

Indigenous Training And Development Project: Using technology innovatively for low literacy learners

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Introduction

Vocational learning is often valued by students because it is flexible and adaptable to their learning or working environments. Assessments can be designed to meet student needs but often trainers rely on 'tried and proven methods'. This approach to teaching vocational courses often relies on English language text based resources. For many Indigenous learners these ways of learning are not appropriate. E-learning has created opportunities for training providers and students to overcome some of the traditional barriers to adopting flexible approaches to assessment and training. However, the Vocational Education and Training (VET) sector has to some extent lagged behind higher education in its ability to embrace a full and innovative use of technology for learning purposes. Some fields of study, such as Information Technology and Business have adopted e-learning, but others such as health and agriculture have not taken hold of the opportunities presented.

This paper demonstrates one innovative example of e-learning tools that has been adopted by a VET practitioner at Charles Darwin University (CDU), working in the area of Child Care. The tools were developed by CDU as part of an Indigenous training and development project, supported by Red Cross Australia's Palmerston/Tiwi Islands Communities for Children Program¹. The Project, otherwise known as 'DIDG Childcare', shows how video technology can be used as part of a learning process among a group of Indigenous people, to both engage them as learners and to gather evidence for assessment purposes. The Project is subject to evaluation by a 'Local Evaluator'—in this case, a separate group from Charles Darwin University. In this paper, the Project is described and as part of the evaluation, a summary of findings, in terms of 'what works' and what does not work, are discussed.

Project context

DIDG Childcare aims to support Indigenous students who are undertaking early childhood related studies such as Certificate III in Children's Services. The Project is available to students from Palmerston and the Tiwi Islands or those who intend to work within these areas. Apart from using Information and Communication Technology (ICT) as part of the evidence gathering process, the Project aims to support and encourage Indigenous students undertaking these courses through mentoring, providing support with placements, assistance with transport and through seeking support for tutoring. Compared to the number of Indigenous families in the Palmerston area there is a paucity of Indigenous-appropriate child care, and child related services workers. The training is designed to lead to employment in the Child Care and related services industry.

¹ Funded by the Australian Government under the 'Stronger Families and Communities Strategy'. Red Cross Australia acts as a 'Facilitating Partner' and CDU has been contracted to deliver the Project as a 'Community Partner'.

Evaluation processes

The Indigenous Training and Development Project is subject to a national and local evaluation process being conducted as part of the Red Cross Australia's Palmerston/Tiwi Islands Communities for Children Program in the Northern Territory (Katz et al. 2007). The evaluation aims to build an evidence base about outcomes related to Communities for Children projects based on Program Logic assumptions (W.K. Kellogg Foundation 2004) using mixed methods—quantitative and qualitative. The Local Evaluator provides support and engages with Community Partners—of which CDU is one—in a limited way, providing support with the development of evaluation tools, professional development and some reflective practice processes. This evaluation is reliant on a participatory approach (Suarez-Balcazar and Harper 2003) where the Community Partner is responsible for setting the agenda for the evaluation and gathering much of the data (Greene 2006). This reliance on Community Partner engagement is not without its pitfalls (Hatry and Newcomer 2004; Guenther 2008) and could be seen as 'empowerment under the guise of evaluation' (Stufflebeam and Shinkfield 2007:154) but it does have the potential to build research and evaluation capacity among stakeholders, not just the researcher/evaluator (Fawcett et al. 2003). The evaluation is ongoing and this paper is an attempt to document some of the research findings from critically reflecting on the evaluation processes used in the Project.

Literature Review

ICT in vocational learning

Table 1 data from the ABS Survey of Education and Training (ABS 2002; 2006) for Australia as it relates to the use of email and internet methods. The data shows that Internet and email delivery increased by more than double in relative terms over the four years to 2005. Notwithstanding the cautions about the reliability of some of the data, the table demonstrates that the trend to e-learning is not confined to any one course level. Indeed e-learning at vocational levels of training appear to be increasing at similar rates to higher education levels. However, use of e-learning methods appears to increase with higher levels of study. Students participating in higher education undergraduate degrees appear most likely to have used email and Internet as the main method of study—more than twice as likely as those studying at Cert III/IV level.

