ANU Campus Quest: A Mobile App For Transition

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This paper outlines a new mobile application designed to assist student transition at the Australian National University (ANU). It briefly outlines the importance of addressing student transition in the current higher education climate, and explains why the ANU has decided to move into the mobile space in order to assist student transition to the geographical, social and institutional context of the university. The app is designed as an information-based scavenger hunt, informed by research into the social and learning utility of games. Students need to work in teams to devise strategies to approach the game, assisting them to make social connections, while the game itself takes students across campus to discover spaces and university cultures.

Keywords: transition, gamification, mobile apps

Introduction

Transition to university is a significant issue for higher education institutions, emphasised by the increasing social, cultural and academic diversity present in the incoming student cohorts. This diversity is likely to increase following the release of the Bradley report which recommended widening participation to increasingly include non-traditional students from low socio-economic backgrounds, equity groups and mature age students (Bradley, Noonan, Nugent & Scales, 2008). Not surprisingly, these students exhibit diversity in terms of existing academic knowledge and are managing a variety of work/life balances. To accommodate these differences, universities have responded by offering more flexible study patterns such as different times of entry (mid year etc), different modes of study (distance, face to face, online etc) and part time study. All this increases the challenges in managing successful student transition to university (Johnston, 2010; Kift, 2009).

This paper outlines the rationale for and design aspects of a new mobile application (app) designed to assist student transition at the ANU. It focuses on the decision to utilise the mobile space, explains why the app is designed as a game, and outlines the key features of the app including the need for students to work in teams, form strategies and physically engage with the campus itself.

The need to address student transition

Holistic approaches to transition are needed that recognise a wide range of transition issues including cultural and community, academic, social and personal elements (Johnston, 2010). These approaches, dubbed as third generational approaches (Kift, 2009), are essential as the more socially and academically engaged the students the greater their persistence (Tinto, 2009). Establishing firm social networks is a crucial aspect in student retention (Christensen & Evamy, 2011) with Willcox, Winn and Fyvie-Gauld (2005) finding in their small study that the lack of friends was a significant factor in student withdrawals. One focus of transition is the first few weeks of a new student's university life as it can involve great emotional and social upheaval. Students "have an urgent need to belong, to identify with others, to find a safe place and to negotiate their new identities as university students" (Willcox *et al.,* 2005). Making initial contacts with others is important in helping students adapt to university life. Transition activities need to provide opportunities for students to do this as well as orienting them to campus and academic life.

ANU is developing a more holistic approach to transition. One of the initiatives that forms part of this wider program is a mobile application for Orientation week that aims to start students on their journey to engage with the university. Specifically the app aims to:
- geographically orient students to the campus
- encourage students to socially connect with their peers
- introduce students to the institutional structure.

Why a mobile app for transition?

Smartphones are becoming ubiquitous. Already, Johnson, Smith, Willis, Levine, & Haywood. (2011 p.13) estimates that "virtually 100% of university students worldwide have mobiles". Increasingly these phones are smart devices capable of connecting to the Internet, and 62% of smartphone users downloaded an app in the last 30 days (Neilsen, 2011). This uptake of smart mobile devices is predicted to continue with 80% of access to the Internet by 2015 to be via mobile devices (Ericsson as cited in Johnson *et al.,* 2011). This strongly suggests that smartphones are a medium that will become increasingly important in the tertiary education environment.

However, despite these figures, the impact of mobile devices and other Web 2.0 tools on university learning is open to question. Some such as Prensky (2001) and Brown (2002) coined the term digital natives to describe the generation brought up with the Internet, and contend that this group learns in fundamentally different ways to older generations. To engage this cohort, they argued new approaches to learning were essential. Increasingly this is being challenged as the wide diversity in IT skills and associated learning approaches among university students is recognised (Kennedy, Judd, Churchward, Gray & Krause, 2008; Lorenzo, Oblinger & Dziuban. 2006). Notwithstanding these differences, technology use is escalating and students increasingly have expectations of "access, convenience and connectedness" (Kennedy et al. 2008, p.118). In this increasingly connected world, both the university and students need to become competent and engaged users of the technology.

In this context, creating a mobile app for transition was a logical choice. Mobile apps are popular and this was one way of seeking student involvement at a time when a lot of things are competing for their attention. It was also an authentic use of the technology that fitted well with encouraging greater use of appropriate technology in the university context. Smartphones offer portability, location detection (knowing where they are) and image capture (Johnson *et al.,* 2011), all necessary features for the orientation app. Finally, while not all students would have smartphones, the use of teams in the orientation activity would ensure all students could participate.

Why make the app a game?

Our orientation activity needed to encourage social interaction and engagement with the university; it needed to do more than provide information. To this end, the app incorporates a game-based approach as this is capable of both encouraging social interaction and facilitating engagement.

Social interaction and cooperation with other players are powerful attractions of a game. This is reflected in social games such as *Farmville* or *World of Warcraft* where competition is still often an important element of a game but not the overriding reason to participate. In team games, more players are motivated to participate than if they are only competing for themselves (Zicherman & Cunningham, 2011). If students are motivated to work together to achieve team goals they are conceivably more likely to engage interpersonally with their team members and to begin the process of social transition to the university.

