the School of English
and Linguistics at Macquarie University. In 1989, the National Curriculum Resource Centre
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Chapter 1

The context of the report

Introduction

The importance of the use of new technology to enhance the distance learning environment has now been acknowledged. A major advantage of using new technology with distance learners is that it allows the creation of cooperative learning opportunities where learners can overcome the barriers of distance and practise real world language skills with fellow learners. Distance learners have expressed the need to feel part of a group, to be able to discuss problems and take part in group activities.

In a study of distance learners in the Adult Migrant English Program (AMEP) (Harris 1994), the benefits of peer support were noted and recommendations were made for the use of new technology to create learner networks. Subsequent national research investigated the use of new technology with a group of AMEP distance learners (Anderton and Nicholson, 1995). A range of telematic communication systems were trialed and each form of technology revealed positives and negatives for continued use. Evaluation by students, teachers and observers reported increased motivation, enthusiasm and higher levels of interaction from the learners involved (Bailey, 1996).

This report investigates current practice in the use of telematics throughout Australia for the support of distance learners in the AMEP. It describes a survey into the use of telematics undertaken in 1995, gives the findings of that survey and makes recommendations for future practice within the AMEP.

Background

The AMEP has evolved into a highly diverse program which aims to provide a service which is flexible and adaptable enough to accommodate the range of learning needs and skills of client groups. This includes preparation for the kind of continued learning where an emphasis is placed on encouraging students to become self-directed learners, able to recognise and use the many resources around them for on-going language acquisition. This pedagogical approach is well established in the core course materials used in the AMEP Distance Learning Program. The course
is called *It’s Over to You*, reflecting the expectation that distance learners will take responsibility for managing their own learning, albeit with skilled teacher scaffolding of their efforts. The original designers of *It’s Over to You* recognised the importance of the need for adequate support services for students who enrolled in the Distance Learning Program. They anticipated that this support would include the provision of opportunities for communication not only between learners and teachers, but also between learners themselves (Watts 1988). At that time, real-time communication between teacher and learner at a distance consisted of telephone interaction, but it was predicted that as technology developed, so too would the range of communicative modes used. (Kleist 1986). More recently the guidelines for the writing of Stage 3 of *It’s Over to You* reiterated the need for the provision of an adequate and appropriate support system for learners.

Technology has developed rapidly since the implementation of *It’s Over to You* in 1988. However, research for this project clearly reveals that the range of communication modes used to support distance learners in the AMEP has progressed more slowly than was envisaged. A survey of AMEP distance learning teachers suggests that real-time communication rarely extends beyond teacher/learner interaction by phone and fax, with more emphasis placed on the relationship between the teacher and the learner than between learner and learner. As yet, few teachers in the AMEP Distance Learning Program have experience of technologies that could be used to facilitate interaction between their learners. This begs the question of what a system of adequate and appropriate support for these learners should be.

In his opening address at the 1994 Language in Distance Education Conference, Professor Chris Candlin of Macquarie University stated that the new *It’s Over to You* materials recognise that learners understand best when they actually do something with the skills they are developing. To this end, each unit of *It’s Over to You* includes a selection of real world tasks based on the language skills covered in the unit. These tasks are called Action Projects. The learners are free to select an Action Project which will extend the practices of the course materials into their local communities. They are then encouraged to share their experiences with their teacher and with other learners. Candlin suggested that the use of new technologies offers increasing opportunities for supporting teacher/learner and learner/learner networks.

Networking is considered to be an essential ingredient in the provision of effective distance learning. It is only through interaction and dialogue with others that learners can confirm what they know and what they can do. In wider society adults are constantly learning from each other through informal interactions, discussions, conversations etc. It would seem that providing opportunities for distance learning students to help each other learn by becoming partners in discussion groups organised via telematics, as suggested by Rado and Foster (1995), could be of benefit to the learners.

The unsatisfactory emotional experience of attempting solitary study was described as an inhibiting factor in a study of learner drop-out in the AMEP Distance Learning Program (Harris 1994). In this study, learners indicated...
that making contact with other learners and with other English speakers would be a way of gaining emotional support and obtaining the language practice so essential for the development of confidence and reinforcement of the language in their learning materials. In her interviews with learners in the AMEP Distance Learning Program, Harris recorded expressions of need for greater peer contact. Seeking ways to provide opportunities for real-time student/student interaction is an area that could be pursued by distance learning teachers with the aim of extending the support currently offered.

Key terminology

Telematics

The term telematics is used to describe teaching and learning environments that employ real-time telecommunications to provide interaction between teacher and learner, and learner and learner (Oliver and Reeves 1994). Communication between the teacher and learner/s is achieved by a range of technologies, all of which involve the transfer of data by means of telephone links. The technologies, known collectively as telematics, are briefly outlined below.

Audioconferencing

This is the simplest and most cost-effective form of new technology. Using Telstra’s Conferlink service, real-time communication between participants can occur without anyone having to leave home. Alternatively, teachers with a conference phone can link up with two learners, each at a different site, and enjoy a three-way conversation without the need for Telstra’s assistance.

Audiographics

Audiographics (computer-conferencing) is a technology which permits audio and computer communication between remote sites. Two telephone lines are required at each site. An audio (telephone) link is established, then a modem attached to a second telephone line is used to link the computers. With appropriate modem support, the host computer can be linked to between one and five additional computers at separate sites. All computers in the link can share and transfer text and graphics. Whatever appears on one screen appears simultaneously on the remote screens. In effect, the screens can become ‘whiteboards’ as used in a classroom setting. With audiographics, all text-based interaction via the computer is supported separately by the accompanying audio link.
Software packages for audiographics

Electronic Classroom®
Electronic Classroom® is a computer-conferencing software package designed in conjunction with Australian education authorities. It can only be used in the Apple Macintosh computer environment. It is the software most frequently used in the majority of audiographic programs in Australian schools. In effect it converts computer screens to whiteboards. Information typed, drawn or pasted at one end can be seen simultaneously at the remote site/s. Text can be edited at either end. Sound, video and still images can also be incorporated.

Smart 2000
Smart 2000 is a computer-conferencing software package with the same capabilities as those described for Electronic Classroom®. It is designed for the Windows (PC) environment. Though more sophisticated than Electronic Classroom®, it has not been developed specifically for educational purposes and is not as well known in Australian learning environments.

Videoconferencing
Compressed digital video is the type of videoconferencing considered in this report. Live video and audio can be transmitted simultaneously over special Integrated Services Digital Network (ISDN) telephone lines. Compressed video can be combined with multiple media such as a document camera for the transmission of text and graphics, or views of three dimensional objects. Computer data can be sent, and videotapes can be transmitted and viewed. Participants take part in a two-way interaction where everyone can see, hear and speak with each other in real-time. This form of videoconferencing is not full broadcast quality. The picture can seem somewhat fuzzy and there is a slight lack of sound/picture synchronisation.

Facsimile (fax)
This technology enables the immediate transfer of text and graphics between individuals.

