Interactive distance e-Learning for isolated communities: The policy footprint

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In a distance-ed environment, it's very difficult to get collaboration and things like that, so we push really hard to get kids to talk to each other and get help from each other ... we're about educating the whole family and the community rather than just being focused on the student. [AGTI429-Pol]

Abstract

This paper provides information on the policy strand of an investigation into the Australian Research Council Linkage research project into 'interactive distance elearning' [IDeL] following the introduction in New South Wales and in the Northern Territory of Australia of satellite-supported two-way broad-band internet services for school-age and adult distance education. The 'policy strand' context is the expansion and reform of educational services to these communities. One key conceptual development, explored on the basis of early data collection, is that of the shared nature of the IDL project, between governments and between public and private sectors. In particular, this is being explored within the concept of "knotworking"; that is, how the project has built up a distributed network of expertise. This aspect of the presentation draws upon the concept of communities of practice. The attraction of this approach is reinforced by the notion that leadership development is best facilitated in situated learning contexts and that participants desire development support from "fellow travellers" rather than designated experts. The concept of learning from "fellow travellers" is central to the notion of 'communities of practice' (Wenger, 1998).

This paper provides information on the policy strand of an investigation into the Australian Research Council Linkage research project into 'interactive distance e-learning' [IDL] – also known as the Satellite Education Project [SEP] - following the introduction in New South Wales and in the Northern Territory of Australia of satellite-supported two-way broad-band internet services for school-age and adult distance education. The project began on the basis of a National Communications Fund grant in 2003 and has been sustained since by further national, state and territory funding.

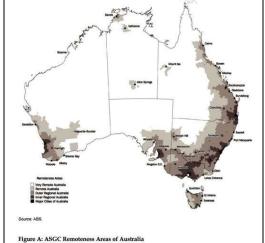
The IDL service is provided to 'School of the Air' [SOTA] students and their families and to remote schools and townships; that is, mostly students and parents on isolated homesteads, students and adults in isolated Indigenous communities, and to adults seeking vocational education but living on isolated properties or living in small towns. In many cases, these communities experience a range of disadvantages, not just in education but also in employment, health services and transport.

By the end of 2005, IDL had brought new technology and educational services to nearly 400 users, broadcasting over millions of square kilometres using real-time video, shared computer applications, graphics, audio-conferencing, online chat, and email. In 2007, further expansion saw teenage students and more adult learners brought into the program in different locations and for different learning experiences, including some from

mainstream secondary schools and the expansion of IDL for vocational education and training. By linking IDL to video-conferencing, the program is now accessible by many school and vocational education and training sites in NSW and increasing numbers in the Northern Territory through the use of 'virtual' studios.

The Report WIDeLy and RapIDely (Crump, Tuovinen and Simons, 2005) detailed the early experiences of this initiative and was able to capture the moment when school distance education moved from radio / mail / telephone to interactive satellite delivery (as outlined in the first paper in this symposium). The 'policy strand' investigated the expansion and reform of educational services to these communities and employed a 'policy prospectivity' or 'forensic policy' (Crump, 2006) approach to do this, mining the wealth of official and 'folk' knowledge of the key policy participants from the very beginning as well as then forensically sifting through all the various perspectives and versions of events to – scientifically - determine a cause of events about what happened, and why.

The expansion of access to education using the technologies available in the digital age is a global trend, not only for rural communities. For isolated learners and communities in the IDL project, the essence of the change being brought about by the technology is the addition of visual modality, fast (and in some cases initial) access to the resources of the internet, and the opportunity to direct some of their own learning.



Australian Standard Geographical Classification Remoteness Areas

Source: Australian Institute of Health and Welfare: Rural Regional and Remote Health – Indicators of Health May 2005

Therefore, at a broader level, IDL changes the experience of place and community for participants, by giving them unprecedented access to sharing the benefits of being part of the digital age, connecting to a myriad of experiences and sources of knowledge only available through the 'world wide web', as well as enhancing communication with each other locally.