Table 1. Main method of study email and Internet by course level, Australia 2001 and 2005

| Main method of study: email/internet | Post-grad. Deg. | Grad. Dip./ Grad. Cert. | Bach. Deg. | Adv. Dip./ Dip. | Cert. III/IV | Cert. I/II | Cert. n.f.d. | Level not determined | Total |
|--------------------------------------|-----------------|-------------------------|------------|-----------------|--------------|------------|--------------|----------------------|-------|
| 2005 | | | | | | | | | |
| '000 students | 19.6 | *8.5 | 33.7 | 12.4 | 13.0 | *4.6 | *9.1 | | 106.1 |
| Per cent of total | 11.3% | 10.3% | 5.1% | 5.3% | 2.5% | 3.5% | 5.3% | | 5.1% |
| 2001 | | | | | | | | | |
| '000 students | *2.4 | *5.3 | 15.9 | *4.9 | *4.6 | *0.9 | *3.9 | *1.4 | 39.4 |
| Per cent of total | 2.0% | 5.2% | 2.6% | 2.0% | 1.3% | 0.6% | 1.6% | 2.2% | 2.1% |

Source: ABS 2002; ABS 2006 * ABS issues a caution about the general use of this data

While the above data show substantial increases in Internet based learning methods those courses conducted in the main by online methods, remain in a significant minority, even compared to print-based learning options. The data is supported by the 2007 E-learning Benchmarking Project Report (I & J

Management Services 2007), which shows that in 2003-2004 e-learning was used in about three to four per cent of all VET units. This had risen to about six per cent in 2005, to 17 per cent in 2006 and 29 per cent in 2007. However, as might be expected the Benchmarking Project also shows large differences in experience of e-learning by the industry sector. For example in the Health sector (which includes child care), only 46 per cent of students reported having 'a lot' or 'some' e-learning in their course, compared to 77 per cent in the Business sector (I & J Management Services 2008:3).

To a large extent the disparity is due to the way the different industries use e-learning. Guenther (2005; 2007), in surveys of students and staff at Charles Darwin University, suggests that institutional culture and willingness to adopt e-learning technologies among staff have a big impact on student uptake of e-learning in both VET and Higher Education sectors. He notes that VET staff were more reluctant to use the institution's online learning management system than higher education staff and this is to some extent reflected in response rates among students.

One of the key reasons that students—whether they are vocational or Higher Education students—choose to use e-learning as a means of learning is because of the flexibility it offers: students can use online resources when they want, where they want and at times that they choose (Brennan 2003; Choy et al. 2003; Misko et al. 2005). The findings of the 2007 Australian Flexible Learning Framework E-learning Benchmarking Student Survey (I & J Management Services 2007) confirm these earlier studies. The Survey shows that more than half of all student surveys agreed that e-learning components of their courses allowed them to study where (e.g. at home or work) and when (i.e. time of day) of their choosing. These factors rated higher than other uptake factors such as choice of course, choice of training organisation or when they wanted to start their course. These reasons presuppose that students have access to and are competent with the use of technology.

Perhaps underpinning this factor is a predisposition among some learners to being self-directed and self managed in their learning style. Learners must be 'comfortable with e-learning' in the sense that they must be ready to access materials on the Internet and be prepared to collaborate online (Smith et al. 2003). Based on a sample of more than 300 Australian university students, Smith (2005) suggests that:

'willingness to engage with others through electronic communication and a preference towards self-managed learning represent at least two important learner dispositional characteristics that may predict success with collaborative online learning'.

Application of ICT among Indigenous learners

The data shown in Table 1 suggests that those who have low levels of literacy and numeracy (studying at Cert I/II levels) are less likely to access VET training via e-learning methods than those with higher levels. However, the use of digital media by people from a range of backgrounds, including Indigenous people in remote contexts where English is not widely spoken and even less widely written, is clearly on the rise. Use of mobile phones and 'texting' as a form of communication is not uncommon among non-English speakers in remote Australian context (Desert Knowledge CRC 2006).

