

Available online at [www.sciencedirect.com](http://www.sciencedirect.com)**SciVerse ScienceDirect**

Procedia - Social and Behavioral Sciences 46 (2012) 4534 – 4538

**Procedia**  
Social and Behavioral Sciences

WCES 2012

## Higher education students' behaviors as Avatars in a web based course in second life

Serpil Yalcinalp<sup>a\*</sup>, Nurcan Sen<sup>b</sup>, Gamze Kocer<sup>c</sup>, Fatih Koroglu<sup>d</sup><sup>a</sup> Baskent University, Faculty of Education, Baglica Campus, Ankara 06810, Turkey,<sup>b</sup> Nurcan SEN, MEB, Ankara, Turkey<sup>c</sup> Baskent University, Faculty of Education, Baglica Campus, Ankara 06810, Turkey,<sup>d</sup> Baskent University, Faculty of Education, Baglica Campus, Ankara 06810, Turkey,

### Abstract

Applications of virtual learning environments in higher education have gained particular attention both from educators and higher education institutions in recent years. In this respect, Second Life (SL) environments are the prime example of three dimensional multi-user environments which are low in cost and which offer a high value in terms of learning. In this study, a group of seventeen students from the faculty of education participated in a course, in which a part of their class activity was carried out in a SL environment. This paper describes the construction of a SL course environment that students enrolled in and summarizes the results of observations in this virtual classroom such as students' behavior and interaction.

*Keywords:* secondlife, avatar, web based course, virtual learning environment, multi-user virtual world.

### 1. Introduction

There is rapid growth in the using of virtual worlds as a tool for next generation Technology-Enhanced Learning. Second Life (SL) is currently the most popular multi-user virtual world platform being used in education and has tremendous potential as a learning environment. In such environments learners are able to visit places which are difficult to access in real life, can conduct collaborative and cooperative studies with their peers, are able to demonstrate more creative and independent behavior through their avatars and are in a position to share more and produce more in their courses. Other advantages could be stated as the creation of realistic environments to practice, the creation of learning materials by the e-learners and integration with other learning technologies.

#### 1.1 What is Second Life

Second Life, developed by Linden Labs in 2003 is a free downloadable online 3D virtual world where users navigate and interact within the environment using their avatar. The SL virtual world is entered through a free client program called the SL viewer. The viewer renders 3D graphics using OpenGL technology and enables Second Life users to interact with each other (Wikipedia, 2011).

\* Serpil YALCINALP. Tel.: +90-3122466620  
E-mail address: [serpily@baskent.edu.tr](mailto:serpily@baskent.edu.tr)

Within the context of Web 2.0, SL is an example of an immersive, three-dimensional environment that supports a high level of social networking and interaction with information. Individuals enter SL as avatars, which can take any form the user chooses. In the SL virtual world, residents can explore environments, meet and socialize with other residents (using voice and text chat), participate in individual and group activities, create and trade virtual property and services with one another and learn from designed experiences (Wikipedia, 2011; Wiecha, 2010).

Second Life is filled with user-created content and immersive experiences. In Second Life, residents can teleport from place to place, fly, drive vehicles, participate in recreational events such as live music, theatre, exhibition or join role-playing games and, explore environments and communities. Residents can also create, buy, and sell anything they can imagine (Second Life Education, 2011). It is intended for people aged 16 and over, and as of 2011, has about one million active users (SL Statistical Charts, 2010). Second Life demographics show that 83% of the population is 25 years or older, with users over 44 years of age being the heaviest users on average. In terms of gender ratios the percentage of the users is indicated to be 57% male and 43% female. There is no charge to create an SL account.

Users can choose and characterize themselves through Avatars which are personalized by altering shapes, size, skin, hair, and clothing. They may also use animations to simulate facial expressions, posture, and gestures. Avatars can communicate by typing through local chat or instant messaging (IM), or by speaking through voice chat. Avatars can fly, float to observe goings-on from any angle, travel-teleport in order to materialize in a different location, fall and recover, and can change their visual perspective at will (Wiecha, 2010). Avatars and other simulations are consequently the main features in virtual environments like SL.