RESEARCH BACKGROUND

Extensive research has been conducted into whether new technology adds to, or detracts from, positive outcomes in school communities and for education systems. But there is little research on the links between technology and distance education. Our research on IDL builds on a pilot study by Boylan and Wallace (2004) who reported on the NSW trial of satellite delivery. They found that the more consistent service it provided (radio transmission frequently broke down) led to higher levels of participation and a greater sense of community with the School of the Air, as well as between isolated families and communities. They concluded:

Satellite based technologies provide the only real solution, given the inadequacy of broadcast systems and the unsuitability of telephone systems used on remote outposts, to provide adequate support to teaching and learning programs. (p. 5)

However, introducing a full-scale satellite-delivered program meant taking this innovation to a much higher level of complexity. The policy strand of our project was the first part of the project and involved more than 50 in-depth interviews with key stakeholders and actors, at all levels, across the history of the IDL initiative. The policy strand of the research asked three basis questions: 'Where did the idea for IDL come from?', 'How has IDL been implemented?', and 'What are the most likely future developments for IDL?". Our research, as an industry linkage project, was structured to explore how the outcomes from the IDL initiative could be used as a source of fresh insights that will be influential throughout the project's partner organizations (NSW Department of Education and Training, NT Department of Education, Employment and Training, and the IT service provider Optus Networks Pty Ltd).

The key conceptual development for the policy strand of the project, explored on the basis of early data collection, is that of the shared nature of the IDL project, between governments and between public and private sectors. In particular, this is being explored within the concept of "knot-working"; that is, how the project has built up a distributed network of expertise including distance education teachers and departmental officers, school-level IT technicians, service-provider technicians, national and international software experts, education researchers and policy-makers, parents and students. This aspect of the analysis draws upon the concept of 'communities of practice'. The attraction of this approach is reinforced by the notion that leadership development is best facilitated in situated learning contexts and that participant's value development support from "fellow travellers" rather than designated external experts. The concept of learning from "fellow travellers" is central to the notion of 'communities of practice' (Wenger,1998) and will be further discussed in the section on Project (Interim) Findings.

POLICY BACKGROUND

State and national governments in Australia have been active and progressive in shaping policy and undertaking strategic initiatives to provide equity to rural and isolated students for more than 100 years.

Since the 1970s a series of major Australian reports has supported these initiatives, including the 1972 Senate Standing Committee on the Education of Isolated Children. In 1981, Darnell and Simpson produced a report on papers compiled from a conference on new directions in rural education, titled Rural Education: In Pursuit of Excellence, supported by the Western Australian government and the Organisation for Economic and Cooperation and Development (OECD). In 1991, the National Board of Employment, Education and Training (NBEET) released Towards a National Education and Training Strategy for Rural Australians, which was the first cross-sectoral study of these issues, arguing for better mechanisms for coordination rather than more resources. In 1999, the NBEET Higher Education Council reported on Rural and Isolated School Students and their Higher Education Choices arguing for the first time that, with 30% of Australians

affected, a government approach was needed if government policy was to have an impact across a range of factors at play.

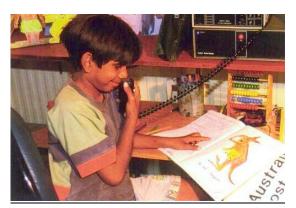
In 2000, the Commonwealth Department of Education and Training released a further report *Engaging Universities and Regions; Knowledge Contribution to Regional Economic Development in Australia*, which added to the 'whole of government' approach: recognition of an inclusive and comprehensive community contribution to change. The Human Rights and Equal Opportunity Commission Report *Recommendations: National Inquiry into Rural and Remote Education* (HREOC, 2000) provided further evidence of disadvantage and unequal educational outcomes for rural Australia.