Bulletin board
An electronic bulletin board is a computer-based system which anyone with a computer, a modem and a telephone can access. Users can exchange electronic mail (E-mail), read public notices, copy information of interest and post information for general consumption. NCELTR operates a free bulletin board service. Users can communicate generally and access a range of databases. In addition a special user group has been formed for communication between AMEP distance learning students only. Many TAFEs have set up bulletin boards where students can communicate with teachers and other students, download information and post items on the bulletin board.
Chapter 2

Current practice in the use of telematics

A survey of all AMEP distance learning teachers was carried out by means of a questionnaire (Appendix 1). The survey questions sought factual and subjective data by means of a range of open and closed questions. The return rate was excellent, with all but two teachers responding. A separate brief questionnaire was sent to the managers of AMEP programs in each state and territory (Appendix 2). Here the response rate was not as high.

An analysis of the questionnaires and a discussion of the issues that were raised through the survey is provided in this chapter. The key issues which impact on current practice in the use of telematics to support distance learners in the AMEP were found to be as follows:

Access

There are various limitations on access to telematics equipment for both teachers and learners.

Availability

A complete range of required telematics equipment is not available to all teachers and learners. This raises questions of equity.

Costs

Costs associated with transmission, and with the purchase, maintenance and up-grading of equipment are a crucial issue.

Awareness

Without hands-on experience, teachers and students cannot realise the potential and limitations of telematics. Some teachers returned minimal responses because they had no experience or awareness of teaching with telematics.
Training

The provision of training in the use of telematics, and maintenance of skills are requirements for learners and teachers.

Technical support

The lack of specialist technological support for teachers and learners using telematics is a major issue.

Teacher time

The amount of time required to plan lessons and coordinate groups of participants was seen as a drawback to the use of telematics.

Satisfaction with the status quo

While some respondents felt that the level of student support currently offered was satisfactory, there was acknowledgment of the paucity of opportunities for learner/learner interaction.

Findings of the survey

This section contains details of teacher responses to the questionnaire.

Distribution of teachers in the AMEP Distance Learning Program

<table>
<thead>
<tr>
<th>State/Territory</th>
<th>Full time</th>
<th>Part time</th>
<th>Full time equivalent</th>
</tr>
</thead>
<tbody>
<tr>
<td>New South Wales</td>
<td>10</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Northern Territory</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Queensland</td>
<td>4</td>
<td>2.8</td>
<td></td>
</tr>
<tr>
<td>South Australia</td>
<td>2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tasmania</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Victoria</td>
<td>8</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Western Australia</td>
<td>2</td>
<td>2</td>
<td>3</td>
</tr>
</tbody>
</table>

**Total number = 31**

*In New South Wales and Western Australia, the majority of teachers are employed on a full-time basis in the Distance Learning Programs, but in all other states teachers work part-time.*

It is important to note that in most states teachers have additional teaching or administrative duties in other AMEP program areas. In Victoria the teachers are at eight separate sites and for most of them, *It's Over to You* is just one of a range of programs they deliver. Some New South Wales
teachers are also working in WELL-funded (Workplace English Language and Literacy) work-place programs. In Tasmania and the Northern Territory the teachers have only a few hours in the Distance Learning Program and have full administrative duties as well. Two teachers did not respond to the survey questionnaire.

Telematics experience

<table>
<thead>
<tr>
<th>State &amp; no. of tchrs</th>
<th>Audio conf</th>
<th>Audio-graphics</th>
<th>Video conf</th>
<th>Fax</th>
<th>Bulletin board</th>
</tr>
</thead>
<tbody>
<tr>
<td>NSW</td>
<td>1 2 4 7 10</td>
<td>1 2 1 1 1</td>
<td>1 4 3 3 1</td>
<td>1 2</td>
<td>4 1 3 1 1 1</td>
</tr>
<tr>
<td>NT</td>
<td>9 2 1 1 1</td>
<td>5 3 2 1 1</td>
<td>1 2 1 1 1</td>
<td>1 2</td>
<td>1 2 1 1 1 1</td>
</tr>
<tr>
<td>QLD</td>
<td>4 4 4 4 4</td>
<td>4 4 4 4 4</td>
<td>4 4 4 4 4</td>
<td>4 4</td>
<td>4 4 4 4 4 4</td>
</tr>
<tr>
<td>SA</td>
<td>2 2 2 1 2</td>
<td>2 2 2 2 2</td>
<td>2 2 2 2 2</td>
<td>2 2</td>
<td>2 2 2 2 2 2</td>
</tr>
<tr>
<td>TAS</td>
<td>1 1 1 1 1</td>
<td>1 1 1 1 1</td>
<td>1 1 1 1 1</td>
<td>1 1</td>
<td>1 1 1 1 1 1</td>
</tr>
<tr>
<td>VIC</td>
<td>2 1 1 1 1</td>
<td>1 1 1 1 1</td>
<td>1 1 1 1 1</td>
<td>1 1</td>
<td>1 1 1 1 1 1</td>
</tr>
<tr>
<td>WA</td>
<td>1 1 1 1 1</td>
<td>1 1 1 1 1</td>
<td>1 1 1 1 1</td>
<td>1 1</td>
<td>1 1 1 1 1 1</td>
</tr>
<tr>
<td>TOTAL</td>
<td>29 6 2 21</td>
<td>16 9 4 9 7 13</td>
<td>2 1 4 22</td>
<td>10 2 12 5</td>
<td></td>
</tr>
</tbody>
</table>

N = None
T = Training only
O = Occasional use
R = Regular use

Teachers were asked to indicate their experience ‘as distance learning teachers’ in using the five technologies. Use of the telephone was not included as this is an integral part of the It’s Over to You course design and it is known that all teachers are in regular telephone contact with their students. The significance of ‘as distance learning teachers’ was misunderstood in some cases. The intention was to gather details of experience in use of the technologies with distance learning students specifically, rather than general experience. Some teachers qualified their responses with additional information.

Although three teachers ticked ‘occasional use’ of audiographics, they said that they had not used audiographics since their involvement in the 1994 NCELTR project on new technology (Anderton and Nicholson 1995). One teacher indicated experience with audioconferencing and fax, and another with videoconferencing, but not since joining the Distance Learning Program.

The survey indicates that facsimile machines and audioconferencing are the technologies with which the majority of teachers have had most experience. However it appears that only Western Australia and Queensland arrange audioconferencing for learner/learner interaction.
The survey shows that there is no regular use of audioconferencing, videoconferencing or audiographics by the majority of the teachers, and while the bulletin board service is used regularly by five teachers, this experience is not for direct support of distance learners.

Availability of telematics equipment in distance learning workplaces

### Telephone

<table>
<thead>
<tr>
<th>State</th>
<th>Telephone</th>
<th>Personal use</th>
<th>Hands free</th>
</tr>
</thead>
<tbody>
<tr>
<td>NSW</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>NT</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>QLD</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>SA</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>TAS</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>VIC</td>
<td>Yes</td>
<td>Yes (4) No (3)</td>
<td>Yes (2) No (5)</td>
</tr>
<tr>
<td>WA</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
</tbody>
</table>

Telephone access is available for all distance learning teachers to maintain teacher/learner interaction and support. Telephone tutoring is an integral part of the It’s Over to You course (Kleist 1985). It is recommended that each teacher has a telephone extension of his/her own. A hands-free (loudspeaker) phone is a necessity for audiographics communication. With the exception of some of the Victorian centres, appropriate equipment is available for audioconferencing in all states.

