

## Using Mobile Learning to Facilitate Early Engagement

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Mobile Learning is an emerging learning and teaching field and the strategies for conceptualising, designing, developing and evaluating the mobile learning experience are embryonic and evolving. This paper describes the process of development of a mobile learning experience for use on an iOS device with 'engagement' and 'learning' sitting at the core of the research, design and development of the project.

### Background

La Trobe University's attrition for 2009-2010 was 18.2% of its domestic commencing students.<sup>1</sup> Many studies have found that student engagement and a positive first year experience are crucial to student retention.

Reports from 1994-2009 have found that only around 50% of first year students feel like they belong to their university campus."(James, 2010) Pitkethy notes that "Studies of Australian first year students show that initial experiences on campus are important, and influence students' persistence in higher education." (Pitkethly, 2001) We know that students who are engaged, have a sense of belonging, know how to access university resources have a higher possibility of finishing their first year of study at University. (Horstmanshof, 2011).

An increase in student retention of 1% of the 37,000 students studying at La Trobe, at \$25,000 per student, translates into \$9,250,000, a significant source of university funding and crucial I would say to maintaining and resourcing further research and education programs.

La Trobe University's Melbourne campus is differentiated from most universities by the enormous space that it occupies and the expansive natural surroundings enclosed by a moat, created from the Darebin Creek. Puzzlehunt was developed as a Gamification concept to playfully orient new students to La Trobe's spaces, facilities and resources. A quote from an article written on the project states, "*La Trobe's Melbourne campus spans over 2000 hectares encompassing more than 40 buildings and can be a daunting experience to navigate for new students making Puzzlehunt an ideal activity.*"<sup>2</sup>

### Mobile Learning Experience

The mobile learning 'Puzzlehunt' idea was conceptualized at an Apple University Consortium (AUC) workshop in Brisbane. The App was adopted and developed within the Faculty of Humanities and Social Science, at La Trobe University as a mobile "O" week first year experience, designed to playfully familiarise students to key social, resource and learning spaces and to engage students early with peers and staff. Of the five faculties at La Trobe, the Faculty of Humanities and Social Science is the most curriculum diverse faculty, ranging from Shakespeare, Town Planning, Hindi to Photo Journalism.

The concept of a "Treasure Hunt" or "Great Race" as a University Orientation week activity is not an original concept. It was reported that one Victorian University paid \$30,000 to contract an external organisation to run an O week Treasure Hunt style of activity. For a similar level of funding the faculty of Humanities and Social Science developed a mobile learning App to facilitate a 'gamified'<sup>3</sup> student learning experience on an iPad which included a class set of iPads and the cost of developing the App. An additional cost benefit is games or learning experiences can be adapted for other purposes, for example "Future Students" have developed games aimed at providing year 7 & 8 students with a Puzzlehunt appropriate for their age. Also when new students are not using the iPads for Puzzlehunt, they can be utilized for other innovative learning within the faculty.

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<sup>1</sup> (Information retrieved 17th November 2011 <http://www.theaustralian.com.au/>)

<sup>2</sup> (information retrieved 20th February 2012 <http://www.latrobe.edu.au/news/articles/2012/article/students-develop-ipad-app>)

<sup>3</sup> (Information retrieved 18th October 2012 <http://en.wikipedia.org/wiki/Gamification>)

## Intended Learning Outcomes

The initiative introduces new students to the diversity of faculty subjects through a variety of activities designed to playfully familiarise students to key social, resource and learning spaces and to engage students early with peers and staff (with an element of learning built into each activity.) The intention is to give students a taste of the faculty and to familiarise them to key locations, which might assist them in their new environment (e.g. Careers Office, Library, Sports Centre, First year coordinator.) Games can also be customised to assist students to initiate peer and academic relationships early in the university year.

The underlying objectives of the project were to;

- Engage students with their environment
- Encourage peer relationships
- Get to know University environment
- Develop sense of belonging
- Promote staff/student relationships
- Provide a playful experience

## The Game

The Puzzlehunt project has the formative goal in playing a part in building student engagement. The project provides new students with a mobile learning experience, combining smart phone technology with a live scavenger hunt with a learning objective built into each activity.