However, new technologies in Distance Education [DE] have been largely overlooked. This is why the IDL innovation in Australia, and the research into the experiences of the participants, is of such interest. Lack of proximity to a school, college of Technical and Further Education (TAFE) or university has been shown to contribute to low participation levels for rural, regional and isolated students who have fewer options to pursue career goals locally, many having to leave for urbanised areas for work or to pursue other interests.



Alice Springs SOTA Teacher giving a radio lesson. Source: Postcard Photo ~ Steve Strike

In the early 20th century, support for small isolated schools and isolated students around Australia was extended through the concept of a 'correspondence school'. In 1951, teachers adopted Royal Flying Doctor two-way radio equipment to create a 'school of the air', with excited reports of 'transceivers' with a range of several hundred miles.



School of the Air student in a 2-way radio lesson. Source: Postcard Photos

The 'Bush Talks' consultations conducted by the Human Rights and Equal Opportunity Commission (HREOC, 1999) found that access to education of an appropriate standard and quality is a significant concern in rural Australia, as distance creates barriers to the provision of, and access to, education and training services. These barriers had been significant for indigenous peoples not only because of distance but also because of language and options for future employment.



Students using IDL at a NSW Isolated Community Source: TAFE NSW – Western Institute 2005

The Commission saw the provision of that access as a social justice issue. In the Australian context, one other imperative was highlighted by the findings of the HREOC (2000, p.10) inquiry:

For a number of reasons, Aboriginal people have not participated to any meaningful extent in distance education and School of the Air programs. One reason – and this impacts on the delivery of Indigenous education in general – is that many parents perceive their lack of resources and literacy and numeracy skills as barriers to children's participation in such programs.

IDL has allowed many remote, largely indigenous, communities to more fully participate in education and training and, in some cases, children and adults learn together.

"School of the Air", Distance and Open Education in Australia

The first School of the Air (SOTA) was established at Alice Springs. Other long standing elements of rural education in Australia include one-teacher schools, central schools, the Country Area Program and Assistance for Isolated Children including a boarding allowance and second home assistance. While the advent of radio was very warmly welcomed, over time the limitations became more than obvious, with parents who had experienced radio telling us (in 2007):

"The quality of the radio (audio) some days was really good, some days it was not flash and the towers would go down quite regularly".(BHGPI430-Pol)

"It was pretty much a whole bunch of static and a lot of really hard work listening." (BHPI431-Pol)

"You ran the risk that the teacher was actually interpreting (because could not hear well)". (KTI409-Pol)

Parents have always played a key role in distance education, not only in providing much of the face-to-face schooling of their children, but also in pushing for recognition of the problems they and their children face compared to their peers in larger towns and centres. In many cases Australia led the way in this field, as it does now with satellite delivery in which not only is the sound better, but vision has been added to significantly enhance student engagement, lesson interactivity, and learning outcomes.



Students doing their lesson at home via satellite delivery trials

Source: http://www.schoolair-p.schools.nsw.edu.au/sotaupdatedsite/Frames/index.htm

IDL is an unusually large and complex innovation in the field of education and technology. As noted above, innovative technologies have been incorporated into DE over time in an attempt to overcome the disadvantage that is associated with isolation and satellite-delivered lessons have been the catalyst for a 'quantum leap' in the quality and quantity of what and how students, young and old, can participate in learning without having to leave their home or community. This has been an important development because, in the 21st Century we are a much more visual society, and knowledge has shifted from print to multi-media formats, and has become instantaneous and ephemeral.

PROJECT BACKGROUND

There has been a progression in distance education through distinct generations of teaching and learning practice: the 'printed word' characterised DE until the late-1960s; telephones and teleconferencing then followed; and, commencing from the mid-1980s, computers. The more recent development of the internet is considered as defining the present generation of DE practice, though it is here that too little is known, especially for small school or home-based learning. Substantial themes throughout the literature can be summarised as:

- Communities play an important role in e-learning because they provide active social communication and interaction;
- Digital divides exist within and across school systems, states and nations;
- Cultural, social and economic influences on the classroom need to be considered and understood for effective use of ICT in schooling;
- ICT has become a high budget priority for education and training;
- Education policy for ICT is subject to rapid revision related to the rapid rate of technology obsolescence; and
- Almost anyone/any age group can be taught online, with training and support.