### Computers

<table>
<thead>
<tr>
<th>State</th>
<th>Yes/ No</th>
<th>On desk</th>
<th>DL use only</th>
<th>Macintosh</th>
<th>IBM</th>
</tr>
</thead>
<tbody>
<tr>
<td>NSW</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>NT</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>QLD</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>SA</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td></td>
<td></td>
</tr>
<tr>
<td>TAS</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
<td></td>
<td></td>
</tr>
<tr>
<td>VIC</td>
<td>Yes</td>
<td>Yes(3)</td>
<td>No (4)</td>
<td>Yes (2)</td>
<td>Yes (5)</td>
</tr>
<tr>
<td>WA</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

With the exception of Tasmania and four of the Victorian centres, all Distance Learning programs have their own computers. Tasmania and the four Victorian centres have access to shared computers. The majority of programs have Macintosh computers; Tasmania, Queensland and five Victorian centres are using IBM machines. The educational software program most commonly used for audiographic communication is known as Electronic Classroom®. It is designed to operate in the Macintosh environment and it was used in the NCELTR research project which looked at the use of new technology with AMEP Distance Learners (Anderton and Nicholson 1993 1995).
Computers (networked or stand alone)

<table>
<thead>
<tr>
<th>State</th>
<th>Networked</th>
<th>Stand alone</th>
<th>With CD Rom</th>
</tr>
</thead>
<tbody>
<tr>
<td>NSW</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>NT</td>
<td>Yes</td>
<td></td>
<td></td>
</tr>
<tr>
<td>QLD</td>
<td>Yes</td>
<td></td>
<td></td>
</tr>
<tr>
<td>SA</td>
<td>Yes</td>
<td></td>
<td>Yes</td>
</tr>
<tr>
<td>TAS</td>
<td>Yes</td>
<td></td>
<td></td>
</tr>
<tr>
<td>VIC</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>WA</td>
<td>Yes</td>
<td></td>
<td>Yes</td>
</tr>
</tbody>
</table>

The question caused confusion. Its purpose was to gain some indication of computer suitability and availability for audiographics. Some computers attached to the Australian Reporting and Management System (ARMS) network may not be available for interactive teaching purposes. It was intended to investigate whether computers were attached to the ARMS network. Some contradictory responses were received, but these may indicate that more than one computer is available in some workplaces. It would appear that the majority of states have computers with the capacity for delivering audiographics support.

Modem

<table>
<thead>
<tr>
<th>State</th>
<th>Yes</th>
<th>Speed</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>NSW</td>
<td>✓</td>
<td>14.400</td>
<td></td>
</tr>
<tr>
<td>NT</td>
<td></td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>QLD</td>
<td>✓</td>
<td>9600</td>
<td></td>
</tr>
<tr>
<td>SA</td>
<td>✓</td>
<td></td>
<td>✓</td>
</tr>
<tr>
<td>TAS</td>
<td>✓</td>
<td>not known</td>
<td></td>
</tr>
<tr>
<td>VIC</td>
<td>✓</td>
<td></td>
<td>✓</td>
</tr>
<tr>
<td>WA</td>
<td>✓</td>
<td>2400</td>
<td></td>
</tr>
</tbody>
</table>

There is potential for the use of audiographics in several states.

Access to Internet and/or ELSINET bulletin board service at NCELTR

<table>
<thead>
<tr>
<th>State</th>
<th>Internet</th>
<th>ELSINET</th>
</tr>
</thead>
<tbody>
<tr>
<td>NSW</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>NT</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>QLD</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>SA</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>TAS</td>
<td>No</td>
<td>No (connection soon)</td>
</tr>
<tr>
<td>VIC</td>
<td>No (6 teachers)</td>
<td>Yes (1 teacher)</td>
</tr>
<tr>
<td>VIC</td>
<td>No (6 teachers)</td>
<td>Yes (1 teacher)</td>
</tr>
<tr>
<td>WA</td>
<td>No</td>
<td>Yes</td>
</tr>
</tbody>
</table>
Internet access is available in three states and the ELSINET bulletin board service is utilised in three states. An enquiry to NCELTR revealed that although access to the bulletin board service could be provided to South Australia and the Northern Territory, neither program had a separate modem available and thus access is prohibited.

### Technical support in the workplace

<table>
<thead>
<tr>
<th>State</th>
<th>Yes</th>
<th>No</th>
<th>If no, where is help obtained?</th>
</tr>
</thead>
<tbody>
<tr>
<td>NSW</td>
<td></td>
<td>✘</td>
<td>Colleagues, manufacturers, software developer</td>
</tr>
<tr>
<td>NT</td>
<td></td>
<td>✘</td>
<td>Colleagues</td>
</tr>
<tr>
<td>QLD</td>
<td>✘</td>
<td></td>
<td>Data manager, colleagues, technical services at other institutions</td>
</tr>
<tr>
<td>SA</td>
<td>✘</td>
<td></td>
<td>Another department</td>
</tr>
<tr>
<td>TAS</td>
<td>✘</td>
<td>(6)</td>
<td>Data manager, colleagues at other institutions, software developer, NCELTR</td>
</tr>
<tr>
<td>VIC</td>
<td>✘ (1)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>WA</td>
<td>✘</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Queensland and Victoria are the only states that have technical support provided. The survey indicated a serious deficiency in the area of on-site technical support for distance learning teachers. Many teachers expressed frustration at the time wasted in trying to solve problems themselves, and in waiting for assistance to be provided by colleagues, or by technicians from other departments.

### Access to equipment at another department or institution

<table>
<thead>
<tr>
<th>State</th>
<th>Audiographics</th>
<th>Videoconferencing</th>
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</tr>
<tr>
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</tr>
<tr>
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<td>WA</td>
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The survey showed that audiographics facilities are available to the distance learning teachers in four states and that access to videoconferencing facilities is available to teachers in five states.

### Client access to telematics support

Participants were surveyed to ascertain whether there was provision of support by telematics to students either at home or at work. At present there is no provision of distance learning support via audiographics or bulletin board to clients in their homes.
No AMEP Distance Learning Programs are offering tuition via audiographics on a cost-recovery or fee-for-service basis.

In New South Wales, some students have used the ELSINET Bulletin Board Service to communicate with TAFE students in other parts of the state, and there is progress towards the use of another Bulletin Board Service to provide support to workplace literacy students employed by the Sydney Rail Authority.

In Western Australia, two teachers have had the opportunity to use audiographics over an extended period through their involvement in NCELTR projects which investigated the potential of new technologies for program delivery. While use of audiographics is not intensive, one teacher has maintained involvement and continued the development of practical skills. She has used the technology (since the projects in 1993 and 1995) to support three students living in rural Western Australia. Cooperation was gained from local schools for AMEP student use of their audiographics facilities and costs of transmission were borne by the Distance Learning Program. Currently one teacher in Western Australia is trialing interaction with a learner via E-mail.

<table>
<thead>
<tr>
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<tr>
<td>QLD</td>
<td>Yes</td>
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<tr>
<td>SA</td>
<td>Don’t know</td>
<td></td>
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</tr>
<tr>
<td>VIC</td>
<td>Yes (1 teacher)</td>
<td>Don’t know (6 teachers)</td>
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</tr>
<tr>
<td>WA</td>
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</table>

Most teachers were aware of agencies where telecommunications equipment could be accessed by distance learning students.

