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Using digital technologies to implement distance education for incarcerated students: a case study from an Australian regional university

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Abstract

As universities become increasingly reliant on the online delivery of courses for distance education, those students without access to the Internet are increasingly marginalised. Among those most marginalised are incarcerated students who are often from low socio-economic status backgrounds and have limited access to resources. This article reports on four projects that incrementally build on each other, three of which are completed, at the University of Southern Queensland that seek to provide access to higher education for incarcerated students. These projects developed a modified version of Moodle, called Stand Alone Moodle (SAM), which doesn't require Internet access, but provides the same level of access and interactivity as regular Moodle. EBook readers were also used in two of the projects. A description of the projects, a summary of the results and issues is provided. The projects will be extended to deploy Stand Alone Moodle and tablet computers to correctional centres across Australia with a focus on Aboriginal and Torres Strait Islander students.

Keywords: access to education; digital divide; distance education; higher education; incarcerated students

Introduction

Incarcerated students have traditionally accessed higher education through distance education (Justice Action, 2012). This was feasible when universities printed and dispatched printed materials (Dorman & Bull, 2003), but is becoming increasingly difficult as universities move online. Most Australian universities, in line with those in the rest of the world, are increasingly reliant on the online delivery of courses and programs. Most are making an increasing use of web 2.0 tools such as blogs, discussion boards and social media. Almost all undergraduate courses compel students to complete assignments requiring Internet research. In addition, the days of paper-based journals and books in libraries are rapidly disappearing. The University of Southern Queensland (USQ) likewise is moving towards the exclusive online delivery of courses and programs. All USQ courses have a StudyDesk presence (a version of the Moodle learning management system), which contains the course materials, lecture recordings, activities and assessments that students need to complete their courses. Some 80 per cent of USQ's students are studying at a distance and those students rarely, if ever, come to campus. The university library, though it does have a physical presence, has a collection featuring large numbers of electronic journals, databases and electronic books. To retrieve these resources, students must have access to the Internet and download them through the library website (http://library.usq.edu.au/). This reliance on the online delivery of courses, programs and research resources poses significant challenges for incarcerated students, who in all jurisdictions within Australia, are not allowed direct access to the Internet (Hancock, 2010).

This article reports on four projects undertaken by the Australian Digital Futures Institute (ADFI) and the Open Access College (OAC), both at USQ, in collaboration with Serco Asia Pacific and Queensland Corrective Services (QCS). These projects ultimately aim to provide electronic access to higher education, including preparatory programs, for incarcerated students.

Methodology

All of the projects were undertaken using a design-based research methodology, which is a blend of empirical research with the theory-based design of learning environments (Design-based Research Collective, 2003, p. 5). The method centres on the systematic investigation of innovations designed to improve educational practice through an iterative process of design, development, implementation and analysis in real-world settings (Wang & Hannafin, 2005). A major strength of design research lies in its adaptability to adjust the intervention based on ongoing findings from participants.

Managing resource development

USQ is planning to become paper-free by semester I 2015 and will not supply printed materials to students. It is primarily up to individual course lecturers to accommodate incarcerated students on an *ad hoc* basis. This often requires the printing of web-based assessment items and copying recorded lectures onto CD by academic or administrative staff for viewing in the correctional centre computer labs or on in-cell laptops provided by Queensland Corrective Services. A limited number of in-cell laptops, unable to connect to the Internet, are available to incarcerated students studying undergraduate programs in Queensland. Currently, USQ caters for about 200 Tertiary Preparation Program students and some 100 undergraduate incarcerated students across a range of programs.