Extensive research has been conducted on distance education in Australia, but not so much into the impact of new learning technologies on distance education outcomes, partly given the newness of the phenomena. Research issues for interactive DE include:

- how best to provide an expanded service to isolated primary-aged students;
- how best to ensure pedagogies developed for use with satellite technologies exploit the potential of the medium;
- how best to manage lesson planning, programming and timetabling to maximise outcomes in all content areas:
- how best to develop exemplary lessons within reasonable workloads; and
- how best to develop opportunities for teacher professional development, community education, and other activities, that maximise the capacity and benefits of IDL.

The delivery of Distance Education has not only been shaped by profound technological advancement, but also by the evolution of teaching theory. Goodyear (2000) argued that education is one of the last fields to learn the lesson that technology must be designed around a thorough understanding of the needs and 'working practices' of its intended users. For our project, there were three key areas to explore what is happening in satellite delivered distance education, related to student and teacher daily practices:

- a) expanded curriculum (wider range of subjects / materials / teachers)
- b) peer interaction (opportunities for collaborative learning, etc.), and
- c) connectivity (both literal access and feeling more connected).

Investigating these areas of change positioned our project to examine the connections between the macro level of policy development through the meso level of educational and organisational practices and how they are represented/defined as informed by the local and micro level of participant experiences, activities and actions in the context of IDL delivery to remote and isolated communities in two Australian states.

PROJECT (INTERIM) FINDINGS

While the project has yet to formally report to the Australian Research Council and to the project industry partners on the definitive findings, some IDL outcomes that can already be discerned include better quality distance education (through improved audio and the addition of vision in satellite-based lessons), more detailed and more varied content in satellite-based lesson material and activities, higher levels of attendance and engagement in lessons, strengthening the perception of being a "class" despite not being in the one room / place (greater connectedness), and improved pedagogy for indigenous students.

These interim findings are being explored in the policy strand within the conceptual framework of **policy recontextualisation and implementation**. In addition, a reduction in sense of being isolated from each other and the rest of the world, changing identity, stronger community links and improved access for adult learning, especially through VET / NSW TAFE courses. This is being explored through the notion of "Glocal": **local globalisation**.

One further key conceptual development alluded to earlier in this paper, as explored on the basis of early data collection, is that of the shared nature of the IDL project between governments and between public and private sectors. This is being explored within the concept of "knot-working"; that is, how the project has built up a **distributed network of expertise** to solve the technical and pedagogical problems faced in the process of

implementation. This aspect of the proposal draws upon the concept of **communities of practice**. The attraction of this approach is reinforced by the notion that leadership development is best facilitated in situated contexts and that participants desire development support from "fellow travellers" rather than designated external experts.

The concept of **learning from "fellow travellers"** is central to the notion of communities of practice. Wenger (1998), who initially developed the concept, described how we all belong to a number of communities of practice, in personal and working lives, where members are informally bound by what they *do* together. Communities of practice cannot be formed by decree, as shared activity is the core around which a community forms itself. A defining feature of any community of practice is what capability it has produced in the form of a shared repertoire of communal (human and/or capital) resources. Based on these three conceptual tools, the policy strand has identified three differences (and improvements to policy and practice) for the IDL project:

1) Policy implementation was undertaken with a high level of fidelity.

That is, whilst there were some minor and necessary adjustments to contextual factors and features at state and territory levels, the policy was implemented almost completely as expected;

2) The policy was implemented with extraordinary swiftness.

This was an extraordinary outcome given the newness and complexity of the task, (that is why we called the pilot report "Widely and Rapidly"); and

3) The policy has withstood the pressures of time and (atypically) survived.