According to the Association of Virtual Worlds, there currently exist over 250 virtual worlds designed for entertainment, play, socializing, education and personal growth. However, the most widely used adult world is Second Life, with the main application areas being education, art, science, work solutions, religion, embassies, entertainment and relationships. There are over 700 educational institutions from all over the world in SL (Second Life Education, 2011).

## *1.2 Educational Use of Second Life*

There are many ways to approach answering the question about justifying why virtual worlds like Second Life should be used in education. According to Orwin (2011), Virtual worlds are immersive, contain locations (physical presence like you feel in real life), have stuff to interact with, have co-presence (users do not feel alone, rather they feel like they are part of a class) and allow action (as opposed to passive viewing or clicking). There is an active educational community in SL. Over 300 colleges and universities have “builds” in SL where they teach courses and conduct research. A number of organizations, such as the National Aeronautics and Space Administration (NASA), along with museums, educational groups, and a host of other government agencies, currently stage regular events, seminars, and workshops in Second Life (Wiecha, 2010). Furthermore, many educational institutions and organizations are creating virtual learning environments to deliver courses, field trips, and events including distance education, presentations, discussions, simulations and role playing (Second Life Education, 2011).

Rapid advances in information technology are reshaping the learning styles of many students in higher education. The standard “world to the desktop” interface is now complemented by multiuser virtual environments in which people’s avatars interact with each other (Dede, 2005). Learning in Second Life enables remote students to meet in the same virtual classroom. Second Life’s persistent virtual environments enable students to work together synchronously, individually or as a team. The learning space is always available, not just for geographically dispersed groups but even those who meet regularly in the physical world. This is particularly useful when students require more flexible schedules or need to work asynchronously on the same Project (Second Life Education, 2011).

Second Life can be used by educators to create learning experiences through the creation of specific environments based on notions of collaborative learning and constructivism. Using technology to mediate collaborative learning can allow students and educators in different locations to interact (Honey, 2010). Not only does Second Life amplify learning beyond the capabilities afforded by teleconference calls and web presentation tools, also creates opportunities for field trips that go far beyond the walls of traditional learning spaces. Training

simulations are also incredibly powerful in Second Life because they simulate complex processes in the physical world and avatars can take on different roles to enhance learning (Second Life Education, 2011).

According to Livingstone and Kemp (2008), teaching activities in SL can be grouped into four categories; role plays and simulations; group work and team building; events and presentations; and constructive activities such as building 3D objects and developing properties. As an educational platform, SL supports a variety of social configurations that indeed encourage the various kinds of learning. Belonging to groups, taking and teaching classes and creating learning resources are ways of participating in Second Life (Aurilio, 2010). The anonymity afforded by the avatar appears to lead to less inhibition and greater interaction. In addition, the greater sense of “presence” in a virtual world positively influences group processes and cohesiveness, as well as engagement and attention (Wiecha, 2010). This is why it is valuable to search the undergoing effects of supporting courses in higher education with activities in SL from the perspective of students’ behaviors in such environments. In that respect, the purpose of this study is to explore the potential of using a virtual world platform and the respective student behaviors as avatars in Second Life.

## 2. Method

Qualitative methods of data collection and analyses were used. The student’s behaviors reflected in the actions of avatars were observed by searchers and two colleagues. Screen captures with “Adobe Captivate Software” were taken. The observation checklist was used in the observation session. Observation data as well as interviews with students and screen data from the captivate software, were analyzed.

### 2.1 Participants

This study was conducted with the participation of seventeen participants who were fourth year undergraduate students from the Computer and Instructional Technologies Department of Baskent University. Although the students were enrolled in “Project Design and Development” course, none of these participants were experienced in using SL and so required instruction in how to use the platform.

