Perceived Satisfaction Levels and Student Learning Performance towards Second Life Virtual Environment for Learning the Islamic Concepts

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Abstract: In recent years, the growth of online virtual environment technology such as Second Life (SL) environments has been fueled by the development of the internet and fresh initialization of information technology that changed the aspects of education. Perceive the satisfaction levels and student learning performance towards using these environments has considered as major challenges that commonly differentiate from one learning institution to another. This paper investigated the phenomenon of students in Second Life a virtual world for learning the Islamic concepts. Furthermore, this paper perceived the student satisfaction levels and performance from the utilization of the SL among Saudi students for learning the Islamic concepts.

Key words: Second Life, Learning Virtual Environment

INTRODUCTION

Second Life environments designed by 3D animation are an animated object that appears in a three-dimensional space. They can be rotated and moved like real objects. These objects use in presentation graphics to add flair to the visuals (Cheong, 2010). Recently, the progress of developing knowledge based technology has particularly appeared in the domain of Information Technology (IT) and Information and Communication Technology (ICT) fields. The utilization of computer technology such as SL has presented itself to the end-users life, and it has been an essential and intimate part of those users. This pervasiveness can be evidently noticed even in learning that commonly build based on definite instructional strategies. Consistent with enhancements of graphical patterns, the phenomenon of SL has captured new ways to the learners to learn independently that day by day are offered more pleasant, with much better characteristics (Bowers, Ragas, & Neely, 2009; Salmon, 2009).

Many researchers and scientists investigating and approving the effects of SL environment in teaching and learning the different concept that evolves the adaptation of various learning aspects (Schmeil & Eppler, 2008). An example of those researchers Bowers, Ragas and Neely (2009) assess the value of Second Life among post-secondary instructors with experience. They applied Everett Rogers’s diffusion of innovations theory that involves three main categories divided into innovators, early adopters and the early majority.

Constantly, the traditional learning environment in Saudi Arabia is based on face-to-face courses that takes place as a main and usual way for learning, which characteristically happens in a teacher-directed environment with live interpersonal interaction, without taking in considerations the utilization of intensively technology, that has some serious restraints such as the limited one-to-one teacher-student interaction, the delayed feedback that is given to the students and the drawbacks in visual supports and materials that the instructor can use in the class session (Wong, 2006). On the other hand, the blended learning such as e-learning environments that have grown and expanded dramatically has created new paths for communication, interaction and multimedia input. According to Wu, Tennyson, Hsia, and Liao (2008), e-learning suffers from a lack of social interaction between learners and instructors, although it may increase access flexibility for students and educators. In the search for another instructional delivery solution in order to relieve the above problems the term SL (Wu, Tennyson, Hsia, & Liao, 2008). Other researchers indicate the effectiveness and usefulness of using SL in teaching and learning that obtained interaction and satisfaction toward learning (Jarmon, Traphagan, Mayrath, & Trivedi, 2009). SL goes beyond barriers of time and location and has created many enhanced opportunities for learners and instructors. Researchers have reported that students who participate in SL environments exhibit better learning outcomes compared to traditional teaching (Seng & Edirisinghe, 2007).

Furthermore, students' satisfaction has been addressed to be a very important component for the successful completion of the learning courses in different environments (Co-operation, 2005). While a number of advantages have been recognized in employing blended learning, insufficient learning satisfaction appeared to be an obstacle to the successful adoption of blended courses. Moreover, students' satisfaction and learning performance play an important role in evaluating the effectiveness of the educational process in a blended learning environment (Childress & Braswell, 2006; Huang, Backman, & Backman, 2010).

There is one way of exploring the future is to examine and build upon known visible trends. We can use aspects of multiple disciplines to identify strong forces and work out how to exploit them. This is best done over
a period. The study learning course was designed and developed based on the view of the King Abdullah University of Science and Technology in Saudi Arabia for the purpose of this study. The online component was delivered using the online environment to create active learning opportunities for students that helped them engage with challenging concepts and provide self-assessment and self-reflection opportunities.

During the design preparation, we have found that one of the considerations in constructing SL artifacts for use in learning the Islamic concepts is between creating accessible learning imitations and creating fantasy environments. Correspondingly, a number of end-users spend long time and efforts to represent their avatars. While others are intrigued by the possibility to ‘become’ something definitely different.

**Building Steps:**

The overarching goal is for the students to be able to use SL as an architectural design, collaboration and presentation tool to learn the Islamic concepts as offered by all the Saudi learning institutions. To get this done, the first step was to get the students started with the basics. Students were given the opportunity to demonstrate their ability to learn about the provided courses using all of the SL tools for moving, browsing, etc.

