

FROM ACCESS TO SUCCESS: IMPROVING THE HIGHER EDUCATION LEARNING EXPERIENCE FOR INCARCERATED STUDENTS¹

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Higher education institutions are increasingly relying on digital technologies that require internet access to support learning and teaching, particularly from a distance. Disadvantaged student groups that do not have access to the internet, such as incarcerated students, are often excluded as a result. This paper reports on a project that will develop and trial a sustainable and innovative learning management system (LMS) called Stand-Alone Moodle (SAM) that is able to operate without internet access. SAM will enable institutions to provide these students with similar course materials, activities and support available to other students, thereby improving the quality of the student learning experience. SAM will be trialled within a Queensland correctional centre and evaluated using a design-based research methodology. The findings and recommendations from the project will be disseminated to learning institutions and correctional centres across Australia to encourage equitable access to education for disadvantaged students. The digital literacies of staff and students, the maintenance of the technology and sufficient access to computer labs all had to be accommodated within the design of the project.

Introduction

In 2009, the Australian Government identified the need to raise the aspirations of those traditionally underrepresented in higher education. The ambitious target was set at a participation rate of twenty per cent of undergraduate students to come from low socio-economic status backgrounds by the year 2020 (Sellar & Gale 2011, p. 123). To meet this target, higher education institutions are increasingly leveraging online technologies, reducing the reliance on face-to-face instruction to afford greater levels of flexibility to accommodate non-traditional cohorts. Unfortunately, this increasing reliance on the learning management

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system and other digital technologies is based on the assumption that students have reliable access to the internet. For many students this is not the case, for example forty-four per cent of the students who participated in the University of Southern Queensland's (USQ's) Tertiary Preparation Program (TPP) in Semester 2 2012 claimed they did not have access to the internet (USQ, unpublished data). Consequently, this increasing reliance on digital devices and online learning increases the risk of further excluding disadvantaged students without reliable access to the internet from engaging in learning (Hancock, 2010; Aceves, Aceves & Watson 2011).

Correctional centres are highly reliant on the provision of distance education for offenders who wish to undertake higher education studies (Justice Action 2012). Previously, distance education was based primarily on a 'correspondence' mode of delivery with institutions posting large blocks of printed materials to students. With the emergence of e-learning, distance education institutions are becoming increasingly reluctant to print course materials. Courses delivered electronically often contain interactive multimedia, internet-based resources, computer-mediated communication and promote interaction between students and educators through a campus-based web portal. Higher education institutions that still provide course materials for students without internet access often employ exceptions handling processes, using large volumes of printed copies of the course materials and learning support resources (Dorman & Bull 2003). This is costly for universities to assemble, print and post, is in no way interactive, and cannot incorporate all of the learning support resources of the course.

The PLEIADES (Portable Learning Environments for Incarcerated Distance Education Students) project was designed to help work around these issues. It piloted the use of secure e-learning and mobile learning technologies that were independent of the internet, for learning within a correctional centre. Incarcerated offenders are prohibited from accessing the internet in any way and are therefore generally excluded from accessing course materials electronically. In order to address this exclusion, for this project, course materials were loaded onto eBook readers that were incapable of accessing the internet. Additionally, an internet-independent version of the open source LMS, Moodle, was developed and piloted over a seventeen-week-semester period in a Queensland correctional centre. *TPP 7120 Studying to Succeed*, a foundation course in USQ's Tertiary Preparation Program, was modified to provide incarcerated students with access to course materials, learning experiences and assessment activities, without needing access to the internet. At the end of the trial period, the project team successfully applied for funding to further develop the Stand Alone Moodle aspect of the project. The resultant project entitled *From Access to Success: Improving the Higher Education Learning Experience for Students without Internet Access* was funded by an Australian Government Office for Learning and Teaching Innovation and Development grant to the value of \$217,000. However, the funds were insufficient to further work with the eBook readers but alternative funding was sourced from the Australian Government's Higher Education Partnerships and Participation Program (HEPPP) to fund the Triple 'E' Project (Empowerment, E-Learning and E-Readers) which funded the use of eBook readers in five correctional centres. This project will be discussed in other papers at this conference.