Comments from AMEP distance learning teachers

Teachers were asked to give comments on what they felt were the most significant issues impacting on the use of telematics to support distance learners in the AMEP. Their responses have been summarised (Appendix 3).

Comments from managers

A separate response on the use of telematics to support AMEP Distance Learners was sought from AMEP managers. The use of telematics requires the provision of extra financial resources for preparation and delivery time, for purchase of hardware and software, for training and for transmission costs. Since budgetary decisions are made at a management level, it was decided that input from this sector on the use of telematics to support distance learners, would be useful. Information on the key person in each state was provided and a brief survey was sent to each one (Appendix 2). Managers’ responses to the survey have been summarised (Appendix 4).
Current practice in the use of telematics
Chapter 3

Responses to the key issues

Technology such as fax machines, bulletin boards and E-mail are not normally used for real-time interaction, and none of these have an audio component. It was decided that for the purposes of this investigation, the focus would be on the three more sophisticated forms of telematics. These are audioconferencing, audiographics and videoconferencing.

The surveys returned by teachers and managers raised a number of issues that impact on the use of telematics to support AMEP distance learners. The issues identified were: access and equity, limited availability of the technology, associated costs, time constraints, the need for training (awareness raising), the need for technical support, flexible delivery, funding arrangements, and maintenance of the status quo.

Access and Equity

This is an issue for both teachers and learners. In the survey, most participants expressed concern for the learners and their problems regarding access. As suggested by Williams (1994) and Victorian Open Learning Network (VOLN) (1996), it is necessary to avoid disadvantaging learners who do not have easy access to electronic equipment. Awareness of this was reflected in the distance learning teachers’ comments. The nature of audiographics and videoconferencing technology is that in its current stage of development, learners are required to be in a set place outside their homes at a set time, in order to participate. It is acknowledged that it is because, for reasons beyond their control, they are unable to make this commitment that most distance learners are studying in distance mode. If this were not so, many of them would be in classroom-based learning arrangements. It must be stated again that the majority of learners have access to audioconferencing. However, it is clear that some learners could gain access to more sophisticated technology and others may make more effort if they were made aware of the potential. For the benefit of learners and the progress of AMEP distance learning pedagogy, it is important that distance learning teachers continue to explore these options. As stated in VOLN (1996), ‘the new technologies are valuable when they offer opportunities to continue to improve teaching and learning practice’.

A principle of flexible and open learning is the provision of learner choice as to when, where and how learning takes place. Learners cannot make educated choices without knowing what is available. It does not seem feasible to limit access to new learning opportunities on the basis that some may not be able to participate. With the anticipation of better
telephone services and equipment with increased functionality it is far better to continue investigation and experimentation now. For, as Dell (1988) emphasises, it is important to identify the ‘innovations in transmission techniques (which) will transform the educational resources available and open up new possibilities in the use of distance education to overcome disadvantage’.

**Limited availability of the technology**

Audioconferencing: Availability is not an issue. All Distance Learning Program students are expected to have a telephone in order to participate in the program. All teachers in the program have ready access to the necessary equipment.

Audiographics: Several AMEP Distance Learning Programs already have the hardware and software required for audiographics. Others have the necessary hardware required. Investigations could be made as to the availability of this equipment in local schools and telecentres. Many organisations have downtime in the use of technology. Collaboration across sectors is being encouraged.

Videoconferencing: This technology is available, but is seldom found in the distance learning workplace. For some distance learning teachers it is available within the institution in which their program is based. Access is restricted to areas serviced by ISDN telephone lines.

**Cost**

This crucial issue is a major concern regarding the expansion of distance learning provision in the AMEP. As Dell (1988) stated, ‘The utilization of expensive technologies is beyond the budgetary scope of the vast majority of single institutions’.

The costs involved are multiple, and include the purchase, maintenance and upgrading of equipment, the cost of training, and of transmission. However, with the exception of videoconferencing, most of the hardware for audioconferencing and audiographics is already in the AMEP Distance Learning Programs. Upgrading of computers is part of capital expenditure. Items such as modems are not major expenses but upgrading needs to be monitored. Electronic Classroom® will still work at lower modem speeds, but with limited functions. Most of the equipment required for audiographics is multifunctional and will be in regular use outside that of learner support.

The initial cost of interactive software such as Electronic Classroom® is approximately $400 for a single site licence. Smart 2000 is also $400. Once the initial purchase is made, the software can be upgraded at minimal cost. Multiple site licences are more expensive, but ownership always remains with the purchaser. The software can be lent to a remote individual or organisation and once the interaction is complete the software is returned to the owner. This opens up opportunities for cost recovery if tuition charges are applied. The costs incurred in running one section of the Distance Learning Program could be offset by profits made in another.
As a specialist section of the AMEP, distance learning teachers could request training in the use of telematics as part of their professional development provision. Once initial skills are developed they can be maintained by regular practice. For audiographics, this can be done within the program and across programs. Once teachers develop particular expertise, they can inservice their colleagues. This can be done electronically. Collaboration with more experienced colleagues in other organisations is also possible. Most committed users of audiographics are keen to share the latest developments. Learners also need training. This can be provided by their teachers or negotiated through organisations where the equipment is located. With audiographics, little learner training is required once fairly simple keyboarding skills and mastery of the tools is achieved.

The cost of transmission is a significant factor. AMEP Distance Learning Programs already incur heavy telephone costs even though the use of telematics is limited in current practice. With greater use of telematics support, additional costs would have to be met. Using a Western Australian example to illustrate cost, teachers in this state plan one audioconference per Stage 2 and Stage 3 learner per term. The cost of a recent audioconference involving four learners and a teacher was $98. The audioconference linked learners from the far north to the deep south of Western Australia and the interaction lasted 55 minutes. In smaller states distances are less so the costs would be reduced, and the activity is not necessary if opportunities for face to face communication exist. The telephone account for four separate audiographic sessions each of one hour with a learner 1200 kilometres from Perth was $125.

At the moment, telephone charges for audiographic links are doubled as two phone lines are required (one for the audio link and one for the computer) but with the advent of dual function modems capable of transmitting audio and graphics, only one line will be required and costs will be reduced. Competition in the telecommunications industry will also see reduced costs for transmission.

Charges for videoconferencing are high. For example, the TAFE Communications Network in Perth charges $120 for the first hour and $60 for each subsequent hour; this is for studio hire and technical support. There is an additional administrative fee of $20 if TAFE initiates the link, that is, if they contact all parties and make the arrangements. There is a further charge of $50 per port per hour. A videoconference between three sites requires three ports. In addition there are the normal telephone charges. In Western Australia these have been calculated at an average of $35 per hour. These costs will vary with time and distance. It must be noted that apart from the administrative charge all of these costs are incurred at each site in the link. The reservations expressed in the survey were well-founded; video conferencing is not cost-effective for AMEP distance learning purposes and it is not feasible to consider it as an option. However it must be noted that desk-top videoconferencing is being trialed in the delivery of mainstream distance education in several Australian states. This emerging technology could be significant for the AMEP Distance Learning Program.
The cost per client hour for the delivery of AMEP tuition is a decisive factor when planning future programs. At present there is no significant difference in the cost per client hour for distance delivery when compared with the cost for other formal learning arrangements. It is for program managers to decide whether increased costs can be balanced or justified by the promise of greater program reach, increased learner satisfaction and thus reduced learner dropout.