Beyond this increasing uptake of technology, generally there is broad recognition of the value of technology for learning (Young et al. 2005) as well as building and maintaining Indigenous Knowledge (Christie 2005; Verran and Christie 2007). However, while use of ICT can be seen as a way of overcoming training disadvantages, particularly in remote contexts (Young 2004; The Australian Institute for Social Research 2006) technology should not be seen as a way of simply replacing other teaching and learning methods. Rather, to take advantage of the opportunities presented by technology, teaching and learning strategies need to be grounded in culturally appropriate learning styles that build on the relevance of local Indigenous livelihoods (Boyle and Wallace 2008).

With these provisos in mind there are still untapped ways that ICT can be used innovatively in delivering educational programs. A steady stream of innovative projects are coming to light in the literature—for uses such as tele-interpreting, maintaining community connectedness, Indigenous Knowledge management and capacity building more generally (INC-Inter-Networking-Communities 2008). There are some examples where technology has been used for gathering evidence (Eagles et al. 2005) and for critical reflective teaching and learning purposes (Jay 2006). The Project described in this paper adds to these innovative practices by providing a unique teaching and learning tool, which can be used for assessment purposes and as part of the learning process.

About the Project

The Project is titled 'DIDG Childcare' (in reference to the digital and electronic method of delivering the course). It aims to increase the accessibility of education to low literacy, Indigenous learners. It is formed around the basis of developing an electronic program that acts as a learning tool for students undertaking the Certificate III in Children's Services. The program is set up like a database, which houses all the information for each of the fourteen units within the Certificate. Unit information and competencies that the students must demonstrate are available to the students in a variety of media formats including; video clips, written text and hardcopy workbooks. However, the Project has focused on gathering video clips of various industry stakeholders (experts and qualified industry workers in Darwin and the Tiwi Islands) giving interviews demonstrating information and the requirements of each element along with examples of the given assessments.

The database program is used during class and workshops given at a number of locations including the CDU campus. The video clips have been developed in the field using interviews and recording demonstrations which are downloaded onto four laptops that are available to the students. These demonstrations are available for individuals or for class groups, by the use of a portable projector and projector screen. Students also have access to six small touch screen digital cameras, which allow them to record themselves, as a means of providing evidence of their competency and achievements. They can either video tape themselves to show their competency or record an audio clip or alternatively give a written demonstration. Essentially DIDG Childcare is an electronic tool box for students, which covers all aspects of the teaching and assessment of the Certificate III in Children's Services.

Discussion

What Works

The program is currently based as software installed on laptops with no need to access the internet. However, there is an option of expanding the Project further by making it available to students online. However, keeping the course compounded within a program on a computer is one of the appealing and functional aspects as the expanding World Wide Web is yet to reach many rural and remote Aboriginal communities. Having the program contained within a laptop makes accessing VET as simple as plugging into a power outlet. The electronic nature of the program also allows for the video clips and other unit information to be maintained and kept up to date to ensure the course contains current best practice. The digital video clips also provide a consistency to the teaching, which has provided a means to combat absenteeism, as no student will miss out due to the information being contained within video clips that they have access to as often as they need in order to retain the information and feel that they are ready to be assessed. However, it subsequently increases the need for one on one mentoring to keep the group as a whole at the same level, moving through the units of the course.

Acquisition and retention of students has proven to be difficult as many of the students tend to be reluctant to progress on to further studies due to a negative perception of formal education, partly due to previous educational experiences that have decreased their confidence. This reflects upon the very issue this Project hopes to overcome by providing Indigenous students learning experiences that create educational and life opportunities. The challenges of overcoming previous negative learning experiences have been met through drawing upon the unique characteristic of Indigenous culture that places a high value on family and community. This has enabled the Indigenous Project support workers to network within the Tiwi Islands and Palmerston community to source out and encourage the Indigenous women to attend the workshops.