### 2.2 SL Course Environment

For those who decide to try SL in education the main problem is finding free land, particularly for institutions which doesn’t have funding for such activities. There are some organizations and institutions that are in a position to give free land to support studies which are declared to be for educational use. A classroom environment was planned for this study. It was constructed as a skybox on a private island previously owned by one of the participants. Building the classroom on skybox provided both privacy and security.

After building the skybox, we researched free materials to use in the classroom. Classroom was furnished with tables, chairs (with automatic seating such that when avatars click on the chairs, they automatically sit down) posters and slide viewers with a built-in script for controlling the PowerPoint slides (Figure 1).

Students who were enrolled in the “Project Design and Development” course were prospective teachers. In the framework of this course they constructed their own project groups that were based on their chosen topics. Four groups emerged with each group consisting of 5-4 students. The project groups and their topics were: 1) Group A: “Developing a Learning Object Repository for the use of Computer and Instructional Technologies Departments’ Prospective Teachers”, 2) Group B: “Use of mobile Technologies in Higher education: An Application”, 3) Group C: “Use of SL in Education“, 4) Group D: “Investigation of the Use of Video Materials in Primary Education. During the course each group planned and developed their projects in 14 weeks. At the end the course each group were encouraged to demonstrate and discuss their projects. Their presentations and discussions took place within the Second Life environment in which students met at a pre-announced date and time to present their projects, to share and discuss the results of their projects, and to express their major impressions about the SL environment they had been involved in. To become familiar with the course environments, students were first allowed to enter and meet in



Figure 1. Classroom Environment

a free land space, and were guided there through the environment to learn the main facilities and functions used in SL. During this introductory meeting which occurred under the guidance of instructors, students were informed about how to choose, dress and manipulate their avatars. Nobody knew each other's avatars, and so identities were left as surprise until the first meeting in the SL classroom. Students started to login at meeting time announced. They first gathered at the roundtable outside of the classroom, in the garden. They were informed about classroom environment and what they are expected to do. Then all entered the classroom and groups presented their projects by using slide viewers and discussed them in detail.

### 3. Results

The behavior of the students was observed by the instructor and two other observers at the end of the course. The students also described their experiences they had had in the course. The results of those observations and students' opinions from the interviews were analyzed and classified into three categories; 1) Choice of avatars 2) Interactions with their friends and instructor and 3) Interactions with the environment. The most interesting action of the students was the general pattern in the selection of their own avatars. Both instructors and students agreed that each student's selection of his/her avatar was rather in accordance with his/her actual physical appearance in real life and also reflected their real life behaviors. This was reflected in participant student Ayse's words; *"Gokce's selection of her avatar was in accordance with her style in the real worlds. So, I recognized her appearance quickly- at the first moment-from among the others in this SL place "*. Besides the general appearance of their avatars, students also presented similar actions to those they would display in their real life. For example, participant Ali explained that (by laughing) *"It is interesting that Mert's avatar was very familiar to the real actions of Mert, such as his restless and very energetic style was reflected. His avatar always tried to fly instead of walking, and he tried to jump when I was talking to him"*. Similarly, when one of the students had arrived late to the SL classroom, others stated that *"Can is late as usual, he is still the same in this virtual class"*.

Students' interaction with their friends and instructor brought up interesting points. They were first observed while they talked first to their close friends. It was observed that conversations at first meeting were almost always initiated by asking each other for help. Students had requested help from each other mainly on issues like how to move, how to sit, how to change their direction, and how to read the slides on slide viewers. Each student was guided by the instructors to sit on the chairs at the beginning, then, they helped each other in further acts. They were noticeably more relaxed and confidence about communication between each other and the instructor than real classroom. They expressed themselves more comfortable. The avatars allowed them more freedom to express themselves and, they talked much more than they had usually done in real class. It is also valuable to note that the students and instructor had a quite sense of humor during the conversations, and a very positive atmosphere was

indicated in this virtual class. The meeting at the roundtable lasted a long time and they didn't get bored and didn't want to logoff even it got to be very late in the midnight.