Similarly, games can be a powerful tool to increase a person's engagement in tasks that might not have interested them. Kapp (2012) gives the example of a subway station where the exit stairway was changed so each step played a musical note when stepped on by a commuter. As a result, the use of stairways over the escalator increased by 66%. Fun, an essential element of games, not health concerns made commuters engage and change their behaviour. In the transition context, many students attend the campus during orientation week but anecdotal evidence suggests they often do not wander far from the commercial hub of the campus, or get a feel for the campus as a whole. Reasons for this include the lack of motivation to do so, or the fact that such exploration may not be as exciting as other socially-based orientation activities. On a campus such as the ANU which is geographically large, it is important that students begin to find ways of coming to terms with and navigating this vast physical space. This is encouraged by giving students a fun and social reason to start exploring the campus.

The ANU Campus Quest app

The Campus Quest app is designed as an information-based scavenger hunt to be undertaken during Orientation Week. Students will be organised into teams to complete a number of activities. Activities fall into 3 broad categories: multiple-choice questions, alphanumeric questions requiring the entry of a correct response, and image questions that require students to use their phones to take a photo of a particular thing, the GPS coordinates of the image then being verified with the coordinate range of the correct location (see Figure 1). The points awarded for an activity depend on its difficulty. At the start of the hunt, teams will be given some time

and campus maps (print or electronic) to plan and strategise. Through the app, activities can be assigned to members. Teams then break up and spread across campus to answer activities. Team progress can be seen throughout the hunt. Activities are not marked until the end, to give students an opportunity to discuss and alter their responses throughout the challenge. To avoid last minute guessing of multiple choice questions, points will be deducted for incorrect answers. At the completion of the quest, the team with the most points will be announced the winners and awarded a real-world prize.
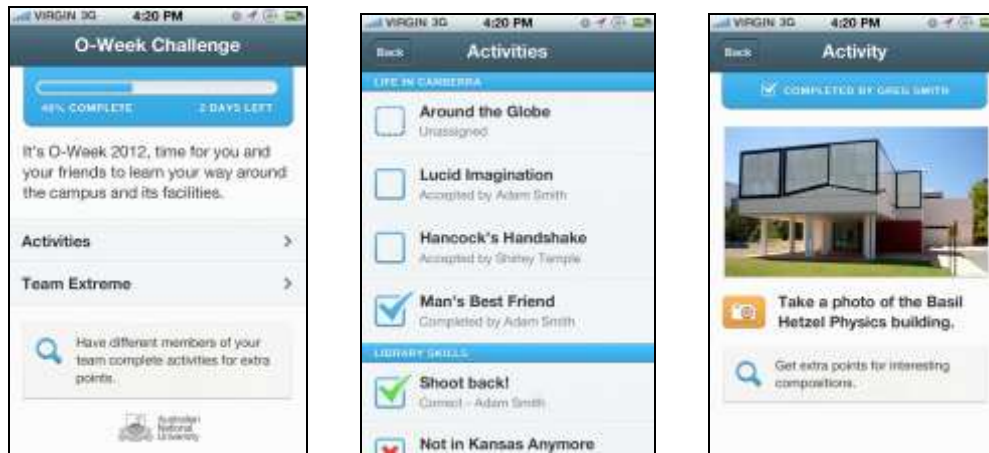
Figure 1: Three screen shots showing the screen for Team Extreme, the list of activities, and an activity. The list of activities shows who has been assigned an activity and if it has been answered.

The app has been designed to meet three aims: to encourage students to socially connect with their peers, geographically orient students to the campus and introduce students to the institutional structure. To encourage social interaction, the game requires significant collaboration between team members. Students register as individuals and then will be broken into teams so they will have the opportunity to meet new people. The app allows for the number of people per team to be greater than the number of phones; for example a team of 10 students will only be allowed a maximum of 5 phones. Thus, students will have to work in small groups to go around campus to complete the activities and will also have to coordinate and form strategies with other team members to allocate tasks. Extra points will be awarded to the teams that spread the tasks most evenly amongst themselves. This will be measured by how many activities each 'phone' completes and the spread of completion across the team.

Each activity is designed to help students orient themselves to the physical environment or institutional context of the university. For example, students may be given a photo of a small part of a building and asked to identify it, or be asked to obtain a key piece of information from the plaque of one of the many statues around campus. Other activities focus on places to eat and exercise, and may ask students to obtain prices of coffee or gym membership. Still other activities focus on how the university works, and ask questions about, for example, the college structure or university motto which can be obtained by navigating the university's website - familiarising students with this important resource.