**Time**

For initial investigation, training and practice in the use of telematics, time is a significant factor. Experience to date indicates that a lot of extra time is required to negotiate and set up group activities using audioconferencing, let alone more sophisticated technologies. It is acknowledged that use of telematics requires a great deal of extra time in terms of materials preparation. AMEP distance learning teachers already have huge demands on their time. Time is money, and in today’s economic climate both are in short supply. Some of these constraints are not constants as increased experience would lead to increased efficiency in terms of planning.

Looking to the future, the use of telematics could be implemented at program level, rather than at individual teacher level. Another option is collaboration across state and territory boundaries, which would allow isolated teachers whose resources are severely limited to link their learners into group activities coordinated by teachers in other states. This would help to increase learner access. All AMEP distance learners are entitled to appropriate and adequate support. This includes the emotional support afforded by peer group interactivity. There is no intention to imply that current levels of support are inadequate, but there is room for a broadening of the horizons. It is for individual programs to decide whether they will reassess learner access and equity and try to organise extra time into busy timetables for extending the implementation of more learner/learner interaction.

**Awareness**

It is important for teachers to be better informed about the range of technologies available and what the technologies can offer. When a choice of technology is made, then training in the effective use of the technology is essential to ‘manage the technological environment effectively and help learners access technology and develop skills for using it’ (Candlin and Byrnes 1995).

There is danger in the belief that technology is the key to learning at a distance. ‘Technology must not be allowed to drive the business of distance education just as much as it must not drive the teaching and learning’ (Lentell 1994). Candlin and Byrnes (1995) sounded the same note of caution when they referred to the pressure that might be placed on distance educators to incorporate technologies into their delivery modes.

At present some attitudes held by AMEP distance learning teachers towards the use of telematics have been shaped by memories of the
NCELTR project of 1994, which investigated the use of new technology in the Distance Learning Program. There is no doubt that the difficulties of coordinating learners with all of their usual constraints on time and availability were huge. Since this was a national project, the difficulties were compounded by having to accommodate the various differences in times between zones. These problems were largely administrative. Without overlooking this issue, distance learning teachers require awareness raising sessions where the potential as well as the limitations of the various technologies can be examined for their pedagogic value. They will then be in a better position to consider which elements can be incorporated into their program.

Training

Teachers do need training in the effective use and management of new technology. Audiographics requires minimal training, but considerable practice. This can be continued in the teacher’s workplace. Practice at lesson delivery with audiographics can be done collaboratively with distance learning colleagues; however, videoconferencing requires more intensive training.

Technical support

Any sustained use of telematics requires access to technical support to be readily available. While teachers can master the delivery side of audiographics, the technical aspects of computers, modems and software require specialist knowledge.

Flexible delivery

Concern was expressed that consideration of technology which is time and place-dependent may conflict with the notion of flexible delivery. As stated by the Flexible Delivery Working Party (1992) ‘Flexible delivery can include delivery to homes and workplaces and the application of technology to enhance delivery or improve access. It is an approach which allows for the adoption of a range of learning strategies in a variety of learning environments to cater for differences in learning styles, learning interests and needs, and variations in learning opportunities. The option of telematics for the support of AMEP distance learners accords with these principles.

Funding arrangements

Although future funding arrangements for the AMEP are at present unknown, it is expected that the Distance Learning Program will continue to exist in some form or other. Cost effectiveness is always an issue, and choices in technology should be made according to the needs of the learner and prioritised within the capacity of the program. It has been demonstrated that some forms of telematic delivery are cost-effective. Promised program outcomes can best be met by some form of telematics support for AMEP distance learners.
Maintenance of the status quo

In the main, feedback from the survey participants reflects that the distance learning teachers feel that the AMEP Distance Learning Program works very well as it is. That is not to be denied, but the considerable drop-out rate of learners must be acknowledged. The difficulty of study in isolation and the benefits of peer support have been documented by Harris (1994), but, at present, little emphasis is placed on peer support. In some program areas this is not an issue as the catchment area is small and learners do have opportunities to meet one another, but there is great need for student/student networking in most states.

Looking to the future, the AMEP Distance Learning Program needs staff who are prepared to explore new technology. Some teachers are already competent and enthusiastic about telematics and others have a desire to be better informed and skilled. Whatever aspect of telematics support is implemented, the aim is to enhance current practice. Teachers need reassurance that new technology does not replace methods which continue to be successful, as learners will still need the one-to-one counselling and feedback that they now receive.

Advantages and disadvantages of using telematics

A broad range of literature describes the strengths and weaknesses of audioconferencing, audiographics and videoconferencing. The advantages and disadvantages as perceived by both teachers and learners are described in the NCELTR Special Project Report, *New Technologies and Curriculum Design* (Anderton and Nicholson 1993).

Various issues have been raised as constraints on the use of telematics to support distance learners in the AMEP. It is appropriate to look more closely at the technology in terms of the perspectives raised regarding cost, time, access and training.

Audioconferencing

Audioconferencing is cost-effective as an audioconference is only slightly more expensive than the cost of phoning the same number of students individually. No special equipment is required for an audioconference, but audioconferencing is a time-consuming practice. Advance organisation, planning and preparation is essential for successful implementation. For example, in Western Australia teachers list all students with sufficient oracy for successful participation in an audioconference. They are then separated into groups according to the Stage/Unit of *It’s Over to You* they are studying. Each teacher takes responsibility for a Stage. Students are phoned and their availability is recorded. They are formed into groups of three or four. A date is chosen and a teleconference is booked with Telstra. The name and phone number of each student must be provided at this time, plus the name and phone number of the convenor of the call (the
The booking is confirmed by Telstra at a later date. Students are informed of the date and time and also given a little information about the fellow students who will be taking part.

Planning and preparation is also time-consuming. Teachers wish to minimise their participation in the audioconference, so plenty of stimulus for language production must be provided for students prior to the session. Having prepared an activity package with cues for sustaining conversation, this must be copied and posted to all participants well ahead of the session so that they have time to prepare for the interaction. Teachers file these activities so that they can be modified and shared by other teachers.

The difficulty of access does not present a problem as learners remain and participate in their own homes. Suggestions for the care of small children are presented and learners are told in advance how to leave the conference if their children are a distraction.

No formal training is required for audioconferencing. After a link is made, Telstra operators explain what should be done if a technical problem occurs. Teachers with the appropriate phone can bypass the need for a Telstra connection as they can link two learners and themselves into a three-way interaction. With careful preparation and experience, teachers can learn how to facilitate rather than dominate an audioconference. The teacher’s role is to monitor the interaction to ensure that everyone has a chance to speak, and to stimulate conversation if the silences become uncomfortably long.

In their assessment of the use of audioconferencing, Anderton and Nicholson (1993) concluded that: 'Audioconferencing is a flexible, accessible and cost-effective form of new technology. Sessions can accommodate three or four learners and can be structured formally or informally. Learners can prepare for the interaction in their own time. The most attractive features of audioconferencing are that distance learners can interact with one another from their own homes, and session times can be negotiated and booked very easily'.

