ascilite
ascilite 2012
FUTURE CHALLENGES | SUSTAINABLE FUTURES
25 - 28 November 2012 | Wellington | New Zealand

Designing to close the gap

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This paper reports on the initial phase of the development of a large scale online design and implementation project, known as the ACIKE Online Unit Development Project, for the Australian Centre of Indigenous Knowledges and Education (ACIKE). The project is underpinned by a design-based research framework and encompasses the design, development and staged delivery of 81 units across seven higher education undergraduate and post-graduate courses. The rationale underpinning the project is to promote Indigenous learners' participation and success in higher education, with a particular focus on the online environment, whilst providing opportunities for all students to develop the skills and knowledge to work cross-culturally in a learning environment focused on building Indigenous cultural competence.

Keywords: design-based research, educational design, Indigenous, higher education, templates

Introduction

The higher education environment in Australia is being reshaped by funding, policy and regulatory changes in line with a vision to create 'an outstanding, internationally competitive tertiary education system to meet Australia's future needs' (Bradley et al., 2008, p. x). This vision of a sustainable future entails a broadening of the participation base in higher education, particularly from groups of people currently under represented, including 'Indigenous people, people with low socio-economic status, and those from regional and remote areas' (Bradley et al., 2008: xi).

The Australian Centre for Indigenous Knowledges and Education (ACIKE) is one institution taking up the challenge to increase the participation of Indigenous learners in higher education. ACIKE is a joint initiative of Charles Darwin University (CDU) and Batchelor Institute of Indigenous Tertiary Education (BIITE) which commenced delivery of courses in 2012. ACIKE offers a learning environment that aims to 'provide pathways to build the social, human, economic and identity capital of Indigenous peoples across Australia' (Charles Darwin University, 2011a).

The ACIKE model represents a significant shift in the way in which higher education is being offered to Indigenous people in the Northern Territory and across Australia. ACIKE offerings incorporate digital technologies into the learning mix. Units of study offered in internal, external and intensive workshop modes all utilise learning materials and activities developed in Learnline, CDU's version of the Blackboard Learning Management System (LMS). The inclusion of online learning as a component of all delivery modes in ACIKE has the potential to engage Indigenous and non-Indigenous learners with each other and with content in new ways; however, this approach is not without challenges and setbacks.

Access to computers remains a stumbling block for Australian Indigenous learners accessing higher education. This reality suggests that assumptions about the benefits of the integration of technology across ACIKE courses require careful review and evaluation. Indigenous Australians experience reduced access to computers and the internet as compared to the wider community (ABS, 2008) as well as facing issues which compound access such as low levels of English literacy, the user-friendliness of the location of public access computers, and restrictions to computer usage as a result of avoidance relationships and connections to the land where public access computers are located (Daly, 2005; Nicholls, 2009; Reedy, 2010; Vodic et al., 2012). CDU's rollout of a mobile learning environment in the second half of 2012 provides opportunities for leaners to access and engage with Learnline content using smart phones, iPads and other mobile devices even when they do not have discretionary access to an internet enabled computer. The potential of the mobile augmented learning environment to enhance Indigenous student participation is highly exciting but it is too early yet to measure its impact.

The ACIKE Online Unit Development Project

This paper reports on the first twelve months of the ACIKE Online Unit Development Project which involves the design and staged development and delivery of 81 Learnline units. The first, though necessarily brief, part of

the ACIKE project was spent conceptualising the design of the ACIKE online learning environment. The initial design period was informed by research and review of literature in educational design, with a particular focus on Indigenous pedagogies, as well as by the context of the project. This period was somewhat constrained by the pragmatic realities of the eighteen month timeframe for the project deliverables to be achieved and the competing agendas and power dynamics that played out in the relationship between the project partners.

The early design work led to the first iteration of the ACIKE Learnline template, which provides a framework for the development of online units, providing consistency in design, navigation and approach. The template assists academic staff in the development of units and enhances the usability of Learnline sites for students. The template provides a practical guide for academics moving into developing and teaching in the online space for the first time. The template also embodies best-practice design principles (Akarasriworn et al., 2011), a student-centred approach to learning, and is underpinned by social justice principles which are in alignment with ACIKE's goals and the broader CDU strategic aim to position the university as a first choice destination for Indigenous Australians seeking higher education and as 'a leader in the teaching and understanding of Indigenous knowledge systems' (CDU, 2010, p. 6).