USQ's Tertiary Preparation Program

The University of Southern Queensland (USQ) is a dual mode institution that delivers both on-campus and distance education and has a high proportion of students from low socio-economic status (SES) backgrounds or from rural and geographically isolated areas. USQ's Open Access College has long offered a Tertiary Preparation Program (TPP) which gives individuals the skills they need for tertiary study and guaranteed entry to a USQ undergraduate degree. The only formal entry requirements to study the TPP program, which runs at USQ's three campuses at Toowoomba, Springfield and the Fraser Coast and in distance education mode, is that students need to be at least 18 years of age in the year of enrolment. For students who meet the citizenship and residency requirements, the course is fee-free and Australian Government assistance is usually available to cover living costs for eligible students. Typically Tertiary Preparation Program students study full time for one semester depending on their academic ability and which degree they wish to enter.

TPP7120 Studying to Succeed is a compulsory course in the Tertiary Preparation Program and students are required to obtain a passing grade in TPP7120 in order to gain direct entry to a USQ undergraduate program. This course was the first target of the PLEIADES project and again with the 'From Access to Success' project. Additionally, another course in this program *TPP7181 Tertiary Preparation Mathematics Level A* will be included in the latter project. Students enrolling in the TPP often have less developed academic skills than their undergraduate colleagues (Bedford, 2007) and require significant academic and social support to complete their courses successfully (Mehrotra, Hollister, & McGahey 2001). A significant number of incarcerated students from Queensland and other Australian states enrol in the TPP but with many having limited numeracy and literacy skills, this cohort often struggles. Though the Tertiary Preparation Program is designed to ready students for the challenges of higher education, it is unlikely this lofty aim can be achieved when at USQ, instruction is delivered primarily online and incarcerated students cannot access the internet. The challenge is to develop those digital literacy skills in the incarcerated cohort, while they do not have access to the internet and the electronic USQ StudyDesk environment. The PLEIADES project was formulated to try and address this problem. 'From Access to Success' will further develop this pilot project by incorporating significant automation into Stand Alone Moodle to reduce the burden on both USQ ICT Services personnel and SQCC education officers.

The Students

Before the beginning of the PLEIADES project in February 2012, a meeting was held with correctional centre education officers from across Queensland to inform of them of the proposed project and to gauge their interest in participating in the projects should they be scaled up. The project team also seized the opportunity to gain a better understanding of the incarcerated students who choose to study at a tertiary level. A number of factors were identified that impacted on whether or not an incarcerated student chose to study.

The percentage of students currently participating in higher education is low due and a number of factors influenced the demographic such as:

- Low socio-economic status;
- Females do not see the value in education when they have families to care for on release;

- Younger prisoners (under 25 years old) are less inclined to study as they believe it will ruin their image (with peers);
- Older prisoners (over 25 years old) are more inclined to study as they are working towards a better future through an alternative career (to a criminal career);
- Considerable peer pressure not to study;
- Prisoners from non-English speaking backgrounds struggle with English language requirements in higher education; and
- Generally low literacy or numeracy skills among the prison population.

In addition, prisoners generally lack the confidence and motivation to study particularly as they do not value education and have often failed previously at school. Prisoners who do study tend to be serving longer sentences or are repeat offenders and have been in and out of prison a number of times (USQ, unpublished data).

Numeracy and literacy

Often among incarcerated students, levels of literacy and numeracy are very low (Mulcahy & Leone 2012). Dropout rates from the programs designed to address these needs is frequently high, students frequently reporting that the courses are pitched at an inappropriate level. In order to overcome these issues, SQCC education officers have been using the Compass programme, a tool developed by the Australian Council of Educational Research (ACER) and adapted for deployment in the correctional centre environment (<http://www.acer.edu.au/tests/compass>). The program uses the newest standards of assessment through an automated literacy and numeracy tool. Prisoners are engaged through targeting the program at an appropriate level and most importantly prisoners will predominately complete the program. The USB, Linux-based system, simply plugs and plays. The secure USBs are designed to run independently and do not require any use of the computer operating system. The program will pre-test, and then allocate activities accordingly. In this way, issues around numeracy and literacy can be alleviated and students are better prepared to enter into USQ's Tertiary Preparation Program.