The PLEIADES pilot project

Portable Learning Environments for Incarcerated Adult Distance Education Students (PLEIADES) was a project that ran in semester 2 and 3 2012 (figure 1). It made use of a version of USQ's StudyDesk which was installed directly onto the correctional centre's education server and didn't require access to the Internet. This instance of Moodle was named Stand Alone Moodle (SAM). To enable SAM to work, course materials had to be packaged with the course, instead of being accessed from the Equella repository housed at USQ. SAM could be accessed by incarcerated students from the correctional centre computer lab. The lab contained ten blade PCs which operated from the server. The materials on SAM were supplemented by reading materials provided on eBook readers. The eBook readers had to meet certain requirements for security compliance for QCS. They could not have any capacity to connect to the Internet; had to have integrated batteries that could not be removed; and could not have SD card slots. The project team sourced Sony PRS350s which complied with these requirements. Even at the time of purchase, these eBook readers were considered to be obsolete. The PLEIADES pilot project was conducted at the Southern Queensland Correctional Centre (SQCC), an all-male, high security correctional centre operated by Serco Asia Pacific. SQCC is near the small township of Gatton, and about 45 minutes' drive from USQ's Toowoomba campus.

The Tertiary Preparation Program is offered by the Open Access College to those students unable to enter university through traditional means. Upon completion, students are guaranteed entry into a range of USQ undergraduate programs. One course from the OAC's Tertiary Preparation Program, *TPP7120 Studying to Succeed*, was selected for this pilot project. TPP7120 is normally offered online or in face-to-face mode. It is one of four core courses that make up the Tertiary Preparation Program. In order to prepare this course for deployment using SAM, all the web links had to be removed. Files had to be resaved in file formats compatible with the correctional centre computers. Finally, all files had to be copied from USQ's Equella repository and packaged with the courses for deployment. Once the course had been modified, it was tested by project personnel to ensure that it was fully functional.
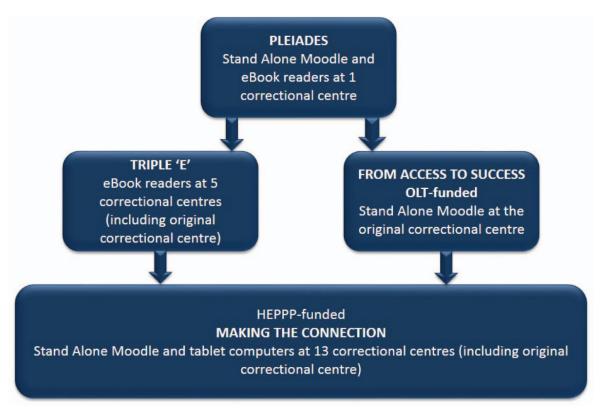
Figure 1. The relationship between USQ projects providing digital access to courses for incarcerated students

The course readings for the eBook readers were converted to ePub format by a technical officer, in many cases converting them from MS Word or PDF format using Apple Pages. Permissions were sought from academic publishers for the conversion and vetted by a copyright officer at USQ. The ePub format enabled text to reflow on the small screens when the font size was changed. This was preferable to using PDFs as these would not resize and required endless scrolling across each line to view (Murphy, Martin & Farley, 2012).

Grant funded project: Improving Learning Experiences for Students without Internet Access with SAM

At the end of 2012, the project team was awarded an Australian government Office for Learning and Teaching Innovation and Development grant to the value of $AUD 217,000 to further develop Stand Alone Moodle. In the PLEIADES pilot project, the installation of SAM onto the correctional centre education server took two USQ ICT Services staff a day to install the server software, the latest instance of Moodle and the TPP7120 course. This was seen as unsustainable if SAM was to be rolled out to further correctional centres in the future. The aim of "From Access to Success" was to automate much of the installation of the server software, instance of Moodle and courses. In addition, the project team also aimed to automate the harvesting of student assessment including assignments and quiz results, and usage data. Again, this project used TPP7120. The course contained readings, self-marking quizzes, lecture recordings, other multi-media material, and assessment. Discussion boards were provided but only enabled students studying TPP7120 within SQCC to communicate with each other. There was no additional input from the lecturer in the discussion boards. This project has one year to run and is expected to finish in March 2015, after the end of semester 3.

