The Teacher as Designer: Preparations for Teaching in a Second Life Distance Education Course

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Abstract—Teaching in Second Life (SL) is much like teaching in K-12 schools in that the teacher has to plan in a similar fashion. However, when teaching in SL most students have never used this technology; therefore, the teacher must create the learning environment much like a designer creates an artifact, through planning, execution, and evaluation. Based on a literature survey and data collected from a teacher preparation distance education course taught entirely in Second Life, we identified the following steps of a design process: allow for social interaction, scaffold the students’ learning of the new technology, plan for the structure of the course, the procedures in the classroom, and the transitions. We support our findings with empirical examples, and compare our findings with related work, focusing on social presence in 3D virtual learning environments.

Keywords: 3D virtual world; distance education; preparations for teaching; qualitative analysis; Second Life; social presence

I. INTRODUCTION

The 3-D virtual immersive environment, Second Life, was used as the educational platform in a teacher preparation program at a research university in the United States. Faculty members have been teaching in SL for three years, and it has been the educational platform for six online graduate courses, at both the Master’s and Doctoral level. It has also been incorporated into undergraduate, campus-based courses for role-play simulation. Since the first semester when the use of SL was piloted in 2011, 716 students have used SL in their teacher preparation courses. This paper presents an empirical study to examine the hypothesis in more detail, using a qualitative approach. We summarize our findings and give empirical examples from our data.

II. RELATED WORK

Second Life is a multi-user virtual environment (MUVE) configured as an online world in which individuals interact as avatars with people and objects in three-dimensional space. MUVEs offer educators new opportunities to design authentic learning experiences that would not be possible in a traditional classroom [4]. Educators have used SL for online instruction in colleges and universities in a variety of disciplines, from academic content to professional preparation [12].

Applied to video conferencing, Berge’s online Instructor Roles Model [2] posited four key roles for the instructor in distributed learning environments: pedagogical, social, managerial, and technical. One study of multiple online courses using Berge’s model [10] found that students rated instructors as more effective in the pedagogical, managerial and technical roles but less effective in the social role and in maintaining social presence. Berge [1] has suggested that the four instructor roles are intensified when teaching in virtual worlds. A qualitative study of online instructors using virtual reality applications [9] found that some were moving toward using more student-centered and problem-based pedagogy, but others were trying to replicate classroom conditions in the online environment.

Focusing on the social role, Gunawardena [5] applied the concept of social presence, suggesting that verbal and non-verbal behaviors to establish relationships with and among students were critical to successful online instruction. A large body of research has documented that social presence is an important predictor of student satisfaction with online courses. Jarmon [7] found that users experienced heightened social presence in SL, which she termed an “embodied sense of social presence,” (p. 1) and attributed to being able to move avatars through space in real-time. Bulu [3] suggested that social presence might be more important than immersion in predicting student satisfaction in virtual worlds.

III. METHODS

A qualitative research analysis was employed, combining a case study [13] and aspects of Internet ethnography [6]. We examined the use of Second Life in two sections of a graduate-level special education teacher preparation course, held at a North-American University. The course used Second Life as the educational platform with all course sessions held online. Forty-four students took part in seven, one-hour class sessions, divided into: interactive lectures of theoretical concepts, individual activities, small group activities in separate rooms, and role-play activities. Afterward we conducted some Interviews with a student and the teacher. All sessions and interviews were observed at distance and video-recorded with screen capture software. We transcribed the data using linguistic conventions according to interaction analysis [8].

We categorized the qualitative data into recurring themes, combining top-down (theory driven) and bottom-up (data-driven) iterative classification. Representative examples of these categories are shown below and analyzed.

IV. DATA AND ANALYSIS

While planning for a course in SL teachers need to think about activities from a different perspective. The following
A. Allow for Social Interaction (Excerpt 1)

The following excerpt, taken from the interview with the teacher, shows why SL was found to be the most suitable educational platform in many respects, and particularly in fostering social interactions among learners.

"...Second Life lends itself to social interaction, as compared to Wimba ((an VLE integrated with Blackboard LMS)). So, for distance education, for me Second Life is my preferred educational platform for social interaction, because you actually get the physical presence of a person. For example at the end of this semester, when I was flying around as students (...) they finished working on one of the (...) other groups' role plays, and so they had a couple of minutes, and they were just talking, and I heard a student say, one student say to somebody in their group, Hey, what are you all takin' this summer, what class are you takin' again, um, we should try to get in the same class. That would never happen in Wimba."

Compared to other (asynchronous) platforms supporting online learning based on social interaction and artifact mediation, the virtual environment of Second Life seemed particularly well-suited for distance education from the point of view of fostering social interaction, as it features a 3D-graphical representation by means of avatars that are able to easily interact and communicate with audio or chat (Fig. 1).

Figure 1. Teacher walks the students through a set of powerpoint slides of key concepts and asking the students questions along the way.

B. Scaffold the Learning of SL (Excerpt 2)

It is recommended that teachers incorporate assignments into the course to scaffold the learning of SL. When assignments are incorporated, it ensures that students practice the skills necessary to participate in class. This is demonstrated in the following excerpt of an online interaction between two students and a teacher, regarding a third student who is temporarily lost and need help to get back to her group.

