

Generation Z, no more holding down the (E) button to complete a task:

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ABSTRACT

A 3D game environment for networking services is being developed in a collaboration between staff at two polytechnic institutes. 3D game environments have been presented as a medium for learners over a number of years. The familiarity of these environments creates a pathway for these learners, where they can practice activities realistically rendered and real time interactive environments. Along with getting a higher score than mates, working in teams, and/or competing against the “other teams”, this motivates the design of such an environment for study topics in Networking Services courses. Once implemented, these systems also provide immediate sharing of course material across institutions. In this poster we use a current Networking Services lesson to determine characteristics that lead to design requirements. These are identified for this case and compared with a lesson as presented through a 3D game environment.

Categories and Subject Descriptors

K.3.1 [Computers and Education]: Computer Uses in Education

Keywords

Generation Z, 3D Gaming

1. INTRODUCTION

The collaborative development of a 3D game environment for networking services courses is being undertaken between staff in vocationally centred certificate courses in order to develop engagement of students in the courses. Students attending our courses range from school leavers to people moving into the networking area in their late 50s. While most participants have 5 years of secondary school, most have not achieved high grades in academic courses. We have found development of diagnostic and higher analytical skills for learners is low. Our courses often revert to “tick box” or formulaic education, in order to gain a level of success in the participants. When we introduce higher level analysis we find student engagement drops considerably. Our proposal is to encourage and develop engagement in networking classes by using a video game environment as a means encouraging the learners. Several authors report that when games

The collaborating staff are currently in the process of development the 3D educational game, with the intention to implement the game in a specific Networking Infrastructure course over the following year. The data and outputs from the results will be collected and analysed. The data can then be compared against previous year’s outputs. This will allow us to measure the any positive or negative changes from the implementation of the game.

2. EXISTING ACHIEVEMENTS

Reviews of successful learners using these environments in the past has been mixed. A study conducted using IBM’s Robocode. Robocode is an easy-to-use robotics battle simulator that runs across all platforms supporting Java 2. A survey was presented to the Robocode community which addressed five questions. One of these questions asks if the participant’s programming skills and knowledge improved after playing the game. Long, Ju (2007) found, there were 500 surveys sent out and the result was that 80% of the participants’ programming skills increased after playing Robocode. Another discovery from the survey was that Robocode was entertaining not only to the younger participants but also to older and often more experienced participants.

Cole, H., & Griffiths, M.D. (2007) states one of the myths surrounding computer game playing is that the games appeal only to children and adolescents. This is a common misconception. The mean age of MMORPG players in their study was 23.6 years, and 28.2% of players were over 25 years. Only one fifth of players (20.6%) were under 18. Plain and simple adults play games.

Schools are already adopting the idea of using games to educate their students through their courses. A school in New York, Quest To Lean, is now the first game-based school in the world. It has been up and running over since 2009.

GENERATION Z

ABSTRACT
A 3D game environment for networking services is being developed as a collaborative development between staff at two polytechnic institutes. 3D game environments have been presented as a medium for learners over a number of years. The familiarity of these environments creates a pathway for these learners, where they can practice activities realistically rendered and real time interactive environments. Along with getting a higher score than mates, working in teams, and/or competing against the “other teams”, this motivates the design of such an environment for study topics in Networking Services courses. Once implemented, these systems also provide immediate sharing of course material across institutions. In this poster we use a current Networking Services lesson to determine characteristics that lead to design requirements. These are identified for this case and compared with a lesson as presented through a 3D game environment.

Background and Method
The collaborative development of a 3D game environment for networking services courses is being undertaken between staff at two polytechnic institutes. 3D game environments have been presented as a medium for learners over a number of years. The familiarity of these environments creates a pathway for these learners, where they can practice activities realistically rendered and real time interactive environments. Along with getting a higher score than mates, working in teams, and/or competing against the “other teams”, this motivates the design of such an environment for study topics in Networking Services courses. Once implemented, these systems also provide immediate sharing of course material across institutions. In this poster we use a current Networking Services lesson to determine characteristics that lead to design requirements. These are identified for this case and compared with a lesson as presented through a 3D game environment.

Conclusion
Video games can be an asset used to enhance education. This research is being conducted to explore the possibilities and benefits of games being incorporated into education. The goal and outcome of this research are being used to develop games that can be applied in an educational environment to enhance the student's educational experience. This will be an educational tool in the form of a 3D game environment which will allow the students to have their practical skills and theories in a virtual environment. The game will then be used to teach and enhance students' networking knowledge.

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3. DISCUSSION

Our approach is to identify motivating factors in using these environments. Along with getting a higher score than mates, working in teams, and or competing against the “other teams”, motivates the design of such an environment for study topics in Networking Services courses. Our goal is to motivate students or players to learn by playing games. Therefore understanding who plays and why is critically important. According to (Jeannie Novak, 2012) there are few factors that motivate players to keep on playing which are Social Interaction, Competition, Knowledge, Mastery and Addiction. Players are more motivated to play the game by interacting socially with their opponents or team members. Some players enjoy the thrill of competing with other players, they enjoy winning all the time. One key factor is Knowledge, some players can be motivated to gain knowledge of particular concepts, processes, and strategies by playing game. Another key factor is Mastery, some players are motivated to master the game itself. These players enjoy nominating the game world and being the top players, in our case they will all be networking experts. Some players are motivated by Addiction. Players can take active roles in a game unlike reading and watching video which means they can make decisions and get feedback in this game learning environment.

4. FINDINGS

Scientists and Educators repeatedly state that the benefit of educational games is that games tend to generate a much higher level of students. This is due to the encouraging emotional engagement, therefore making the educational experience more motivating and appealing (Rieber et al., 1998), improving the students’ participation and their achievements Jayakanthan, (2002). When you play a video game you are motivated to learn because it is challenging, sparks interest, beauty, fantasy, social recognition, and FUN! Games reach even the passive student who doesn’t do well on a conventional atmosphere (Tanner & Jones, 2000; Dede, 2004). Video games give us the feeling of “flow” which is a state of optimal experience, whereby a person is so involved in an activity that self-consciousness evaporates, time becomes distorted and people engage in complex, goal-directed activity not for external rewards but simply for the exhilaration of doing” (Squire, 3). The idea of playing a game in preparation for an upcoming assessment is much more appealing than staring at flashcards for hours on end.

Games simulate reality and thus help people understand variables, causes and effects that impact decisions in the real world. This is far from a new concept. There is a book called “Serious Gaming” which was written back in 1970. The book details these proven theories.

Educational games, occasionally stated as serious games embrace the power of video games to charm, engross, unite and teach players critical content according to (Clark, 1970).

The advantage of video games is that students actually learn better according to (Annetta, 3). Video games provide the opportunity to learn by doing. Virtual worlds give you the benefit of experiencing situations first hand. Though it is a virtual experience it is no less beneficial for the learning process. Years of our youth is spent learning through the process of playing, there is no reason to believe that it wouldn’t work with mature children or adults. We don’t stop playing because we grow old, we grow old because we stop playing~ Oliver Wendell Holmes.

5. CONCLUSION

Video games can be an asset used to enhance education. This research is being conducted to explore the possibilities and benefits of games being incorporated into education. The goals and outcomes of this research are being used to develop a game that can be applied in an educational institution to enhance the student’s educational experience. This will be an educational tool in the form of a Multiplayer Game, which will allow the students to hone their practical skills and theories in a virtual environment. The game will then be used to teach and enhance students studying Network Infrastructure.

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