The project team have already achieved some level of automation of Stand Alone Moodle. SAM can be deployed from a DVD and the instance of the course can be loaded from another DVD. With a few simple instructions, correctional centre education staff are able to readily remove the previous semester's course, update SAM and upload the new course from the DVDs. This process takes about thirty minutes; a significant improvement on the amount of time taken for USQ ICT staff to complete the tasks *in situ*.

Extending the scope

Though the original scope of the project was to deliver only one course, TPP7120, the project team decided to offer a second course, *TPP7181 Mathematics Tertiary Preparation.* The added objective was to see how well the systems and processes worked for multiple courses delivered in a state administered facility. The consultations with the Queensland Corrective Services led to the project team decision to expand the project to include Woodford Correctional Centre (WCC). WCC is a dual facility with a high security section and a low security residential section. This correctional centre is about two hours' drive from USQ's Toowoomba campus and is administered by QCS. The expected deployment in WCC is in semester 2 of 2014. There were insufficient funds within the "From Access to Success" project budget to further the trials of eBook readers.

The Triple "E" Project

A separate project was initiated by the OAC called the Triple "E" Project (for Empowerment, E-Learning and E-Readers) to further the research focus in prisons. The Sony PRS350 eBook readers were no longer available as they were superseded by Internet-enabled newer models. A substitute model had to be found which had no capacity to connect to the Internet. In consultation with QCS to ensure security was maintained, the project team decided to use BeBook Pures.

Access criteria

Again the criteria for the use of a device was kept. This model had no capacity to connect to the Internet, had an integrated battery but did have an SD card slot. After some experimentation with ways of disabling the SD card slot, the project team found that filling them with "builder's bog" was the most effective way of disabling them. The SD card slot remained dysfunctional even after the "bog" had been dug out with a sharp object.

Again, course readings, module guides and the course introduction book were converted into ePub format, vetted for copyright compliance and loaded onto the eBook readers.

Implementation of project

This project was deployed to an additional four correctional centres beyond SQCC. These were Brisbane Women's Correctional Centre, Wolston Correctional Centre, Maryborough Correctional Centre and WCC. The additional centres are directly administered by QCS. This project ran in semester I 2013 and it was decided not to continue past this semester due to a number of issues which will be elaborated later.

Results

Only small numbers of students enrolled in TPP7120 and TPP7181 at SQCC in any semester. There were a maximum of 17 enrolled and a minimum of 1 enrolled in either course at any one time. This was because it is very common for prisoners to be moved to another correctional centre at short

notice. As SAM has only been deployed at SQCC to date, if a student enrolled in either of those courses is moved, he necessarily had to leave the project. Focus groups were conducted with students before they used SAM and/or the eBook readers and at again at the end of the semester. Responses were coded according to emerging themes. A complication arising during the focus groups was the failure of the students to separate issues relating to the courses from those relating to the technologies or the correctional centre environment.

Students reported they had limited access to the computer labs due to unexpected lockdowns, competition with "industries" (work within correctional centres which prisoners are required to do), and access restrictions due to poor behaviour. In addition, it was found that students wrote their assessments by hand in their cells and often spent their time in the computer lab typing their assignments. At first we thought this was because the students wished to appear to be professional and submit typed assessment pieces; handwritten assessment tasks are acceptable in the TPP. However, the education officer revealed it was because the students wanted access to the spell checker in the word-processing program.

When students did use SAM they were largely positive, especially about the instant feedback afforded by the self-marking quizzes. Students for the most part didn't access the lecture recordings because they were too long to view in the available time. They reported that they would use SAM more if there was a way they could type up assignments in their cells; if they could access SAM on laptops or tablets in their cells; and if more courses were offered using SAM.