The IDL initiative has become more inclusive of distance education actors and students, as well as for mainstream education and training sites as well as other government policy contexts (policing, national parks, health, youth policy, local government etcetera).

One of the defining features of the IDL initiative is how faithfully the policy decision became policy practice. In most education policy, projects go through a cycle or non-linear stages from decision-making, to implementation, to recontextualisation (Ball, 1998a, Crump, 1992) at the coalface with, perhaps, some evaluation and refinement but – all too often? – moving into a stage of decline or even neglect as policy issues, policy decision-makers, policy structures and policy funding moves rapidly on to other issues and imperatives. The IDL project has avoided this fate, through the extraordinary commitment of all participants.

One of the greatest impediments to the successful implementation of the IDL project was that the policy-decision makers were asking a very small group of people to roll out a new and complex suites of technology over about 1/5 the area of Australia, in a tight budget framework and an even tighter set of 'milestones' and 'reportables'. In 2002 it was envisaged that new technology services would be delivered to about 3 700 users, at 547 sites, including 239 small isolated schools (87 of which were NT indigenous communities). The project initially established teaching studios at existing DE/SOTA centres, Aboriginal education centres and TAFE Outreach programs. These were located, in 2002, in regional NSW (Port Macquarie, Dubbo and Broken Hill), and in the NT (Alice Springs and Darwin). In addition, a portable satellite delivery system was set up on a

trailer to be taken to remote communities in NSW. The project also established a hub at the Optus Satellite Earth Station (SES) at Belrose in Sydney.

The 'rapidly and widely' implementation of installing satellite dishes and the associated desktop hardware on stations, schools and remote communities, training teachers, training students, training parents / supervisors / 'govies', building IDL studios in NSW and the NT, co-ordinating the process so that systems spoke to each other, and hooking all this up through the Optus satellite at Belrose, Sydney was an immense undertaking. The key point here – in relation to the policy strand analysis - is that it was achieved by a team of people, most of whom had never met - and may still have never met – each other, distributed over huge distances, at different public education and private sector sites, but all working together on a single project, and with an extraordinary level of single-mindedness to meet the project objectives. As the *Widely and Rapidely* (p. 74) Report noted:

The IDeL innovation has met a real need. The high level, broad extent and depth of implementation of IDeL, within a short period of time (maximum 3 years), across barriers of distance, weather, cultures and race, has only been achieved because of the extraordinary commitment from each group involved. They all made it happen. Distance education is as much about relationships and partnerships for these communities, as the skills they learn. This alone, to many of the participants, justified the cost to the institutions and governments for the IDeL program.

This is what can be called 'networked expertise' or 'collective competence' (Hakkarainen, Palonen, Paavola, and Lehtinen, 2004) which expresses a refreshingly open and instructive view of professional identity. For example, in the development of "One Touch", the software initially adopted for IDL by both NSW and the NT, software engineers from the USA listened with patience and, eventually, deeper insights, to teachers about how what was essentially a didactic training application needed to be adapted to being effective for working with young children and in a way that is less uni-dimensional.

This shared experience opened up a 'terrain of discourse' that had rarely existed before, given the limitations of professional privilege over knowledge that locks policy decision-makers and actors into narrow spheres of influence and self-referenced practices. Yet, in this situation, those who had the responsibility to implement the IDL initiative, could not be prescribed (nor necessarily wanted to prescribe) professional knowledge and practical expertise in terms of domain knowledge, as previously validated by earlier (separate) implementation experiences, but needed to define expertise useful for the implementation of IDL in direct relation to the problems they faced in this policy footprint, and collectively engage in solution-making.