**Audiographics**

Audiographics is an arrangement where an audioconference is complemented by an accompanying computer link. This has been acknowledged as being ideal for text-based interaction between teacher and learner and learner and learner. As has been shown, suitable hardware is available in most AMEP Distance Learning Programs, and two states are fully equipped. The computer can be used for many other purposes. The only costs are for the telephone links. The computer link can be terminated at any time during the interaction if visual stimulus is no longer required.

As with audioconferencing, time is spent negotiating session times with both the student and the owners of the equipment at a remote site. Materials preparation is time-consuming as up to three or four computer screens are prepared for each session. These may be downloaded onto a
floppy disk and sent to the remote site to be installed on the day of the session. Some paper-based materials may be posted or faxed also, as a backup in case of equipment failure. Time needs to be spent on familiarisation with the menus and tools of Electronic Classroom®. There is difficulty of access at the moment as no students are equipped to participate from home and therefore they must go to an alternative site at a pre-arranged time. However, audiographics is used in hundreds of schools throughout Australia and is also available in Telecentres and Learning Centres (Appendix 6). Therefore it is possible that student access can be negotiated.

In Western Australia, the TAFE Media Network will load Smart 2000 at any Telecentre on request. If a learner needs this kind of support and its usefulness can be demonstrated, he/she may be able to gain access through a local school or Telecentre. It may be acceptable to install the software on a computer at a learner’s workplace. With the dual function modems, learners with the appropriate equipment can use this technology from home.

Training is necessary for audiographics; however the basic skills can be learned very quickly. All states have a wealth of expertise in the area of audiographics that can be found in both the primary and secondary education sectors. Training for both Electronic Classroom® and Smart 2000 can be done on-line, and a range of videos and books have been produced for further support. Apart from the more traditional aids to learning about audiographics and videoconferencing, there is a growing body of work on the Internet which relates to these topics. People who ‘publish’ this work are usually keen to share their expertise and promote good practice. Useful information can be printed and filed for future reference and the writers can be contacted through their E-mail addresses.

After using audiographics with a range of distance learning students, Anderton and Nicholson (1993) acknowledged the benefits in the following statement: ‘Audiographics technology can provide interactive voice and visual contact between a teacher and learners. The equipment is ‘user-friendly’ and basic requirements for use can be learned quickly. The software has been designed for educational purposes and provides opportunities for interaction via text and graphics in real-time, thus avoiding the delayed feedback of traditional distance education’.

Videoconferencing

While videoconferencing has been found to be an excellent medium for offering support to distance learners, teacher reservations about it are well founded. Videoconferencing is a very expensive form of technology and cannot be viewed as cost-effective for small-group learner support. Its use can rarely be justified. This form of interaction is as time-consuming as audioconferencing in terms of student and studio liaison, and materials preparation.

Difficulty of access occurs for learners, as videoconferencing is time and place-dependent. Studios can only be located in capital cities and larger
country centres which are serviced by high-quality ISDN phone lines. Most studios associated with TAFEs and Learning Centres are heavily booked, so access may not be available at convenient times. Training is essential for videoconferencing. This technology is confusing initially, but can be managed with practice. Technical support is provided with most bookings. Desktop videoconferencing uses ordinary telephone lines and personal computers. This emerging technology has not been trialed with AMEP distance learners, but should not be overlooked.
Current practice in the use of telematics
Chapter 4

Conclusions and recommendations

Conclusions

Currently, AMEP distance learners have pedagogically sound teaching materials provided free of charge and they are supported by highly qualified and experienced teachers. The telephone is used effectively between teachers and learners, and in some states learners are matched with a native English speaker for additional speaking practice via the telephone. Despite this, there is considerable drop-out from the program.

Traditionally, distance learning has a high incidence of learners withdrawing from programs. One of the reasons given for this is the difficulty students experience in combating the isolation of solitary study. Appropriate support services to these students should include the development of student networks which would foster a sense of belonging to a group.

According to McGregor and Latchem (1991), 'Teachers need to provide opportunities for students to communicate about their learning. Audioconferencing, audiographics and videoconferencing can be used to provide educational and social interaction between learners. These systems can transform distance learning from an individual act carried out in isolation with a degree of frustration and anxiety, into an enhanced, collaborative activity [where] learners are engaged in more active processes of learning, in negotiating meaning, in problem solving and in developing new perspectives'. Russell (1994) says, ‘...the more opportunities they get to express and clarify their personal ideas and beliefs, the more ready they will be to express them in the wider community’.

There are several issues in these statements which are of significance for distance learners and teachers in the AMEP. Audioconferencing could be implemented to some degree in all programs with no requirement to purchase special equipment. Increasing numbers of learners have computers, and the modems needed for linking computers are becoming more affordable. With the advent of the data share modem requiring only one phone line, and progress in the provision of better quality phone lines, the opportunity for learners to participate in group interaction from their own homes or workplaces becomes a real possibility, thus reducing problems of restricted access.

Looking to the future, distance learning teachers need to be preparing for this progress. Many of the skills required for audiographics use would have
application to other areas. The equipment required is multi-functional, and is already available in some distance learning workplaces. Many teachers in the program are already proficient in computer use, and several have expressed interest in learning more about telematics.

Clearly there are barriers to the implementation of telematics. However, some of the obstacles described by distance learning teachers can be overcome in the short term by a focus on those elements of telematics that are more cost effective and less time consuming. The advantages of telematics for the provision of support and expanded opportunities to distance learners are evident. It remains then for teachers in the AMEP Distance Learning Program to examine their current practice of learner support and plan for the implementation of strategies that will lead to the provision of increased opportunities for interaction between distance learners. Only then will the support be both appropriate and adequate.

**Recommendations**

As a result of the findings from this survey, it is recommended that AMEP providers should:

- continue to build on the research into using new technology in the Distance Learning Program
- recognise the need for the AMEP Distance Learning Program to remain up to date and competitive in order to maintain and increase client demand and thus attract on-going funding
- provide resources and support so that teachers can more fully utilise existing technology, eg to introduce audioconferencing into current practice
- provide resources for distance learning teachers to investigate the concept of audiographics as an effective tool for supporting distance learners
- continue to seek funding for further research and development into the use of telematics
- ensure that all distance learning teachers have an appropriate workplace for the provision of support to their students who are studying *It’s Over to You*. This should include privacy, a telephone extension for each teacher, a tape recorder, convenient access to a computer and a modem
- arrange access for all distance learning students to the NCELTR Bulletin Board Service or to cc: Mail on ARMS (Appendix 5) so that they can work collaboratively, develop a sense of group membership and enjoy the benefits of peer support
- set up mechanisms for collaboration between distance learning teachers to explore the possibility of creating interstate student networks if other duties prevent them from setting up networks within their own student groups
- provide specialist training for distance learning teachers, including: awareness-raising sessions, so that teachers become aware of the wider application and benefits of telematics, eg for assessment of speaking
competencies that require learners to display an ability to take part in group interaction

opportunities to explore and develop computer skills so that teachers will be ready to respond to any opportunity where audiographics could be used to student advantage

time and resources to enable distance learning teachers to undertake enquiries about the distribution and availability of audiographics equipment in areas adjacent to their isolated students
• include provision for technological support in any planning for telematics.
Bibliography


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access and equity in post-compulsory education in rural and remote areas of the state of Western Australia. Western Australian Office of Higher Education.