The bulling steps include the definition of SL implications and its additional patterns as shown in Figure 1, applying tools as shown in Figure 2, and also the development SL objects for the creation of effective experiences for virtual environments as shown in Figure 3. We design a SL environment based on the pattern paradigm for interaction scripts that aim at facilitating on the one side knowledge sharing and knowledge integration in groups, and on the other side knowledge creation in formal and informal ways. Than the final representation for the SL environment was presented in Figure 4. After the designing of SL environments, a questionnaire was administrated among 70 students from King Abdullah University of Science and Technology to perceive their satisfaction levels and their learning performance with SL.

![Diagram](image)

*Fig. 1: Definition of SL implications and its additional patterns.*
**Results:**

The male-to-female ratio was almost even, with 30 (33.3%) of the 70 total respondents male. The median time spent by respondents in Second Life in a typical week was 3 hours, with a minimum of zero and a maximum of 21 hours.

**A: Student Satisfaction:**

To measure the students’ satisfaction, six items were adapted from the study of (Arbaugh, 2000). These items focus on students’ satisfaction, their perceptions of its quality and their intention of taking future courses via SL. Each item was measured based on five-point Likert scale, which ranged from strongly disagree (1) to
strongly agree (5). The mean of the Fisher’s F ratio scale was found to be normal and acceptable for the purpose of statistical analysis (M= 4.04) as shown in Table 1.

**B: Perceived Student Learning Performance:**
Similarly, for measuring the variable of student interaction, we used items of (Johnson, Aragon, Shaik, & Palma-Rivas, 2000). Each item was measured based on five-point Likert scale, which ranged from strongly disagree (1) to strongly agree (5). The mean of the Fisher’s F ratio scale was found to be highly for the purpose of statistical analysis (M= 4.34) as shown in Table 1.

![Fig. 4: Environment View.](image)

**Table 1:** Preceded Satisfaction Levels and Perceived Effect on Student Learning By Second Life Class.

<table>
<thead>
<tr>
<th></th>
<th>Class conducted fully in Second Life Mean (sd)</th>
<th>Class by real-world was similar by Second Life Mean (sd)</th>
<th>Second Life utilized as additional support Mean (sd)</th>
<th>Real world class utilized as additional support Mean (sd)</th>
<th>Fisher’s F ratio (p)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Students Satisfaction</td>
<td>* 4.21 (1.21)</td>
<td>5.00 (1.61)</td>
<td>* 4.47 (1.42)</td>
<td>3.5 (.71)</td>
<td>4.04 (0.008)</td>
</tr>
<tr>
<td>Student Learning Performance</td>
<td>** 4.30 (1.12)</td>
<td>5.05 (1.16)</td>
<td>** 4.65 (1.01)</td>
<td>3.5 (.71)</td>
<td>4.34 (0.006)</td>
</tr>
</tbody>
</table>

Table 2 illustrates the process of running one-way ANOVAs between-group differences in mean scores for the influential factors found a statistically significant difference for only one factor, “Linden Lab support for educators” (Mean= 3.30 & STD 1.85). The factor, “Student engagement” also showed a mean score approaching significance (Mean =3.01 & STD 1.83).

**Table 2:** Importance of Influential Factors to Adoption of Second Life as an Educational Tool.

<table>
<thead>
<tr>
<th>Influential Factors</th>
<th>Mean (sd)</th>
</tr>
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<tbody>
<tr>
<td>• Student interest in SL Technology</td>
<td>4.32 (1.34)</td>
</tr>
<tr>
<td>• Student interest in improving my learning</td>
<td>4.21 (1.45)</td>
</tr>
<tr>
<td>• Success use of Second Life for learning Islamic Concepts</td>
<td>2.72 (1.72)</td>
</tr>
<tr>
<td>• Mass media</td>
<td>3.04 (1.86)</td>
</tr>
<tr>
<td>• Linden Lab support</td>
<td>3.30 (1.85)</td>
</tr>
<tr>
<td>• Student engagement</td>
<td>3.01 (1.83)</td>
</tr>
</tbody>
</table>

Items: Subjects were asked “How significant were each of the following elements ...” with 5 = very influential and 1 = not influential at all.

**Conclusion:**
This paper aimed to design and evaluate a second life environment for learning the Islamic concepts and to assess the value of the virtual world among the Saudi students towards the use of SL as an educational tool. Future work could involve an experimental comparison of collaboration tasks that can be assigned to the students after finishing the course, which could be evaluated by performance.
REFERENCES