This required exercising a 'relational agency' (Edwards and D'Arcy, 2004) in a way well understood by the notion of 'pragmatic policy development' (Crump, 1995) whereby knowledge grows out of the daily experience we all face in the living of our lives, professional and personal. 'Pragmatic policy development' also allows participants to win and lose over various decisions, through the process of problem-solving, but in a way that no one group ever only wins or loses. This builds cohesion and support, as participants tend to go along with this for the common good. The team cohesion and the success of the project was commented upon by key personnel in interviews conducted in 2007:

"Yes [the implementation of IDL was] an amazing effort. To be honest, the elements of that were people were very committed to the project, passionately

committed. I think for some [people] this was a dream come true and I suspect that some would have not expected it to have happened in their own time in education because of some of the barriers that they had experienced before-hand. I think they knew their territory; they knew the field; they knew rural NSW and equally the NT, they knew their land and what they could do and how they could do it and probably upfront we were quite thorough in project management in terms of insuring that with timelines and with resources and costings that it was accurate and achievable. Ultimately, it was an amazing effort." (IPExE428-Pol)

"I think the thing about the idea of the project in the Territory, you have a really good project and a really good concept, and you have the right people coming together ...we had good links with Optus which enabled the process to go... So all that stuff came together at the right time, and there's always things can be done better, but this project could have taken a lot longer to get going and it happened really quickly; and it went really well. And it was just because we had all that stuff kind of all-aligned and happenstance and timing, that it came all together, which was really good for us." (IPExEI400-Pol)

In the IDL experience, the 'knowledge' required to make it work and keep it going is not privileged to professions / experts but has been extended to all those involved so that members of the IDL project have drawn on their own knowledge in relation to a shared context and being aware that the capability of the group is reliant on "knotworking"; that is, untying the knot through cooperative and shared teamwork, a "team" spread far and wide and interdependent in ways most of the team had never experienced before.

In achieving the policy implementation goals of the IDL project in this way, the implementation of the IDL policy is a lighthouse example of interagency collaboration. Especially, as it included a level of rarely tried and even more rarely successful public and private sector cooperation, that has given new and deeper meaning to 'public innovation policy' that should be taken into account for future initiatives in Australian schooling and vocational education and training, not only in distance education.

IMPLICATIONS FOR ICT AND EDUCATION POLICY

Ferguson and Seddon (2007) have reported on the emergence of 'decentred education' as part of a process of the decentred social organisation of learning that has occurred since the 1960s – firstly moving the management of schools away from 'provider capture' (the teachers and education bureaucrats) towards parents and the community, to moving the location of education and training away from the formal structures on government managed geographic sites / classrooms to flexible modes and self-managed online practices and recognising, in the process, that learning occurs "in many places, formally and informally, through families, workplaces, communities, in public and private providers, group training companies and churches, and through social movements and virtual environments" (p.111). As Ferguson and Seddon acknowledge, "Many of these learning places had long existed but as a shadow-world beyond the school. Now they are endorsed, authorised and recognised as making a serious contribution to education" (p.112).

This scenario has been well-understood by distance educators for many decades, but the IDL project has provided the opportunity for that awareness, and for the skills participants in distance education have built up through extensive trial and error over those decades to inform and shape the directions of future connections in education and training, wherever it takes place.

An example of the influence of distance education and the IDL project on the wider context of education and training can be seen in the \$158 million 'Connected Classrooms' initiative that was announced by the New South Wales government in 2007. The aim of the program, amongst others, is to provide opportunities for staff and students across the state to connect with each other via interactive classrooms established in all public schools. By July 2008, 200 public schools had 'Interactive Classroom' facilities installed in their school, with all 2,200 public schools to have an Interactive Classroom by 2011. The NSW Department of Education and Training (NSW DET) announced on its website in March 2008 that this technologically linking of all NSW public schools would create "...the largest collaborative learning community in the world."

The Interactive Classrooms project component of the Connected Classrooms initiative involves equipping every NSW public school with an interactive whiteboard, video conferencing facility and data collaboration facilities. Some of the benefits of the interactive classrooms will be to: enable schools to conduct virtual excursions and provide access to university and industry experts through direct video links; enhance opportunities for collaborative teaching and learning between schools; expand subjects offered to students; and provide avenues of support and professional development for teachers.