Students' interaction with the course content, course environment and the material was also remarkable. While presenting their projects, their avatars collectively gathered in front of the slide viewer. They examined objects in the classroom and they found the classroom to be very realistic and they all felt a part of the event inside it. All of the students were also allowed to follow the slides individually in each slide viewer. One of the students indicated that "*Listening to the presentations of my colleagues in this virtual environment had aroused my interest more. I had captured the important features and had seen the main results for each project. I had an opportunity to ask my questions and to discuss with my friends at appropriate time in a very calm and comfortable environment.*". Another student indicated that "*I liked the computer on the instructors' table, it was so realistic. I successfully searched Google in there, and found my answers about the topic that my friends' were presenting in their projects*". The fact that SL environment reflecting the real features (like their friends avatars-behaviors and the virtual classroom containing physical materials as objects), were stated as the main factors arousing their interest and motivation in this course.

#### 4. Conclusion

Introducing students to SL was an initiative pilot study in the uses of virtual worlds in education in our department. Students' perceptions and behaviours in this 3D virtual world were positive. It brings fun to the class and also to the methods of teaching. This feature of SL encourages students to study, learn and cooperate together. The planning stage is important and unavoidable for effective learning and teaching when certain curriculum and teaching practices are taken into SL environments. Further research and refinements are necessary in the design, and use of such virtual environments in the improvement of educational practices.

#### References

- Aurilio, S. (2010). *Learning in the Wild of a Virtual World*. Retrieved on November 19, 2011, from <https://docs.google.com/Doc?docid=0ATURcUuDPUI1YWg4cnIzaHJ0bmd2XzEzNnp6NWozZGdj&hl=en>
- Dede, C. (2005). Educause Quarterly. *Planning for Neomillennial Learning Styles*. Retrieved on November 14, 2011, from <http://www.educause.edu/EDUCAUSE+Quarterly/EDUCAUSEQuarterlyMagazineVolum/PlanningforNeomillennialLearn/157325>
- Honey, M. L. (2010). *Transforming Learning: Using a Multi-User Virtual Environment for simulation*. Retrieved on November 19, 2011, from [http://www.hinz.org.nz/uploads/file/2010conference/P20\\_Honey.pdf](http://www.hinz.org.nz/uploads/file/2010conference/P20_Honey.pdf)
- Livingstone, D. & Kemp, J. (2008). UPGRADE (European Journal for the Informatics Professional). *Integrating Web-based and 3D learning environments: Second Life meets Moodle.*, 9 (3), 13. Retrieved on November 19, 2011 from <http://www.cepis.org/upgrade/files/2008-III-kemp.pdf>
- Orwin, L. M. (2011). Learning in Virtual Worlds. *What activities are the best fit for highly immersive virtual worlds?* Retrieved on November 20, 2011, from <http://learning-in-virtual-worlds.wikispaces.com/best-fit>
- Second Life Education (2011). *The Virtual Learning Advantage*. Retrieved on November 10, 2011, from <http://lecs-static-secondlife-com.s3.amazonaws.com/work/SL-Edu-Brochure-010411.pdf>
- SL Statistical Charts (2010). Retrved. on Nov.17, 2011 from <http://dwellonit.taterunino.net/sl-statistical-charts-testing/>
- Wiecha, J. (2010). Journal of Medical Internet Research . *Learning in a Virtual World: Experience With Using Second Life for Medical Education*. Retrieved on November 13, 2011, from <http://www.jmir.org/2010/1/e1/#ref7>
- Wikipedia, The Free Encyclopedia (2011). Retrieved on Nov. 17, 2011, from [http://en.wikipedia.org/wiki/Second\\_Life#Education](http://en.wikipedia.org/wiki/Second_Life#Education)