The Education Officers

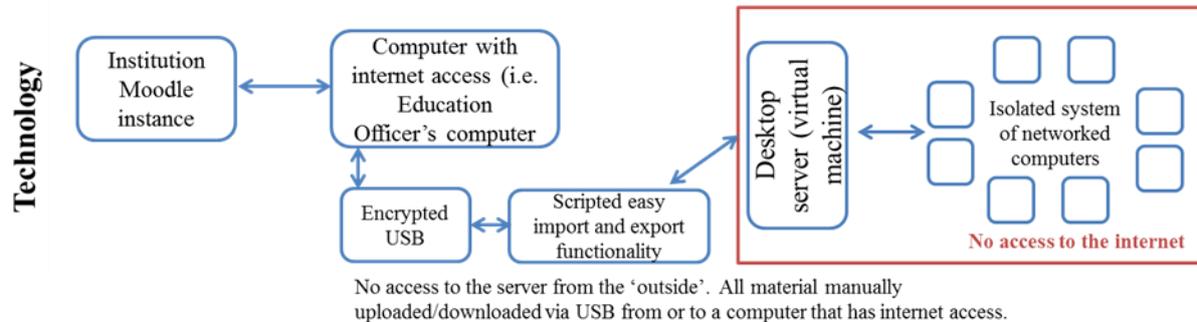
The education officers in the correctional centres generally oversee the provision of education to the incarcerated students. Students are not only studying pre-degree and programs from recognised universities; many are studying more vocational courses from TAFEs (Technical and Further Education) and other training providers. As incarcerated students under no circumstances have access to the internet, it falls to the education officers to download lecture materials, assignment coversheets and conduct any internet research of online journals that students might need to complete assignments. These resources are downloaded and printed by the education officers. This is usually very onerous for the education officer and forms a significant portion of their workload.

From Access to Success: Improving the Higher Education Learning Experience for Students without Internet Access

The project will be undertaken collaboratively between USQ, Queensland Corrective Services (QCS) and Serco Asia Pacific, operators of Southern Queensland Correctional Centre (SQCC) over a two year period. This project commenced at the beginning of 2013 at the Southern Queensland Correctional Centre (SQCC). SQCC is a high security, all male,

400 bed prison operated by Serco Asia Pacific about 45 minutes' drive from Toowoomba. The aim of the 'From Access to Success' project is to develop, implement and evaluate an alternative approach to online instruction that will widen access to higher education and improve learning experiences for students without reliable internet access. An innovative extension to the open-source learning management system (LMS) Moodle, called Stand-Alone Moodle (SAM), will be the primary focus of the project. SAM will not require access to the internet yet will still enable students to participate in online courses electronically. Students enrolled in distance education courses that have previously relied on paper-based course materials will benefit from the resources, activities and support available to students who are able to access the internet, thereby improving the quality of the student learning experience. Students will also be able to develop the digital literacy skills that feature as an essential graduate attribute for many higher education institutions.