These potential uses of 'Interactive Classrooms' have been possible in DE through the introduction of the IDL project for some time. Students in remote communities and homesteads have been able to experience virtual excursions to the National Aeronautical Space Agency (NASA) in Texas, the Great Barrier Reef Marine Park Authority, amongst others, and to have access to experts and cultural events such as the Bell Shakespeare Company and children book authors such as Andrew Daddo and Emily Rodder. These experiences and initiatives have been able to inform educational policy in the wider context. In an interview with a NSW departmental officer on the IDL project the officer commented on the influence of DE on the Connected Classrooms initiative:

"...It is now part of the Premier's state plan and work that was done by rural and distance education, if you go through that; if you go through the statement that came out about it [Connected Classrooms], and you highlight the things that are part of the work that's in the rural and distance education, you'll see the influence we've had on state policy. Its' amazing! (...) I believe the work that's happened in this project has influenced policy and thinking around how students learn; that students can be collective learners, they do not need to be in the same place to learn. (...) I think we are influencing thinking about main-stream classrooms. It [IDL] isn't a 'solution' for distance education; it's a way of connecting learners. (...) I'm absolutely sure that we've [DE] influenced directions for the whole of the [NSWDET] department." (IPEI405-Pol)

In the Northern Territory, the influence of the IDL project in the wider education and training context is being explored in the 'Collaborative Trial' model which is piloting the use of the IDL technology to link students, schools and regions and, in doing so, expand the curriculum choice to senior students in secondary school through the 'sharing' of specialist teachers.

Another initiative being currently explored in the Northern Territory is the 'Virtual School' trial which has lessons facilitated by a combination of REACT (the Northern Territory software used to facilitate satellite lessons) and Janison elearning training tools. A review of the Distance Learning Service revealed a need to expand the curriculum

choice to remote schools through the trial of alternative methods of delivery. The curriculum choice provided to remote areas can be restricted due to the difficulty in providing specialist secondary teachers in remote areas. The 'Virtual Schools' trial is addressing this issue through connecting students in conventional high schools which have insufficient students in some subject areas, such as Japanese for example, to form a sustainable class of students with students in remote areas. Thus, in doing so, expanded curriculum choice for students is provided to students in remote and rural areas and to mainstream students in urban areas.



Northern Territory student having a lesson at home via satellite.

Source: Photograph by Ms Amy Hutchinson, Research Associate, Charles Darwin University.

REFLECTIONS

As we have written elsewhere (Crump and Twyford, 2008) "Rural communities and isolated homesteads in Australia have a long and proud history in the culture and identity of all Australians. (...) Australians see themselves as rugged individualists, born to the open spaces of the country and actively engaged with the natural environment. The truth is the majority of the population is concentrated on the edges of the island continent, in or near a major city, in suburbs marked by their uniformity and anonymity. Yet in "the bush" or "outback" of Australia, families and communities continue to struggle against flood, drought and fires, isolated by huge distances from each other and from public services and utilities readily available to the rest of the population. These families and communities (...) reflect better than any other group in Australia the dilemmas of our time, facing new challenges head on in ways that are rapidly exposing benefits and limitations of the closed identities, isolated spaces, and sense of place of the last 200 years. Education has been a key element in supporting rural and remote communities through these changes (and) has done so in a way that helps leap time forward for generations that have been left out of broad technological, social and economic changes taken-for-granted by the majority of the population".

Rural students often leave for urbanised areas to pursue work and interests because they have fewer options to pursue their aspirations locally. To generate change at the local level it is necessary to actively include and work with communities and schools to identify needs and available resources in order to strengthen links between schools, vocational training and employers – a perceived value-added approach for the benefit of communities and businesses. The IDL project has provided a catalyst for fundamental change to the perception of opportunities for education and training for isolated and remote students, young and old, black and white, 'Territorian' or' New South Welshian'. The final report

of the project will provide fascinating and powerful advice to future policy-makers and we are grateful to all the project participants for making this happen.

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