Taking eBook Readers to Prisons: A Tale of Two Projects

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Abstract. This paper reports on a project that was first introduced to World Conference on Mobile and Contextual Learning attendees in 2012, the PLEIADES project (Portable Learning Environments for Incarcerated Adult Distance Education Students) and discusses how this project evolved into two separate projects; one each from the two technologies originally trialled. PLEIADES introduced a version of an internet-independent version of the Learning Management System (LMS) called Stand Alone Moodle (SAM) and eBook readers to incarcerated students in a correctional centre in Southern Queensland. The Triple 'E' Project (Empowerment, E-Learning and E-Readers) using eBook readers similar to those trialled in the PLEIADES project, were rolled out to a further four correctional centres. This paper explores the issues and challenges involved with deploying eBook readers to incarcerated students through the PLEIADES and Triple 'E' projects.

Keywords: digital inclusion, distance learning, higher education, prisons, eBook readers, eReaders, mobile learning, design-based research.

1 Introduction

The use of mobile technologies has become increasingly essential in the delivery of distance education courses, largely in response to an emerging demand for flexibility in learning [1]. Unfortunately, this increasing reliance on 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(USQ's) Tertiary Preparation Program (TPP) in Semester 2 2012 claimed they did not have access to the internet (USQ, unpublished data).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 mobile devices for learning increases the risk of further excluding disadvantaged students without reliable access to the internet from higher education [2].

Correctional centres are highly reliant on the provision of distance education for offenders who wish to undertake higher education [3]. Higher education institutions that still provide course materials for students without internet access, including incarcerated students, often employ exceptions handling processes, using large volumes of printed copies of the course materials and learning support resources [4]. 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. With the emergence of

e-learning and mobile learning, distance education institutions are becoming increasingly reluctant to print course materials.

Researchers at the University of Southern Queensland (USQ) began to investigate the possibilities of providing electronic access to course materials using eBook readers. These eBook readers would contain all of the readings that a student would need to complete a course, allowing them to highlight text and take notes. This approach would preclude the necessity of printing course materials though the eBook readers would still need to be delivered to the appropriate correctional centre. The researchers began to plan a trial project in conjunction with Queensland Corrective Services and Serco Asia Pacific (private prison providers).

The PLEIADES (Portable Learning Environments for Incarcerated Distance Education Students) project 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 and are therefore excluded from accessing course materials electronically. In order to address this exclusion, 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, additional 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) to deploy eBook readers in five correctional centres. This paper reports on the issues, challenges and lessons learned from deploying eBook readers in correctional centres through the PLEIADES and Triple 'E' projects.

1.1   USQ's Tertiary Preparation Program

USQ delivers programs both face-to-face and via distance education, and has a high proportion of students from low socio-economic status (SES) backgrounds. USQ's Open Access College offers a Tertiary Preparation Program (TPP) which once successfully completed, guarantees entry to a USQ undergraduate degree. The only formal entry requirements to study the TPP program is that students need to be at least 18 years of age. 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. *TPP7120 Studying to Succeed* is a compulsory course in the TPP and students are required to obtain a passing grade in order to gain direct entry to an undergraduate program. These students usually require significant academic and social support to complete their courses successfully [5]. A significant number of incarcerated students from Queensland enroll in the TPP but with many having limited numeracy and literacy skills, this cohort often struggles. Though the TPP is designed to ready students for higher education, it is unlikely this aim can be

achieved when instruction is primarily delivered 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. The PLEIADES project, short for Portable Learning Environments for Incarcerated Adult Distance Education Students, was formulated to try and address this problem while reducing also reducing the costs associated with the supply of hard-copy materials.