The design process is underpinned by an understanding that online learning spaces reflect and reinforce 'values, ideologies, and images that are motivated inclusions and exclusions which act in the interests of particular cultural, class and gendered groups' (Luke, 1988 in Henderson, 1994, p.10). The ACIKE Learnline template is intended to provide a framework for online learning which reflects the ACIKE context and which promotes the success, retention and completion of Indigenous people in higher education courses and which provides all students with 'the knowledge, skills and understandings which form the foundations of Indigenous cultural competency' (Universities Australia, 2011, p. 181).

Rationale

Recent data show that Australian Indigenous students are completing year 12 education at higher rates than ever before (ABS, 2011; Karvelas, 2012). There are, however, significant challenges and changes required in order to ensure that school completion rates for Indigenous students match that of the wider Australian population and that year 12 completion translates to increased and equitable representation of Indigenous students in higher education. In Australia, Indigenous access, participation, success and retention in tertiary education are significantly lower than that of the general population. Australia wide, the Indigenous participation rate in higher education sits at 1.25% and would need to more than double to 3% to achieve parity compared with the total number of domestic students participating in higher education. (DEEWR, 2011a; DEEWR, 2011b)

The Northern Territory (NT) has an Indigenous population comprising 32% (ABS, 2010), and is the state or territory in Australia with the highest Indigenous population as a proportion of total population. The Indigenous participation rate in higher education in the NT of 15.63% represents students enrolled in both BIITE and CDU in 2006, prior to the ACIKE partnership, and while this is higher than other states, it is lower than the rate which would represent parity with the Indigenous population of the NT (DEEWR, 2011a). The ACIKE partnership faces the challenge of capitalising on the strengths of both organisations to design the conditions that optimise Indigenous students' access, participation, success and retention in higher education, arguably at a rate that matches or exceeds the pre-ACIKE Indigenous combined participation rate in higher education.

Design-based research

Design–based research is increasingly used in the field of technology-focused educational research. The characteristics of design-based research include situating research within an educational context and the design of an educational intervention and testing of it over many iterations and refinements. Design-based research results in reflection, theorizing and the development of practical design principles which may have wide application.

In many respects design-based research is similar to action research in that it 'seeks to increase the impact, transfer and translation of education research into improved practice' (Anderson & Shattuck, 2012 p.16) although design-based research has the potential to be wider reaching than action research as it moves beyond a practitioner researcher approach to one that involves a design team which includes partnerships between practitioners and researchers. Despite this potential, most design-based research literature reflects small-scale educational innovations and interventions (Anderson & Shattuck, 2012; Barab & Squire, 2004) rather than larger-scale interventions with widely applicable outcomes. The scope of the ACIKE Online Unit Development Project, with a focus on the design and delivery of 81 units, has implications for online unit design and delivery

within ACIKE and potentially more broadly across CDU and BIITE. The scale of the research in testing a 'disrupting innovation' (Anderson & Shattuck, 2012, p. 24) pushes the boundaries of design-based research and will potentially lead to new understandings of what works for Indigenous learners in the online environment in the ACIKE context as well as developing theoretically grounded design principles which address broad systemic issues to do with inclusion and exclusion of Indigenous knowledge and issues in a wide range of university courses.

Methods

The development of design-based research is characteristically informed by a mixed method approach to data collection, including the use of qualitative and quantitative methods. Design-based research is a process with the focus of data collection methods changing as the research progresses through iterative phases of development, with qualitative methods used primarily in the early phases of design, implementation and preliminary evaluation, and quantitative methods introduced 'as the design is re-evaluated, refined [and] scaled up' (Bowler & Large, 2008, p. 41).

In the early phases of the ACIKE project a review of literature and semi-structured interviews with Indigenous students already using Learnline at CDU provided focus for the initial design of the ACIKE Learnline model and the subsequent template which was designed to guide unit development in the LMS. Feedback from a focus group comprising of BIITE and CDU staff was used to refine the initial template design prior to implementation by the ACIKE Online Unit Development Team in partnership with academic staff from BIITE and CDU. The development of the first 38 ACIKE Learnline units, based on the initial template, occurred in preparation for delivery in Semester 1 2012.