SAM can be installed onto an isolated system of networked computers using a desktop server or virtual machine, which will enable students in areas without internet access to collaborate and work interactively. To activate the automated features such as assignment submission and exchange of information between the higher education institution's instance of Moodle and SAM, a mediatory device such as a memory stick will be required. Scripts will be developed that will allow the SAM administrator to import or export the relevant content to a memory stick, with the click of a button. At a computer terminal that does have internet access the administrator will access the USQ instance of the Moodle course and automatically import the relevant information and vice versa. The functionality and features of SAM are depicted graphically below:



Features	From tertiary institution to networked computers:	From tertiary institution to networked computers:
	<p>Automated exporting of data: Discussion logs exported to the lecturer and responses or answers to questions as well as feedback on assessments imported for students to view, allowing for a greater understanding of the student experience.</p> <p>Improved assessment: Students can now also be assessed on forum contribution (equivalent to mainstream students).</p>	<p>Automated harvesting of data:</p> <ul style="list-style-type: none"> • Assessments • Results from self-marking quizzes • Discussion board posts and queries <p>Improved access to collaborative and interactive learning resources: Collaborative discussions on Moodle forums, high quality multimedia resources such as video's, podcasts, recorded lectures, and cached websites. Ability to complete interactive activities such as self-marking quizzes.</p>

The first iteration of SAM was deployed on SQCC servers at the beginning of Semester II, July 2013. A proto-version was being used to bridge the span between the end of the PLEIADES project and the beginning of the 'From Access to Success' project. In the latest iteration of the SAM, courses were packaged onto a DVD and deployed by an IT officer and

education officer from SQCC. The education officer subsequently, enrolled the students into the version of Moodle on the SQCC server. A USQ tutor will visit SQCC every two weeks to monitor both the students' progress in the TPP courses and their interaction with the Stand Alone Moodle.

Evaluation

The projects have been conceptualised using a design-based research methodology with iterative cycles of planning, implementation and revision in response to feedback from participants and key-stakeholders. Design-based research 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-based research lies in its adaptability to adjust the intervention based on on-going findings from participants.

Focus groups with incarcerated students will be conducted pre- and post-courses to determine attitudes, experiences and efficacy of the Stand Alone Moodle software. Interviews will be conducted with education officers throughout the project. The TPP tutor is also keeping a reflective diary of her experiences with the students on her fortnightly visits.

Late-breaking news

Since we began writing this paper, we have learned of our success in securing \$AUD4.4 million to expand the 'From Access to Success' and PLEIADES projects to other correctional centres and with other USQ courses. The successful project entitled 'Making the connection: Improving Access to Higher Education for Low Socio-Economic Status Students with ICT Limitations'. This project aims to:

- Create pathways for Indigenous and non-Indigenous incarcerated students to participate in Higher Education.
- Establish a 'pipeline' to increase preparation of Indigenous incarcerated students for pre-tertiary programs.
- Create programs to transition incarcerated students from Higher Education into the workplace upon release from custody.
- Reduce recidivism of incarcerated students by increasing their employability through the development of digital literacies.
- Develop Stand Alone Moodle as a Learning Management System to enable the provision of digital learning without internet access.
- Develop a model for provision of Higher Education programs for students without reliable access to the internet.

The project will run from September 2013 to August 2016 with project partners USQ, Serco, Queensland Corrective Services, Bendigo TAFE, Careers Employment Australia, Salvation Army Employment Plus and the Open Education Resources University (OERu).

Conclusion

This paper describes two projects designed to minimise the digital divide between students enrolled in USQ courses outside of the correctional centre environment and those enrolled

within correctional centres. The greatest points of difference lie in differences in ability to access the internet and access to digital technologies. Students within correctional centres in Queensland are not able to access the internet in any form and have very restricted access to digital technologies. Once students' literacy and numeracy skills are enhanced through the ACER Compass program, students are able to study in USQ's Tertiary Preparation Program. *TPP7120 Studying to Succeed* was the target course of the PLEIADES project which developed a proto-form of Stand Alone Moodle, an internet-independent version of USQ's Moodle StudyDesk. Course readings were also deployed onto eBook readers.

Further funding was sought from the Australian Government for the 'From Access to Success' project which will automate many of the features of Stand Alone Moodle in an attempt to make the projects more sustainable in the long term by minimising personnel costs involved in deploying the software. At the time of writing this article, the project team learned that they were successful in securing a large amount of funding from the Australian Government to expand the scope of the project to other correctional centres and for other USQ courses.

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