# Glossary of acronyms

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<thead>
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<th>Acronym</th>
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<td>AMEP</td>
<td>Adult Migrant English Program</td>
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<tr>
<td>ARMS</td>
<td>Australian Reporting and Management System</td>
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<tr>
<td>ARTA</td>
<td>Australian Rural Telecentres Association</td>
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<td>CSW</td>
<td>Certificate of Spoken and Written English</td>
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<td>Integrated Services Digital Network</td>
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<td>WELL</td>
<td>Workplace English Language and Literacy</td>
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Appendix 1

SURVEY: To assess the use of telematics to support distance learners in the AMEP.

Please complete:

Your name:

Number of distance learning teachers at your centre:

Full time: Part time:

Your centre: Your position:

Your phone number: Your fax number:

EXPERIENCE Please tick □

As a distance learning teacher, please indicate your experience in the use of the following technologies. Please write “T” in the None box if your experience is from training only.

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<td>Bulletin board</td>
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Comments

EQUIPMENT Please tick □

Which of the following equipment is available to you at your workplace?

(a) Telephone       Yes □ No □

Is there an individual phone for each teacher to use while working?
i.e. You do not need to share. Yes ☐ No ☐

(b) Conference (hands-free) phone Yes ☐ No ☐

(c) Computer Yes ☐ No ☐

If you answered YES to (c) computer, is the equipment:
On your desk Yes ☐ ☐ ☐ If YES, Macintosh ☐
No ☐ ☐ ☐ IBM compatible ☐
Other ☐

If the computer equipment is not on your desk, is it available:
For the use of distance learning staff only
Yes ☐ ☐ ☐ If YES, Macintosh ☐
No ☐ ☐ ☐ IBM compatible ☐
Other ☐

If you ticked NO or Other’ to the previous question, please describe your workplace access to computer equipment and specify what make it is:

If you use a computer at work, is it:
Stand alone ☐
Attached to a network ☐
With CD ROM ☐
Comments ☐

(d) Modem Yes ☐ No ☐
If YES to (d), make of modem Speed of modem ☐

(e) In your workplace, do you have access to:
The Internet Yes ☐ No ☐
The ELSINET bulletin board? Yes ☐ No ☐

(f) In your workplace, is there a person available to provide teachers with technical support when required?
Yes ☐ No ☐
If NO to (f), please explain how you get help for any technical problems you have when using telematics equipment.
OTHER ACCESS Please tick ☐
For lesson delivery, can you arrange access to any of the following technologies that are owned or managed by another department or institution?

Audiographics Yes ☐ No ☐
If YES, is the software
Electronic Classroom® ☐
Smart 2000 ☐
Other ☐ Name
Please describe the location of the audiographics equipment in relation to your usual place of work, eg how far away it is, what travelling time is required to get to it, how easy it is to make a booking at a time to suit your needs.

Videoconferencing Yes ☐ No ☐
If YES, is it PictureTel ☐
Other ☐ Name
Please describe the location of the videoconferencing equipment in relation to your usual place of work (as for audiographics).

CLIENT ACCESS Please tick ☐
Does your distance learning section offer any telematics tuition on a cost-recovery or fee-for-service basis?
Yes ☐ No ☐
If YES, please describe the client group/s, and the service that you offer.
Do you provide distance learning support via audiographics or bulletin board to any students:
In their homes Yes ☐ No ☐
At their workplaces Yes ☐ No ☐
Other Yes ☐ No ☐
If YES to any of the above, please describe
Is there a network of telecentres, telecottages (or similar) in your state or territory?
Yes ☐ No ☐ Don’t know ☐
If YES, can you provide the name and address of the central support unit?
e.g. in Perth, WA, if I wanted to book a videoconference I would contact the TAFE Communications Network.

Can you supply the name of a contact person at the support unit you would use?

Would you like to offer any other comments? I would be interested in hearing about any difficulties you are experiencing at present, or anticipate will occur, regarding the use of telematics. This may include issues such as costs, equipment, training, time, student access etc. It may be your attitude to or feelings about the use of telematics to support distance learners in the AMEP.

COSTS
(Please ignore this section if you are not normally involved in budgeting issues)
If you are using telematics to deliver any form of student support from your distance learning workplace, can you please describe how your program meets the telephone costs of:
Audioconferencing
Audiographics

If you use equipment belonging to another department or institution, please describe how your program meets the cost of:-

studio hire
on-line charges
technical support

Thank you
Appendix 2

These questions were sent to AMEP managers in each state.

Management Questionnaire

1. Please describe what is happening in your Distance Learning Program with the use of telematics.
2. What issues have influenced your decisions regarding the extent to which telematics use has been incorporated in your Distance Learning Program?
3. What are your views on the use of telematics to support distance learners in the AMEP?
Appendix 3

Comments from AMEP Distance Learning Teachers

Teachers were asked to give comments about what they felt were significant issues that would impact on the use of telematics to support distance learners. It is from comments provided by teachers and managers that the key issues emerged. Their comments have been abbreviated as follows:

**NT**

No time or resources to investigate

Requirements for training and access for students

I like the idea of telematics

Practicalities make implementation difficult

**NSW**

Use of videoconferencing and audiographics not being considered due to lack of funding and time

Distance learning students are unable to participate in activities that are time and place-dependent

Not appropriate to devote AMEP resources to a select few DIMA students who happen to have the necessary telecommunications equipment at home

Use of telematics is more relevant to workplace language, literacy and numeracy where employers contribute to the cost of setting up the equipment and meeting the on-going cost of the service

The Elsinet Bulletin Board could be used for DIMA students to interact in writing on a national basis, but this would need a national coordinator, clearance from NCELTR for student access to the software, and training for students who wanted to participate

Audioconferences are desirable, but time-consuming in terms of preparation and co-ordination. Added to this would be the cost of the phone calls.
Teachers need to be trained in effective use of the equipment and in appropriate teaching methodology.

The audiographic and videoconferencing was only used once during the project held with Western Australia.

The fax is a great aid because of its immediacy. Also there is rarely any technical problem to upset one’s plans. So far have not used the bulletin board service with students but find it very useful/invaluable as a means of communication with our contact in SRA (Sydney Rail Authority). Students need training too. Can low-level students be instructed in equipment use?

Concerned about equipment failure.

Motivation is increased as a result of more direct teacher/student interaction.

Time spent in training and setting up equipment is recouped in the reduced response time required between teacher and students.

I am not using telematics in my teaching.

**VIC**

The costs in terms of time, equipment, training and delivery would place enormous strain on fiscal resources.

Not a prospect for Victoria.

Student access creates a problem.

Organisational nightmare
  — travel to site
  — child care
  — time co-ordination

Students enjoyed it.

Value in promoting communication between isolated students.

Confusion in teacher understanding of what telematics is.

Difficulty of getting DL students to be at a set location at an established time on a regular basis.

The time invested in materials preparation at each centre could not be justified for the small number of students who could participate. Would materials be shared Australia wide?

How interactive is videoconferencing?