To succeed in its aims, the scavenger hunt must be fun. Game designers aim to get players into a state of flow or 'in the zone' (Zicherman & Cunningham, 2011). Flow is a state between anxiety, where the task is too difficult and stressful, and boredom where the task is repetitive and unengaging. When designing activities for the game it was therefore important for us to consider the fact that activities that could conceivably meet the transition goals (for example asking questions about course rules and university regulations) may not necessarily enhance student engagement with the game. Additionally, the activities need to be challenging but doable and not repetitive if we want to maintain engagement, hence we needed a range of challenges from easy to difficult. Rewards help to keep players in a state of flow. Surprisingly, rewards that are not predictable in their occurrence or size are often the most effective (Zicherman & Cunningham, 2011). We have tried to build in some unpredictability of rewards with hard challenges where there is no certainty of success.

Similarly, a recognition that not all students are sophisticated users of technology means that the app only requires them to employ the basic functions of their phones. Thus tools such as Foursquare (https://foursquare.com/), that require downloads or even tools such as QR codes (http://www.denso-wave.com/qrcode/index-e.html) that require a more sophisticated use of technology were avoided. However, this may change in later iterations. The app is capable of working on both Apple iPhones and Android phones.

Finally, the app was designed for both large numbers and flexibility. To facilitate large numbers, all activities are machine verifiable. Thus winners are available as soon as the quest is over. Later iterations may include new types of activities that may require human verification, such as the taking of photos of 'favourite' or 'quirky' locations on campus. Flexibility is incorporated by not limiting the number of activities, size of teams, length of quests, or content of activities. It is hoped that this will eventually allow the app to be used for a wide range of situations and groups.

The app will be piloted during July 2012 before being rolled out for O week 2013. Pilots are planned both with a group of postgraduate students involved in a mid-year intensive program and with new undergraduate students as part of the orientation activities for Semester Two. The pilot sessions will give teams twenty minutes to work out their strategies before having a two hour quest window. Feedback on aspects of useability and experience will be gathered from the pilots.

For orientation 2013, the quest will be open to all new students. We plan to run quests tailored to individual academic areas. This will not only allow students to meet new people studying similar courses but allow us to tailor activities more appropriately (e.g. send law students to law locations etc). Depending on the feedback from the pilot, we may also look at running different length quests or themed quests, e.g. history of the campus.

Conclusion

Though this app is still in the pilot stage it is envisaged that a game-based design that encourages social interaction and campus exploration while assisting students to learn more about the university itself and its culture will assist students to begin their transition process at the ANU. It may not suit all students, nor is it by itself the solution to transition issues. Rather it needs to be one part of an integrated package.

While this app has been designed with O week in mind, it has the potential to be used much more widely. It is suitable for many groups new to the university, e.g. school groups, short courses etc. Similarly the generic nature of the activities may allow the quests to be expanded beyond orientation to more academic content.

References

Bradley, D., Noonan, P., Nugent, H. & Scales, B. (2008). *Review of Australian Higher Education: Final report*. Canberra: Department of Education, Employment and Workplace Relations.

Brown, J. (2002). Growing up digital: How the web changes work, education, and the ways people learn. *United States Distance Learning Association Journal,* 16(2), 15-27.

Christensen, L. & Evamy, S. (2011). MAPs to success: Improving the first year experience of alternative entry mature age students. *The International Journal of the First Year in Higher Education*, 2(2), 35-48.

Johnston, B. (2010). *The First year at university: Teaching students in transition*. Maidenhead, England: Open University Press.

Johnson, L., Smith, R., Willis, H., Levine, A. & Haywood, K., (2011). *The 2011 Horizon Report*. Austin, Texas: The New Media Consortium.

Kapp, K. (2012). *The gamification of learning and instruction*. San Francisco: Pfeiffer.

Kennedy, G., Judd, T., Churchward, A., Gray, K. & Krause, K. (2008). First year students' experiences with technology: Are they really digital natives? *Australasian Journal of Educational Technology*, 24(1), 108-122.

Kift, S. (2009). *Articulating a transition pedagogy to scaffold and to enhance the first year student learning experience in Australian higher education*. Australian Learning and Teaching Council. www.olt.gov.au/resources/

Lorenzo, G., Oblinger, D. & Dziuban, C. (2007). How choice, co-creation, and culture are changing what it means to be net savvy. *EDUCAUSE Quarterly*, 30(1), 6-12.

McInnis, C. (2003). From marginal to mainstream strategies: Responding to student diversity in Australian universities. *European Journal of Education.* 38(4), 387-400.

Nielsen, J. (2011). M*obile media report: State of the media Q3, 2011.* http://www.nielsen.com

Prensky, M. (2001). D*igital natives, digital immigrants. On the Horizon*, 9(5), 1-6.

Tinto, V. (2009). Taking student retention seriously: Rethinking the first year of university. *Keynote presented at FYE Curriculum Design Symposium*, Brisbane. http://www.fyecd2009.qut.edu.au

Willcox, P., Winn, S. & Fyvie-Gauld, M. (2005). "It was nothing to do with the university it was the people": The role of social support in the first year experience of higher education. *Studies in Higher Education,* 30(6), 707-722.

Zicherman, G. & Cunningham, C. (2011). *Gamification by design.* Canada: O'Reilly Media Inc.

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