The responses to the eBook readers were varied with students using the Sony PRS350s being more positive because of the extra functionality of those devices as compared to the BeBook Pures. The Sony eBook reader allowed students to highlight text and to make notes. They also had an on-board dictionary which the students used extensively, mostly for playing Scrabble. Even so, students complained about the size of the screens, size of the font and the difficulty in switching between course readings (having to close one before opening another). Education officers were trained in the use of the eBook readers in order to instruct students and instructional videos were placed on the SAM Study Desk but were rarely accessed.

The BeBook Pures used in the Triple "E" Project didn't have the capacity to allow students to make notes or highlight text. Also, they didn't have an on-board dictionary. These devices also have only very limited processors and would take a long time to load materials and freeze up when students tried to move between readings. The students using the BeBook Pures almost without exception handed them back to education officers in exchange for the hard copy materials. In addition, the BeBook Pures failed to hold charge requiring them to be handed back to education officers frequently for charging (education officers retained possession of cords and chargers).

It is thought that one of the reasons the BeBook Pures were so difficult to use is because of the large file sizes of the materials. The project team considered taking the course materials and combining them into one large file which could be subsequently divided up into modules that could be accessed sequentially, removing the need to switch between books. This idea was abandoned as the structure of the course did not lend itself to this restructuring of the course materials without considerable adjustment. The Triple "E" project was abandoned after one semester with the project team deciding that tablet computers would be more suitable for use in correctional centres.

Looking to the Future: Making the Connection

In August 2013, the project team were awarded $AUD4.39 million through the Australian government's Higher Education Participation and Partnerships Program for their project Making the Connection: Improving Access to Higher Education for Low Socio-Economic Status Students with

ICT Limitations. The USQ in collaboration with Bendigo TAFE, OERu (Open Educational Resources University), QCS, Serco Asia Pacific, the Careers Employment Australia (CEA) Group and Salvation Army Employment Plus, will develop a complete higher education pathway aimed at widening access for Indigenous and non-Indigenous incarcerated students. USQ's Indigenous Higher Education Pathways Program (IHEPP), Tertiary Preparation Program (TPP), a Diploma of Arts and a Bachelor of General Studies will be adapted so that students do not require access to the Internet to undertake the studies. In addition, these programs will be populated with Open Educational Resources. The Mumgu-dhal tyama-tiyt Certificates I, II and II for Indigenous students who have not completed secondary school will be similarly adapted by Bendigo TAFE. This project will also facilitate continued participation in education or transition into the workplace after release from custody through programs developed by the CEA Group and the Salvation Army.

This combination of programs provides multiple entry points into the pathway for Indigenous and non-Indigenous incarcerated students (Pechenkina & Anderson, 2011). It facilitates participation for students with varying degrees of experience, education and digital literacy. This is significant given that Indigenous students are half as likely as non-Indigenous students to complete year 12 (Wong, 2008). Low levels of education remain a key part of the ongoing cycle that leads to the over-representation of Indigenous people in Australian prisons. The programs will be delivered using SAM providing incarcerated students with similar course materials and activities to those available to traditional students. In addition, Android tablet computers will be supplied preloaded with course materials that will enable incarcerated students to study even without access to computer labs.

The project will be developed and implemented in a staged manner over a three-year period in correctional centres across Australia. It will first be deployed at SQCC in Queensland, and the Acacia and Wandoo Reintegration Centre both located in Western Australia. These correctional centres are administered by Serco Asia Pacific. Subsequent stages will see the project expanded to incorporate an additional 10 correctional centres across Australia.

Conclusion

The provision of distance education to incarcerated students in Australia is becoming increasingly difficult given that these students are unable to access the Internet. This article reports on four projects that are either completed or underway to provide incarcerated students access to digital technologies, without access to the Internet. The aim of these projects was to enable students without Internet access to have comparable study experiences to those students studying at a distance outside of correctional centres. In addition, they aimed to foster the digital literacy skills needed for further study or the workplace upon release (Pellegrino & Hilton, 2012).