The National Aboriginal Education Committee (NAEC) has identified the need to recognise and build upon the distinctive cultural heritage of Aboriginal students whether they come from urban, rural or traditional orientated families (Hughes and More 1997). The Project is actively seeking to meet this need as the process has largely involved using video technology to collect a variety of experts and qualified childcare industry workers from a mixture of cultures with an emphasis on Indigenous interviewees. A further benefit of the video technology is the potential for the course to be appropriate to the context of the learners by filming interviews and demonstrations of competencies within the community (and potentially in local languages) that the course is being taught. This would increase the relevance of the developed skills and learning—a factor which has been identified as a specific characteristic in effective Indigenous teaching and learning strategies.

Challenges

A particular characteristic of the low literacy learner is the level of support and mentoring required for them to achieve success. There have been a number of challenges presented due to the level of support required and the lack of teacher availability. At present, the training is delivered by a course coordinator, who developed the program and an Indigenous Project support worker. The limitations in the number of staff have proven to be a challenge. The Project support worker is currently undergoing further study in the Diploma in Children's Services, to enable the possibility of making the Indigenous focus of the program sustainable. To make the Project sustainable and increase Indigenous ownership of their education, current students have been approached to begin discussions, as to whether they would like to be mentors for future students in the next intake. Fliers providing information about the course and the opportunities it provides are being developed to promote the second stage of the Project and recruit future students.

As the implementation of electronic databases are new to VET within the Childcare Industry there are features of the program that require improvements. The structure of the database has many layers, which can make it difficult for students to navigate through the units competencies and required assessments. As many of the students have had limited exposure to computer programs, it takes time to explain the process to the students, which requires one on one demonstration of the steps in using the electronic program.

At the time of completing this paper the Project was in its first semester of delivery. The students were responding well to the method of delivery providing positive feedback. Unfortunately further information on the outcome of the students is unable to be given at this point of the course. However, the current progress of the students can be summarised as follows. In a cohort of 15 students, two students have begun part and full time work; three are currently engaged in traineeships in the industry and have now completed the competencies as part of workplace assessments, which are also filmed and uploaded as evidence of their competency within the units; and five students have unofficially withdrawn from the program as they have stopped attending the weekly workshops. Overall, the 10

remaining students have all successfully achieved nine units of the 14 comprising the Certificate III in Children's Services. They have demonstrated their competency through uploading digital video clips of themselves completing the given assessments either through demonstrations or interviews.

Conclusions

The evaluation of DIDG Childcare has highlighted a number of practical elements that makes the program particularly effective for Indigenous learners in the context of the Palmerston and Tiwi Island communities in which it is delivered. In particular, as an electronic medium for training and assessment for remote locations it is adaptable to places where there is limited Internet bandwidth—it does not depend on the Internet for delivery. Because it uses multimedia both as a teaching and as a learning tool, it is readily accessible to low English literacy learners, who are part of the current cohort of students. Further, it builds on learning styles that are appropriate for Indigenous learners and generates high levels of self-motivation because of the enjoyment involved in gathering evidence and engaging with the digital technologies. Because it is electronic, it can be readily adapted to different contexts and could potentially be used in languages other than English.

However, the program is still undergoing development and it is recognised that these tools are not a cure-all for Indigenous vocational learning. While the responses to the training have generally been positive and there are some good employment and training outcomes emerging, student retention is an issue of some concern. Further, because this is a new way of learning for many, a high degree of support and mentoring is required to make the training work. To date the training is being delivered by a non-Indigenous trainer and an Indigenous support worker. To increase local ownership of the program it is hoped that the primary teaching role can be taken over by an Indigenous trainer.

Currently there is a paucity of research that illuminates the distinct differences between the learning styles of Indigenous and non-Indigenous students, which would justify the need to develop more appropriate methods of teaching. This effectively means that individual teachers must take it upon themselves to bridge the gap to enable Indigenous learners' success in mainstream education. DIDG Childcare is one of these attempts to explore the adaptation of technology for more appropriate use in Indigenous contexts.

While at the moment the program is being used as part of a limited-scale Project, there is potential for the idea to be used in other contexts, particularly in places where English language and literacy are not used and particularly for learners who are more visually oriented.

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