

# A CALL for evolving teacher education through 3D microteaching

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**Abstract.** This paper describes micro-teaching delivery in virtual worlds. Emphasis is placed on examining the effectiveness of Singularity Viewer, an Internet-based Multi-User Virtual Environment (MUVE) as the tool used for assessment of the student teacher performance. The overall goal of this endeavour lies in exploiting the opportunities derived from such an immersive environment in order to provide better distance education. To this end, a total of eight language teacher practitioners from different parts of the world took part in this study and engaged in peer-microteaching as part of their Master of Arts (MA) in Computer Assisted Language Learning (CALL) programme. Data acquisition involved screen recordings of the peer microteaching sessions, statements in participants' reflective journals and both debriefings and written communication within the virtual world. Our results indicated the positive potential of using MUVE platforms as instruments in the assessment of student teacher performance.

**Keywords:** CALL, teacher education, microteaching, virtual worlds, singularity viewer, MUVE.

## 1. Introduction

Recent research reveals that L2 teachers who completed online methodology instruction demonstrated less confidence in their abilities to teach L2 learners (Kissau & Algozzine, 2015). In spite of efforts to better prepare teachers and provide support with emphasis on new technologies, there is a claim that there is need for “better professional development opportunities in the CALL area” (Beaven et al., 2010, p. 7). It is only recently that virtual technology for training in the simulation field has been applied in FL/L2 teacher preparation and education programmes

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(Judge & Katsioloudis, 2011). This paper attempts to shed light on how foreign and second language (L2) teaching practices within an MA in CALL online teacher education programme can be extended through virtual worlds. Since the virtual technology for training in the simulation field has only been recently applied in L2 teacher preparation and education programmes (Judge & Katsioloudis, 2011), the use of microteaching techniques, supported by the use of Singularity Viewer environment, are explored for the development of 3D microteaching, as part of the online microteaching component of the programme. Questions regarding the effectiveness of Singularity Viewer as a tool for microteaching delivery and the extent to which microteaching in virtual worlds raises student teacher awareness of the complexity of language teaching through innovative technologies are analysed.

### **1.1. Microteaching technique**

Microteaching is frequently conducted as a group activity in teacher-training courses. It includes the planning and delivery of a short lesson plan or part of the lesson plan amongst peers, followed by feedback both from the trainees and the instructor (Richards & Farrell, 2011). It is defined as “a scaled down realistic classroom training context in which teachers, both experienced and inexperienced, may acquire new teaching skills and refine old ones” (McKnight, 1980, p. 214). The benefits of this technique have long been discussed and thus it is often used in various teacher preparation programmes.

Student teachers in this project engaged in 3D peer-microteaching, as part of the online microteaching component of the programme. Their teaching was screen recorded on a desktop device for formative assessment purposes. Thus, their “performance skills, cognitive processes and affective learning” (Wallace, 1991, p. 98) were determined in order to assess the extent to which participants’ technological abilities to create, design and implement a lesson in a new technological environment had been developed.

### **1.2. Virtual worlds use in teacher education**

According to Meritt, Gibson, Christensen, and Knezek (2013), digital simulations “provide low-risk, high-touch, scalable and efficient methods for microteaching and pedagogical experimentation combining elements of fantasy and play within realistic dynamics and authentic actions into the pre-service classroom” (p. 412). Although promising alternative ways to provide a practice environment, it is only currently that they have been explored in teacher preparation practice and even less in an online training CALL context. Indeed, two alternative MUVE technologies,

Second Life and OpenSim were used as the simulation field to prepare teachers on how to manage the classroom and anticipate real-life classroom problems in a pre-defined context (Meritt et al., 2013). The results were rather encouraging in relation to the pedagogical knowledge gained.

### **1.3. Singularity Viewer as the simulation field**

Singularity Viewer, a client programme for Second Life and OpenSim, is a private space owned partly by the Cyprus University of Technology. To this end, only its members can have access to the land, i.e. the ten locations, at any given time. As a private space, there is more control over what happens and who is present, thus diminishing the distractions while enhancing the engagement and attention of the participants. In Singularity Viewer, there are some public and private combinations, for instance teleporting from one location to the other. This provides access to a wider range of environments while permitting the flexible design and deployment of a scenario for microteaching according to their needs. A significant limitation is that students are allowed to construct and modify a location provided they were primarily given the appropriate rights to change some properties of the provided objects.