The projects to date have focused only on maintaining security of the devices and of ensuring that the technology, namely SAM and the eBook readers, worked in such a restricted environment. There were no security breaches associated with the use of the technologies and all eBook readers were returned unharmed at the end of the PLEIADES and Triple "E" projects. While it was evident the Stand Alone Moodle could provide a rich, virtual learning environment for incarcerated students, the eBook readers only engendered frustration because of their limited capabilities. In response to this, the project team, in consultation with Serco Asia Pacific and Queensland Corrective Services, have decided to trial the use of tablet computers in the Making the Connection project. These tablets will not be able to connect to the Internet, not have SD card slots and must have integrated batteries (so that they can't be removed and used for other purposes by the students).

The Making the Connection project, has just been initiated and will provide Stand Alone Moodle and tablet computers to Indigenous and non-Indigenous incarcerated students in 13 correctional

centres across Australia. For the first time, this project will specifically tailor courses for delivery on these platforms using Open Educational Resources, including open textbooks. This project, which will end in September 2016, has the potential to alter the way higher education institutions deliver programs to all students without Internet access, but particularly incarcerated students.

   The project team recognises that getting students to engage with the technologies and available courses will require more than just access. It will also require the employment of appropriate pedagogies and fostering of cultural capital (Sims, Vidgen & Powell, 2008). Engagement staff employed as part of the Making the Connection project will engage community organisations to assist with supporting students. These organisations will also work with students around the selection of courses and also transition into further study or into the workplace upon release from custody.

References

Design-Based Research Collective. (2003). Design-based research: An emerging paradigm for educational inquiry. *Educational Researcher, 32*(1), 5–8. Retrieved from http://www.designbased research.org/reppubs/DBRC2003.pdf

Dorman, M. & Bull, D. (2003). *Aligning educational needs with institutional priorities: Facilitating offender reintegration into contemporary society.* Paper presented at the IFECSA Conference: Unlocking Doors—Rebuilding Lives Through Education. Retrieved from http://www.acea.org.au/Content/2003%20papers/Paper%20Dorman_Bull.pdf

Hancock, V. (2010). Essential, desirable or optional? Making distance e-learning courses available to those without internet access. *European journal of Open, Distance and E-Learning,* 2(2). Retrieved from http://www.eurodl.org/?article=410

Justice Action. (2012). *Computers in Cells: Maintaining Community Ties.* Retrieved from http://justiceaction.org.au/cms/images/JusticeReformPapers/computers%20in%20cells%20pdf.pdf

Murphy, A., Martin, N. & Farley, H. (2012, November). Using e-readers to increase access to course content for students without Internet access, in *Future Challenges, Sustainable Futures, Ascilite Conference 2012*, Wellington, New Zealand.

Pechenkina, E. & Anderson, I. (2011). *Background Paper on Indigenous Australian Higher Education: Trends, Initiatives and Policy Implications: Prepared for the Review of Higher Education Access and Outcomes for Aboriginal and Torres Strait Islander People.* 27. Canberra: Commonwealth of Australia. Retrieved from http://sydney.edu.au/documents/about/higher_education/2011/20110930%20IndigenousHigherEducationReview-ReseachPaper.pdf

Pellegrino, J. W. & Hilton, M. L. (2012). *Education for life and work: developing transferable knowledge and skills in the 21st century*. Washington, DC: National Research Council.

Sims, J., Vidgen, R. & Powell, P. (2008). E-learning and the digital divide: perpetuating cultural and socio-economic letisim in higher education. *Communications of the Association for Information Systems, 22*(1), 429–442.

Wang, F. & Hannafin, M. J. (2005). Design-based research and technology-enhanced learning environments. *Educational Technology Research & Development, 53*(4), 5–23.

Wong, A. (2008), *Build Communities, Not Prisons: The effects of the over-representation of Indigenous people in the criminal justice system*. Hobart, University of Tasmania. Retrieved from http://www.fass.uts.edu.au/communication/students/work/wong.pdf.