Evaluation of the first phase of the project is planned but has not yet commenced. Evaluation will encompass review of the design process, the ACIKE Learnline model and template, and evaluation of individual ACIKE Learnline units. An instrument to evaluate exemplary Learnline units at CDU, currently under development, will be used to review individual ACIKE Learnline units and as a tool for providing feedback to academic staff to guide iterative development of online units. Subsequent cycles of evaluation will include interviews with academic staff, tutors, students, members of the ACIKE Online Unit Development Team and others involved in the project. The range of data collection methods and sources of data will assist in providing triangulation of research findings and thus support the validity of the design principles that emerge from the project.

Reflections

As the first phase of the ACIKE Online Unit Development Project nears completion, and formal evaluation has not yet commenced, it is too early to reflect on the research findings or to divine the final design principles that may emerge. The following section, however, presents some reflections on key elements of the project to this point.

Alignment of priorities and focus of project partners

A major innovation such as the ACIKE Online Unit Development Project requires alignment of direction and focus from the leadership and staff of the project partners from the beginning of the project. As with other recent design-based projects the issues of 'project structure and power relations and negotiations aimed at realising conditions for real partnership' (Leeman & Wardekker, 2011, p. 313) were possibly not given sufficient consideration prior to the commencement of the project. In the ACIKE project a shared understanding of the project goals, and processes to achieve these, were negotiated and articulated through a project plan. In addition, a communications strategy was put in place to ensure formal communication and reporting processes were in place at all levels of the project. Despite this, the articulated vision for the project has been impacted by the partners' differing political agendas and assumptions of entitlement and ownership. In addition, differing priorities on issues such as staffing and workload management have impacted on the timely achievement of the project milestones.

Co-operative diversity

The ACIKE project has benefitted from a rich array of formal and informal collaborative partnerships, including those within the ACIKE Online Unit Development Team itself. These have provided opportunities for creativity and innovation in the project design and implementation. A defining characteristic of design-based research is that it involves collaborative partnerships between researchers and practitioners (Anderson & Shattuck, 2012).

This recognizes that any individual will not have all the knowledge to negotiate the complexities of research, design and implementation nor the diverse range of knowledge and skills needed for successful innovation and change implementation. The progress made in the ACIKE project is characterized by a high-performing team which has leveraged diversity of experience and background between practitioners and the project team and channeled this into the project.

Teacher preparation

Findings from a recent design-based research study advise that 'for any major innovation to succeed, the teachers involved need to be adequately prepared and to be in a position to make a difference' (Leeman & Wardekker, 2011, p.324). In the ACIKE project, training of teachers to use Learnline, the ACIKE template and in teaching and learning in an online environment was conducted concurrently with the initial design phase of the project. There was little time for ACIKE staff to prepare for the new learning environment, and unit development for the online environment has been, in most cases in addition to teaching and administrative responsibilities. This had an impact on the opportunity for systematic and consistent development of quality online units and on the timeliness of unit development.

Conclusion

The ACIKE Online Unit Development Project is an example of a large scale educational innovation underpinned by design-based research. The scale of the project and its application across courses and disciplines provides the opportunity for the emergence of theoretically grounded design principles, refined in the context of ACIKE, which will potentially impact on online course design across CDU and more widely to broaden participation in higher education by Indigenous students. The project aligns with the Australian Government and CDU's vision of broadening educational participation to groups currently under-represented in higher education. The vision of increased participation by Indigenous students in ACIKE is yet to be realised. Indeed, the project has been characterised by the messy reality of research conducted in the 'buzzing, blooming confusion of real-life settings' (Barab & Squire, 2004, p. 4) where it has suffered set-backs linked to the competing agendas of the project partners and seemingly impossible time constraints. Against this backdrop the design, development and delivery of the first phase of ACIKE Learnline units has been achieved, with ongoing development, trialling, evaluation and iterative development of the ACIKE Learnline template continuing. The contribution of this project to ACIKE's vision of providing pathways and building sustainable futures for Indigenous Australians is anticipated to be significant, however, the claims about the potential of new models of delivery and approaches to learning and teaching in the online environment in the ACIKE context are yet to be fully implemented and evaluated.

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Please cite as: Reedy, A. (2012). Designing to close the gap. In M. Brown, M. Hartnett & T. Stewart (Eds.), Future challenges, sustainable futures. Proceedings ascilite Wellington 2012. (pp.756-760).

https://doi.org/10.14742/apubs.2012.1615