The game starts with new students receiving a ticket to “Puzzlehunt”. The ticket has a QR code and instructions on how to scan it. The QR code invokes a short introductory movie taking the student into the Puzzlehunt space.

During “O” week, students take their ticket to a central meeting place, where they are lent an iPad loaded with the game and a drop-proof case. The game provides students with choice therefore directing them to varied places of interest at the university. The aim is for participants to work together and unlock clues, undertake challenges and solve puzzles. The activities are designed to use teamwork and creative thinking skills in a fun and collaborative way, while also orienting students to the university. An activity example directs the student to find a QR code near the statue of Charles La Trobe standing on his head. When players arrive they are asked a question through the App which relates to the statue. They are asked to photograph themselves with the statue with extra points for standing on your head.

## Development

Why develop an iPad App? In 2010, the iPad's first year of release, Apple enjoyed a market share of 90 per cent in Australia. This has since declined to a not insignificant 75 per cent market share.<sup>4</sup>

To strengthen the student engagement theme Faculty of Humanities and Social Science initiated a cross-faculty App development collaboration with the Faculty of Science Technology and Engineering's Computer Software staff. Student teams were formed to develop three prototypes as part of a 3<sup>rd</sup> year Computer Science subject. The winning project was externally mentored with an iOS Developer to polish and test the App to get it ready for the 2012 “O” week trial. As the product was a real world project intended for download from the iTunes App Store the student developers took their roles very seriously and produced a high quality user tested product.

Associate Professor Dr Kay Souter said of the project *'This has been an impressive collective involvement and it has been rewarding to see the project go from an idea to a realisation. The students who developed the app have gained practical skills and the app will be a useful tool to help incoming students get acquainted with their new learning environment while socialising with fellow students,'*

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<sup>4</sup> (Retrieved October 17 2012 <http://www.theage.com.au/digital-life/tablets/why-apple-is-making-an-ipad-mini-20121017-27r4z.html#ixzz29h2d0dDC>)

## Evaluation

Bateman (2010) states "When this research project began in 2006, neither the iPhone or low cost 3G netbooks existed, the iTunes Store was unavailable in New Zealand, wireless connectivity speeds were limited to first generation 3G (UMTS or CDMA) with limited coverage available, and Wi-Fi was limited to 54 Mb/s..." As the technology evolves so must the methods of evaluating mobile technology.

Mobile learning poses complex challenges when it comes to evaluating the student learning experience. Two issues arise: The experience of the learner occurs at different points in time and at different places. Secondly, the nature of mobile learning ensures the student is moving. This poses the challenge of capturing data for evaluation from a moving student at different times and places.

There are three areas to focus on regarding evaluation. They are usability of the application, effectiveness of the user experience and user satisfaction. Usability testing in a laboratory such as heuristic evaluation (Nielsen, 1994) is well established. Satisfaction levels may be established through surveys such as a Likert scale or by conducting interviews with students. Effectiveness of mobile learning is relative to the context and educational aims of the program being evaluated (Sharples, 2009).

Further to this, any form of evaluation undertaken by a user after a learning experience has occurred, needs to be executed in an innocuous way to reduce the possibility of evaluation interfering with the user experience. Ideally the evaluation occurs within the application and the experience is not dissimilar from the other elements contained in the game.

Within the limited timeframe of the project an evaluation, which fits the above criteria proved difficult to implement within the timeframe. However an opt-in online survey was incorporated into the App so when the game was finished players could, provide feedback. Only a very low percentage of participants opted in to complete the survey. This provided valuable feedback for us in the development of an evaluation strategy for Puzzlehunt Version 2 which includes more innocuous response feedback in a fun interactive way.

Every player's experience is different from that of all other participants, therefore to establish a clearer and more accurate feedback, a mechanism to establish a contextual link between the user interactions and the learning experience needs to occur. This objective would be to provide relational data for better analysis of that data and a more accurate evaluation of the user experience against the learning outcomes associated with that experience.

## Summary

There are significant learning opportunities which arise from the advances provided within mobile technologies. Puzzlehunt is an example of an iOS App, developed with an intended learning experience to playfully orient new students during "O" week to the university. The student designed and developed project is an example of a highly engaged student learning experience.

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