Face to face meetings are arranged more easily in some areas.
I think some of my students have sophisticated computer equipment and modems at home

Stage 3 students network via the telephone as part of IOTY

Not necessary or cost-effective

I have no privacy or equipment (not even a cassette player) at my centre

Students unable to buy necessary equipment

Training for teachers. Extra time involved

No private clients

I have had no experience of telematics at all

I’m afraid I don’t know much about the use of telematics myself. Before I can make any judgement I feel I need more exposure and experience in that area

Value for student/student can be seen despite no knowledge of telematics. Would love some workshops in all of the technologies

WA

Limited opportunity to develop expertise

Value in use of audiographics for literacy but finding students with appropriate oracy and access is a problem

Time expenditure on preparation and establishing links is excessive

Anticipate simpler technology in the future

Preparation time and resources required for videoconferencing make it unacceptable

Issues to do with the cost of transmission eg Telecentres can't carry the costs of students dialling to us for audiographics

Student access to equipment

Adequate training

Not enough students to make regular delivery viable

Great potential of audiographics for literacy students
QLD

Nature of DL clients and costs associated with booking studios renders the use of Electronic Classroom and video-conferencing non-cost effective for either program delivery or support of distance learning students.

Few students are unable to access a class. Those genuinely geographically isolated have no access to telematic facilities other than phone and fax.

TAS

Teacher and student training required

Adjustments to teaching methodology

Inadequate telephone lines to some parts of the state

Temporary accommodation prohibits the installation of expensive phone lines at my centre

Few students have modern equipment eg computers and modems. Would hope that materials never require more than access to basic technology.

SA

Teachers interested in finding out more about telematics

A few students are starting to get their own computers. Teacher interested in incorporating use of this tool into learning English

In order to implement teaching methodologies using technology like videoconferencing and Internet we really need access to skilled advice and support rather than relying on the good will of other already busy staff members. This is the main barrier to developing these methodologies at present.
Appendix 4

Comments from Managers

The AMEP managers were asked to respond to three questions relating to the use of telematics to support learners in the Distance Learning Program.

Question 1. What is happening in your program?

In describing what is happening in their Distance Learning programs, managers cited regular telephone calls between teacher and student as the main use of telematics for student support. The use of the fax was becoming the next most frequently-used option. No mention was made of audioconferencing, audiographics or videoconferencing.

Question 2. What are the main issues?

The issues were seen to be:

Not all technologies are available

Equity: not all distance learners have access

The time involved in setting up sessions

The cost of resources, teacher time, cost per client hour

Resources of the Distance Learning Program should be used to meet the needs of the majority of learners

The program works successfully using regular telephone teaching sessions and fax

The use of real-time communication reduces the flexible nature of the distance learning mode and impacts on learner autonomy. The requirement to be in a particular place at a particular time creates problems of child care, transport, and removes learner choice as to when learning will take place.

The implications of future funding arrangements with DIMA

Question 3. What are your views?

The manager’s views were expressed as follows:
Totally support the concept. Particularly relevant and useful for learners in remote areas and isolated situations. Telematics can enhance and maximise learning outcomes and the impact of the Distance Learning Program. Also enhance the Distance Learning Program as a valuable form of flexible delivery within the AMEP.

Not a priority. Can see the benefit of audioconferencing but don’t see it as a role for the AMEP due to student’s time, and the program’s financial restraints. The program works well as it is. For non-AMEP clients the situation is quite different as the employer can contribute to the costs of telematics use.

Telematics would be ideal. Provision of peer group support. Provision of quality face to face teaching.

I support the idea in principle but it is not feasible due to lack of student access.

No plan to pursue real-time interaction. Our focus is on increasing the use of delayed time interaction services such as E-mail and the World Wide Web.

Any means of enhancing communication between teachers and students and students and students is worthwhile, but must be within reasonable costs.
Appendix 5

E-mail facility within ARMS

For those teachers unable to access the NCELTR Bulletin Board Service (ELSI.NET), the AMEP Reporting and Management System (ARMS) offers an E-mail facility to any teacher able to log-on to a computer on this network. In theory, anyone teaching an AMEP class or program should have access to ARMS at their centre. In practice access to this facility is not encouraged and is not provided for any personnel other than data processing officers. This seems to be a very narrow use for a valuable resource.

The data manager at each centre can be asked to create a nominal account at each site. Each person needs to be provided with a special log-on identity or a number of individuals, eg the distance learning teachers, can be set up as a group, with one log-on address.

Using the software embedded in the ARMS system (cc:Mail), messages can be distributed via the ARMS network to nominated individuals or groups at any teaching centre with access to ARMS.

Attachments such as documents and files can be sent by cc:Mail. This is not only cheaper and quicker than faxing pages of text, but is far more efficient. Documents can be ‘mailed’ between computers and the recipient/s can open the information into a word-processing package, review it, make revisions and respond without the requirement for unnecessary printing or postage. At a time when distance learning teachers are jointly developing various print-based assessment tasks, and other documents associated with the new *It’s Over to You*, a facility such as this, available to all states, would be very useful. In addition, teachers would develop and practise a range of new computer-based skills.
Appendix 6

Telematics in other institutions

All states and territories have some form of distance learning for the primary and secondary education sectors. Delivery by audiographics is a strong point.

The major emphasis is on the delivery of languages other than English (LOTE) although other subjects are also delivered. Tuition is rarely delivered to private homes, although it can and does happen. Modems which support simultaneous voice and data have been developed and Electronic Classroom® has been adapted to accept them. This obviates the need for two separate phone lines to be available at a site and opens up increased possibilities for home delivery. Once fibre optic lines are in place these new modems can be used. It is anticipated that the School for Isolated and Distance Education (SIDE) in Western Australia will retain a group of machines in a lending bank. A student will borrow a computer and modem for the duration of a course in the subject area being delivered by telematics. Several of the groups providing distance education in Australia are using videoconferencing and are monitoring the use of desktop videoconferencing. This system allows users to talk, see each other in a video window on their computer screen, and collaborate on text and graphics simultaneously. Fax and E-mail transfer are also incorporated. The best aspect of this technology is that it can be transmitted over one telephone line. In Australia use of new technology is restricted in many areas by the poor quality of existing lines and lack of ISDN (fibre optic) cable.

A wealth of experience now exists in audiographic delivery. Some states have developed instructional videos on setting up and using audiographics, and trouble-shooting guides are available. Some centres would be prepared to offer training, usually on a fee-for-service basis. The developer of Electronic Classroom® is exceptionally available and helpful. He has a CD of lesson material that can be purchased. The content has been developed by teachers in the field, and while most lessons would not be appropriate for AMEP use, they provide models of good practice or indeed food for debate on the nature of good practice.

The Australian Rural Telecentres Association (ARTA) is a national association of community-based Telecentre organisations which provide information technology services and training to support rural communities, local businesses, distance education and information access. ARTA is represented in all states, but not in the Northern Territory. Australian TAFE organisations in every state and territory have developed communication systems to link colleges and other delivery sites to extend access to learning (Flexible Delivery Working Party, 1992). In addition there are public videoconferencing rooms in many large towns throughout
Australia, which all in all provides a rich network of telematics communication facilities. Telecentres are expected to be responsive to the needs of their local communities. Therefore there is provision for twenty-four hour access in some cases, and negotiable access time in others. All have a coordinator. There is usually a small joining fee. Centres affiliated with TAFE allow free access to students enrolled in a TAFE course.