2   The PLEIADES Project and Beyond

The PLEIADES project resulted from discussions between staff at the Southern Queensland Correctional Centre (SQCC), Queensland Corrective Services (QCS), the Australian Digital Futures Institute (ADFI) and the Open Access College (OAC), the latter two both at USQ. A portable version of USQ's LMS Moodle, called Stand Alone Moodle (SAM), was deployed in an attempt to replicate USQ's online learning environment for incarcerated students enrolled in the TPP. SAM had no capacity for internet connection in any form and was accessed by incarcerated students in either of SQCC's two computer labs which were serviced by a server. Because students typically only spend two hours a week in the computer lab, a second arm of the project facilitated learning by issuing these students with eBook readers loaded with course materials and relevant resources. The project was deployed in Semesters 2 and 3 2012. The initial aim was for seventeen students to participate in the project, but only seven proceeded as participants in the trial. Though SAM and eBook readers were successfully deployed, a number of factors made it extremely challenging to collect meaningful data. These challenges are summarised below:

- The correctional centre relocated from Borallon to another location some 60 kilometres away which resulted in the withdrawal of several key project team members. These people understandably elected not to move their families and could not continue working at the new site;
- High turnover in relevant correctional centre staff to try and cover a number of positions left vacant;
- Insufficient handover procedures in place in the correctional centre to ensure continued operation of the trial;
- Resulting in poor training of the students in the use of the new technologies; and
- Prejudice manifesting in many forms included delayed approvals and purchases.

The project team managed to work its way through these difficulties. There was an enormous amount of good will and belief in the project on the part of all team members and the students in the trial that ensured that the project proceeded. Though it was difficult to collect much meaningful data, the project did demonstrate that it was feasible that eBook readers and SAM could provide a reasonable simulation of an online study environment to help incarcerated students develop the necessary digital literacy skills to successfully complete a higher education program. On this basis, the project team successfully applied for an Australian Government Office for Learning and Teaching grant to further develop SAM. Though a large amount of funding was

secured, it was still insufficient to expand the roll out of the eBook readers to other correctional centres. The Open Access College, in consultation with the Australian Digital Futures Institute and Queensland Corrective Services, secured funding from another Australian Government funding scheme aimed at broadening participation in higher education (Higher Education Partnerships and Participation Program or HEPPP) to purchase some 200 eBook readers and chargers.

3   Emergence of the Triple 'E' Project

Though there were many difficulties encountered with deploying eBook readers during the PLEIADES Project, the project team felt strongly that this pilot demonstrated the feasibility of these technologies for use in this context. The Triple 'E' Project (Empowerment, E-Learning and E-Readers) deployed eBook readers at four additional correctional centres beyond the site of the original PLEIADES at SQCC. The correctional centres were chosen on the basis of the number of students enrolled in *TPP7120 Studying to Succeed* and strong relationships between TPP staff with the correctional centre education staff. The additional correctional centres were Brisbane Women's, Wolston, Woodford and Maryborough. These four centres are directly administered by QCS while SQCC is administered by Serco Asia-Pacific for QCS. A training and information session was conducted with the education officers from the relevant correctional centres. These officers were unanimously enthusiastic about the project and the prospect of having eBook readers for the students enrolled in *TPP7120 Studying to Succeed* in their own correctional centres. Though initially, some of the education officers expressed doubts that they were 'tech savvy' enough to use the eBook readers themselves, with some basic instruction they were soon using the devices confidently.

In addition, training sessions in the use of the eBook readers was delivered by an Open Access College tutor at the correctional centres themselves. Inmate tutors were also trained and could act as a 'go to' person should the incarcerated students experience difficulties with the eBook readers. These tutors were given a small amount of money by the correctional centres to fulfil this role. As one peer tutor explained: 'If it comes from prisoners to prisoners they are more likely to pay attention to it.'

The eBook readers needed to conform to QCS security requirements. These include having a non-removable battery, inability to access the internet and no SD card slot. In the PLEIADES trial, Sony PRS-300 eReaders were used which fulfilled these requirements. For the Triple 'E' project Book Pures were used as the Sonys were no longer available. Security clearance was obtained by incapacitating the SD card slot of the BeBook Pure by filling it with 'builder's bog', a timber repair filler.

3.1   The Education Officers

The education officers in the correctional centres generally oversee the provision of education to the incarcerated students. As incarcerated students don't have access to the internet, it falls to the education officers to download lecture materials,

assignment coversheets and conduct any internet research that students might need to complete assignments. These resources are downloaded and printed by the education officers. This forms a significant portion of an education officer's workload.