Student2: ((Teacher)), if one of our other people are flying around lost, tell them that.. is there a way that we can get them to come here? Jen seems to be a little lost.

Teacher: Oh yeah, I can help.. You said Jen is lost?

Student2: Yes, Jen A.

Teacher: OK, let me look on the mini-map. Oh, I found her, I'll bring her over. I'll be right back (she flies away).

C. Structure and Procedures

Since a majority of students will be new to using SL, it is important that class sessions have structure and that procedures are explicitly taught.

1) Structure (Excerpt 3): Teachers should plan how they would like the class to be structured. The following excerpt is from an interview with the teacher conducted by observer 3 (one of the researchers).

Observer3: if you were asked to teach these course in a conventional face to face way, would you organize it in the same way, or differently?

Teacher: That's a really good question, I taught this course to undergrad, face to face, and (...) when I taught it to undergraduates, face to face, (...) I tried to incorporate role-play, because I really like role-play and I find that it (...) that backs its effectiveness but, (...) When I taught it in the face to face, what I found was that for role-play, face-to-face, people aren't. I mean, I can't generalize it to all people, but (...) were apprehensive about [...] as online, I feel like ((I see)) their face.

The excerpt shows how the course was organized differently from a face-to-face course the teacher had taught before to undergraduate students, and that role-play became an important activity; it was less apprehensive for many of the students compared to their experience of role-playing in conventional (f2f) settings. It became a stepping-stone, in order to apply the theoretical concepts taught in the lectures (see Fig. 1). Furthermore, the role-plays were created and played out by the students in collaborative activities.

2) Procedures (Excerpt 4): Teachers also need to determine the procedures needed in class, and then explicitly teach those procedures to students. The following excerpt is from the teacher interview.

"When I first started teaching, in Second Life, I used to type everything into the chat text. [...] then it would disappear, and so I'd have to type it again. And it was very ineffective and very non-time efficient, because it would take me forever to type to each student what they were supposed [...] and (...) so, the boxes, once I learned how to build the boxes, in order to disseminate the information, that was the way that (...) was the most efficient. So far (...) for getting that information to multiple people."

The teacher explains why she prefers to use 'boxes,' an idiosyncratic SL tool for sharing information compared with sending individual messages by chat. The choice of using boxes was considered the more convenient way to communicate to several students (see Fig. 2).
D. Planned Transitions (Excerpt 5)

In addition to planning the structure and procedures, faculty members also need to plan how students will transition between activities. The following excerpt is from the interview with Teacher in the same dialog context as shown in excerpt 3, 2 1/2 minutes preceding it.

Observer3: Could you say a little bit about that process, or, how do you perceive, going from theory to practice in this domain?

Teacher: Definitely. And that was my goal, in creating, like so [...] throughout the whole (.) the course of the semester (or) five class sessions, my goal was that, so then I tried to only do ten, like, five to ten minutes of lecture, and then sort of individual activity, or in the past I've also done pair activities. And then do five ten more minutes of lecture and then have them do the group work, and, my idea with the group work was whatever topic we had been talking about that day, or whatever content, that I had been teaching them, I wanted them to practice (those) skills.

The excerpt shows the amount of minutes assigned to different activities, and the typical sequence of activities. In a class of 25-30 students, it is difficult for the teacher to know who has submitted an assignment that is going to be reviewed later because one would need to figure out who was still working just by looking at the names of the students who submitted. It could be done with a printed list and checking by student names; however, it is more efficient to ask students to physically move to another location when they have finished.

V. DISCUSSION

In this section we compare our findings with the findings reported in the literature, supporting and synthesizing some of the previous research. A theme that runs through our data without using the term is social presence. By social presence we mean the degree of awareness of the other person in a communication [11]. While even unaware of the concept, the teacher was conscious of those relationships and engaged in multiple actions to create them as in the following findings:

1) The teacher was trying to make the distance education experience more student-centered (Excerpts 3 & 5), make use of technological artifacts (Excerpt 4) and not replicate the classroom as indicated by Keskitalo [9].
2) She used position and movement (non-verbal behaviors, Excerpt 2) as well as verbal behaviour [5] to interact, and that is why the teacher preferred SL to video conferencing and an asynchronous learning environment (Excerpt 1).
3) Student comments are more about their relationships with the other students and with the teacher [3] rather than immersion or extent to which they feel the environment is real. This is supported by our findings through the ease by which avatars could meet and communicate (Excerpt 1), using both direct (voice, chat) and indirect (e.g. boxes, notecards, slides) means of communication.

VI. SUMMARY AND CONCLUSIONS

Four types of teacher preparation activities were found essential when planning a distance education Master’s course, taught in its entirety in Second Life: 1) allow for social interaction, 2) scaffold the students’ learning of the new technology, 3.1) plan for the structure of the course, 3.2) the procedures in the virtual classroom, and 4) the transitions. We analyzed each activity with a meaningful empirical example from our data, using a qualitative approach to data collection, selection and analysis.

REFERENCES