Exploring the unknown: Designing a serious game for tertiary education from scratch, a case study

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Serious games offer educators the opportunity to enhance student motivation and engagement, setting the stage for authentic and productive learning (Coates, 2005). Anecdotal evidence suggests barriers to adoption of serious games in education include perceptions of the need for technological expertise and high costs of development. The author created a serious game to assist post graduate professional psychology students to manage the transition from theoretical knowledge to professional practice. This demanding stage of development is key to graduate competence, perceptions of self-efficacy and employability (Fitzpatrick, Drapeau, & Chamodraka, 2007; & Skovholt & Ronnestad, 2003). During this developmental stage, serious games provide an opportunity for safe and engaging learning opportunities. This case study provides insight into the theory and principles to be considered when developing a serious game.

Keywords: Serious games in Tertiary education, Innovation and design, professional skills training, serious games development, serious games design

Background

The education of healthcare professionals is critical for the safe delivery of services to patients (Ricciardi & de Paolis, 2014). Post graduate psychology students undertaking a professional degree encounter a steep learning curve when transitioning from theoretical knowledge to professional practice. The beginning student stage of development is fraught with anxiety and high stress levels with implications for both student and client wellbeing (Skovholt & Ronnestad, 2003). Successful navigation of this phase is critical to psychology graduate competence and employability, with potentially lasting consequences for psychologists’ perceptions of self-efficacy (De Stefano, et. Al., 2007; & Skovholt & Ronnestad, 2003). Serious games can provide an opportunity for safe practice opportunities in an engaging and entertaining manner. Serious games can be defined as games which have a primary purpose of educating and training players, whilst entertaining them at the same time (Stokes, 2005). Within the field of health, serious games have been identified as providing an additional means of encouraging interest in training, education and assessment of performance (Wattanasoontorn, Boada, Garcia, & Sbert, 2013). The author developed a suite of serious games, named Laurus, with the intention of providing students with increased and more convenient opportunities to practice psychological competencies. The process of conceptualising, designing, developing and implementing a serious game for education is explored and solutions for overcoming perceived barriers are highlighted.

Aim

To create a serious game for the training of professional psychological competencies in postgraduate training of psychologists.

Theoretical underpinnings

The author sought to develop a serious game with a minimal budget. An inter institutional and inter professional collaborative approach was used. The author collaborated with several final year Game Design students at SAE Institute, Brisbane. The students were provided with the opportunity of undertaking their final year project with a real world client and the game was developed out of this mutually beneficial relationship.
Development of the game was underpinned by the theoretical framework of Experiential Learning Theory (ELT) (Kolb, 1984). ELT highlights the central role of experience in the process of learning. Serious games create a vehicle for such experiences. In terms of the process and content involved in development, a combination of a programmatic and participatory framework were used in the creation of Laurus (Russ, 2010). The expert (programmatic) content of the case scenarios created were based on the psychological competencies, guidelines and policies for practice established by the Australian Psychological Accreditation Council (APAC), the Psychology Board of Australia (PsyBA) and The Australian Psychological Society (APS). The purpose of such an approach is to communicate specific knowledge in a top down manner, in order to generate a desired outcome. In this context, the desired outcome is one of competent and qualified practitioners (Russ, 2010).

A participatory approach was also used in order to ensure that the Laurus games were relevant and useful to the end users and stakeholders. This approach engages stakeholders to generate and incorporate their knowledge and ideas into the final product (Russ, 2010). A focus group was conducted with students at the beginning of the development process to seek to understand the needs of the students from their own perspective. Three user testing sessions were held over the course of development, to obtain insight into how students interacted with the games. This use of the collective intelligence of students, academic and professional staff helped to define what their needs were and what would best support the users (Clochesy, Buchner, Hickman, Pinto, & Znamenak, 2015).

A number of design elements were considered when creating Laurus (Brox, Fernandez-Luque, & Tollefsen, 2011; & Lewis, 2007). These elements are the foundation upon which the user experience is built and in which learning occurs (Caine, Caine, McClintic, & Klimmek, 2009; & Skalski & Whitbred, 2010).

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<tr>
<th>Table 1: Design considerations for Laurus</th>
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<td><strong>Element</strong></td>
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<tr>
<td>Experience</td>
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<td>Facilitate engagement and immersion</td>
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<td>Feedback and reward mechanisms</td>
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<td>Levels of play</td>
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<td>Evaluation</td>
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<td>User interface</td>
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References


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