3.2   The Course Materials

The same course materials, but updated with appropriate dates, were used for the Triple 'E' Project as were used in the PLEIADES project. In the PLEIADES project, permission from academic publishers to load course readings onto the eReader was obtained by USQ's Learning and Resources Development Services department and took a period of four months. Course materials written by lecturers from the OAC were converted to ePub format. This format was chosen as it enables text to reflow on a screen. Text within PDFs is not able to reflow and therefore limits text size without the need for scrolling. The eBook readers were preloaded with all the course readings for the *TPP7120 Studying to Succeed* in ePub format prior to sending them to the correctional centres. The eBook readers were handed back to the education officers by the students about once per fortnight for charging and checking to ensure that the devices are not tampered with or damaged.

4   Evaluation

In total, there were 47 students using the eBook readers across five correctional centres (5 at Brisbane Women's, 16 at Wolston, 8 at the Southern Queensland, 8 at Woodford, and 10 at Maryborough).

The projects were 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 [6]. 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 [7]. A major strength of design-based research lies in its adaptability to adjust the intervention based on on-going findings from participants.

A range of data sources inform the development of the projects as well as inform the on-going evaluation of the project progress and areas of refinement required. Data sources include notes from project team members taken during meetings with stakeholders and during project planning activities, email communications between team members and stakeholders, focus groups conducted with students and education officers at correctional centres, and observations made by project team members during and after the launch of the PLEIADES pilot and during the subsequent deployment of the Triple 'E' Project.

5   Issues and Challenges

The PLEIADES project ran over two semesters in 2012, and the Triple 'E' Project ran in semester 1 2013 (from early March). There were some common problems between the two projects with the eBook readers.

5.1   Technical

In the Triple 'E' project, once the BeBook Pures were distributed to students, a number of issues were encountered. Some of the eBook readers had issues with frozen screens and had to be swapped for others. It seemed to be that this tendency was exacerbated when students did not wait for one action to complete before pressing buttons to elicit another. We believe the most likely cause is the large files sizes of some of the course materials and the limited processing power of the eBook readers. A related issue is that the eBooks can be slow to open. This is almost certainly related to file size. These problems were not previously encountered with the Sony eBook readers used in the PLEIADES project.

Another significant issue is that the standard font size of the text is sometimes too small for easy reading. The students have been shown how to increase the font size but sometimes the text does not reflow correctly making the text too difficult to read. This was also a problem encountered in the earlier PLEIADES project.

5.2   Issues at the Correctional Centres

Despite the security reports and memorandum from QCS head office, each centre General Manager had their own questions and concerns in regards to the eBook readers which unexpectedly further delayed the booking and delivering of training. Coupled with the fact that the first few assessments in *TPP7120 Studying to Succeed* are due in the first week meant that the tutor made the decision to release hard copies of study materials to ensure no incarcerated students were disadvantaged by this delay. This was an issue because often the correctional centres were quite distant from the Toowoomba campus and return visits by the OAC tutor could not be scheduled in a timely manner. Training sessions were sometimes interrupted by random drug searches with sniffer dogs. Unscheduled lockdowns impact on training sessions. A 'lock down' meant students could not come to class unless they were already in the building. Though these lockdowns meant that students missed out in training in some cases, in other situations, the eBook readers enabled students to study during these lockdown periods.

5.3   Student Concerns

During the initial trial in 2012, some students were very positive about the eBook readers. Even so, many students expressed a preference for hard copy materials. One student in the trial refused to use the eBook reader and handed it back to the education officer. A number of students have relayed that they enjoyed using the eBook readers for recreational reading, but for study they founnd it too difficult.

Some students have asked to use the eBook readers and have the hard copy of the materials as well. They are quite determined to find a way to use the eBook readers but find it too difficult with the eBook readers alone. Education officers concur, they have noted that students are very happy to have access to an electronic device and feel honoured to be part of the trial, yet they are also frustrated that they cannot view multiple books at once. Some prisoners are frustrated because they can only have one book open at once when they really need to be flicking backwards and forwards and between books. Another expressed frustration that windows could not be minimised to allow the quick switching between materials as on a computer. Because the Be-Book Pure is true to its name, it doesn't have any capacity for notes to be taken or text highlighted. The Sony eBook readers used in the PLEIADES pilot trial at SQCC did have the capacity for notes and highlighting text but many prisoners found them too complicated.