## **2. Method**

### **2.1. Participants**

Eight practicing language teachers (three males and five females) from different parts of the world (Europe and Africa) enrolled in the online MA in CALL programme of the Cyprus University of Technology (CUT) participated in this study. The participants were part-time and full-time students who had no previous experience in creating, designing and delivering microteaching in a Singularity Viewer virtual world. Only one of them had previous experience of designing a virtual serious game.

### **2.2. Procedure**

The use of Singularity Viewer, and its sandbox location in particular, allows users to undertake the detailed configuration of their personal teaching place, i.e. the tools to be used and the knowledge resources to be provided on the subject of interest. Hence, the content can be specifically selected to suit the needs of any specific language subject.

In this particular study, different locations were implemented, while some students preferred to customise their avatars, taking advantage of the tools provided. For example, in one of the microteaching instances, they customised their avatars in colorful cubes and formed different towers according to their fellow students' instructions in order to learn the colours. The learners thus created connections and collaborated with their peers by forming a new virtual learning process. The possibility of reusing the entire set of tools and creating a new environment for a different subject, simply by changing the resources, demonstrates the richer context of the virtual world over any other traditional e-learning platform.

Teaching sessions lasted 20 minutes: five minutes of preparation and settlement in the environment; ten minutes of scenario implementation, predominantly in the sandbox area of Singularity Viewer virtual world; and five minutes of debriefing at the participants' (in the form of avatars) home area. In turns, they shared their experiences and impressions of the use of virtual worlds and conducted self and peer evaluation of their microteaching performance in this environment. After the students had finished all their virtual microteaching, reflective journals were used to establish the participants' feelings regarding the whole experience.

### **2.3. Data collection**

This study adopted a qualitative approach with a case study design. The virtual classroom performance of the participants and their debriefing were screen recorded with the use of Atube Catcher, an online free screen recording tool, both by the participants and the researcher. Students were instructed to screen record the whole procedure in order to evaluate their performance later in their reflection journals. Hence, the data were gathered through the observations and the participants' utterances or written communication within the virtual world, along with their reflections in their reflective journals. They were further analysed qualitatively through a transcribing and coding process (Creswell, 2008). In the data analysis process, the emerging themes were categorised.

## **3. Results and discussion**

The multi-user virtual worlds were overall considered by the participants as a powerful medium for instruction and education as well as a good source of user feedback. In addition, analysis of these data provided evidence of students' integrated knowledge of teaching from the perspective of either the actors (as avatars) or the audience. According to students' responses, the easy-to-use affordances of virtual

worlds for designing and building enabled them to carry out tasks otherwise physically impossible in the real world. For example, students designed and created contextualised settings such as a travel agency, a gym, a clothes shop and a disco night, where students could simulate the real-life-like roles as avatars in appropriate clothes, for specific contextualised purposes, following real-life scenarios. According to students' comments, this enabled them not only to participate in specific contextualised situations but also to enjoy interaction with each other. This was also observed by the researchers through the screen recorded data.

Analysis of transcripts of the debriefings and student reflections also revealed some common themes that participating student teachers felt teachers should have. These include organisation, class management, student engagement, attention to positive/negative behaviours, time management, misbehaviour management, and proactive teacher behaviours. Some other common themes were related to the limited choice of customisation of the avatars and the locations or even the use of resources of the private space.

There were, of course, some limitations in this project that have influenced the validity of this study. The relatively small number of the participants – eight overall – was one of them. Some technical problems that occurred during the microteaching session, such as sound buzzing and echoing were tackled by the participants themselves, while some others needed the observers' further assistance. Indeed, although immediate assistance was offered to them, there were some distractions and some annoyance.

#### **4. Conclusions**

This study focuses on the opportunities Singularity Viewer, a MUVE could offer in L2 Teacher Education. The data analysis indicated that the use of virtual world desktop applications in microteaching was beneficial for the participants. Student teachers explored ways of extending the use of new technologies in their teaching beyond the Web 2.0 technologies by actually using the 3D virtual world for teaching purposes. Although its limitations need to be addressed, the positive and profitable findings of this programme need to be taken into account and further research carried out in the use of this technology with a larger number of participants.

#### **5. Acknowledgements**

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