5.4   Digital Literacy of the Students

During the planning of the projects, it was expected that the digital literacies of students would be low. To overcome this, the project team ensured that the education officers were trained in the use of the technologies. These staff in turn, would train the students in the use of them. The prior levels of experience of the students with mobile devices was mixed, with some students (usually those who had been in prison for a shorter period of time) being more familiar with the technologies than others. The variability in digital literacies of students as well as staff, impacted extensively on the effectiveness of both projects. Students did not make effective use of the technologies as a result of lack of knowledge about how they worked and education officers were often not aware of the necessary features to assist students effectively in spite of training by team members. This variability in digital literacies was also evident in the Triple 'E' Project with students struggling to effectively use the eBook readers.

5.5   Copyright

Despite extensive assistance from USQ's copyright officer, copyright issues were a major hindrance to the success of the PLEIADES project and necessitated some redesign of the course for the Triple 'E' Project. Although most publishers permitted readings to be placed on the eBook readers in the original PDF format, few permitted the conversion to more usable formats such as ePub without large fees. Affordable copyright permissions could not be obtained for two of the articles and the education officer needed to provide these articles in hard copy.

The majority of the course materials were originally only available in PDF format. This format is difficult to read on eBook readers as the text is often small and zooming in only increases the size of the page. Users therefore need to scroll back and forth on the page to read each line of text. Where copyright permitted, documents were converted to ePub format to provide greater functionality and ease of use for students. The process to convert these documents was laborious and a number of technical challenges were experienced. Materials needed to be converted into Rich Text Format first and the software, Apple Pages, was used to convert to ePub. Styles often did not

apply consistently within the same documents and tables and images were not converted correctly during this process, requiring extensive reformatting of the documents. A number of the readings did not convert well when saved as rich text format from pdf documents. To overcome this, each reading had to be thoroughly checked, which was enormously time consuming. The aim was originally to combine all course readings into one document for each week, but the file size of these documents was too big for the software to cope with and individual files for each reading were created instead.

6   Conclusion

This paper has outlined many of the challenges faced and contingencies that had to planned for in the deployment of eBook readers across two projects: the PLEIADES Project and the Triple 'E' Project. In both cases these projects deployed eBook readers in correctional centres in Queensland, Australia for students enrolled in *TPP7120 Studying to Succeed*. Challenges could be broadly arranged into a number of groups: technical issues with the eBook readers, issues at the correctional centres, student concerns, digital literacy of the students and copyright concerns.

Of the seven students who participated in TPP7120 in the Southern Queensland Correctional Centre in semester 2 2012, two participated fully, one obtaining a High Distinction and one obtaining an A. Four students in total obtained a passing grade. Two did not participate in the course at all and received a fail grade and one withdrew from the course but re-enrolled for semester 3 and obtained an A. It is difficult to determine whether the participation trends were as a result of the changing technologies or because of the disruptions within the prison environment which were re-marked upon by the students in the post-semester 2 focus group in the PLEIADES Project. Though a very small cohort participated in that trial, the results are encouraging. Though many challenges were encountered, these could be overcome with careful planning and goodwill on the part of both correctional centre staff and USQ staff.

The Triple 'E' ran in Semester 1 of 2013 across five correctional centres. As with the PLEIADES Project, there were many unexpected obstacles in deploying the eBook readers across the centres. Most were out of control of the research team. In no case were the delays caused by ill will or were the result of a deliberate attempt to derail the project Special mention must be made of the students who have endeavoured to continue using the eBook readers even when they struggled to make them work.

Senior management at both the correctional centre and within USQ have acknowledged the importance of supporting further development and advancement of the projects. Although the security of the technologies was a primary consideration in the development of the project, no issues were encountered with the student's use of the technologies during the trial. It is anticipated that with certain modifications the eBook readers could provide a solution for other groups of students without access to reliable internet. These groups would include students from low SES backgrounds, Indigenous communities, rural, regional and remote communities and students in countries with poor ICT infrastructure.

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