

Chapter 13

Immersive Education Spaces Using Open Wonderland: From Pedagogy through to Practice

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ABSTRACT

This chapter presents a case study of the use of virtual world environment in UK Higher Education. It reports on the activities carried out as part of the SIMiLLE (System for an Immersive and Mixed reality Language Learning) project to create a culturally sensitive virtual world to support language learning (funded by the UK government JISC program). The SIMiLLE project built on an earlier project called MiRTLE, which created a mixed-reality space for teaching and learning. The aim of the SIMiLLE project was to investigate the technical feasibility and pedagogical value of using virtual environments to provide a realistic socio-cultural setting for language learning interaction. The chapter begins by providing some background information on the Wonderland platform and the MiRTLE project, and then outlines the requirements for SIMiLLE, and how these requirements were supported through the use of a virtual world based on the Open Wonderland virtual world platform. The chapter then presents the framework

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used for the evaluation of the system, with a particular focus on the importance of incorporating pedagogy into the design of these systems, and how to support good practice with the ever-growing use of 3D virtual environments in formalized education. Finally, the results from the formative and summative evaluations are summarized, and the lessons learnt are presented, which can help inform future uses of immersive education spaces within Higher Education.

INTRODUCTION

Judging by the growing interest in virtual world environments as reflected in computer-assisted language learning international conferences such as WorldCALL and EuroCALL, these applications are part of a group of emerging technologies that have great potential for foreign/second language learning. The shift in the use of the web from static to more interactive uses (the so-called Web 2.0) is reshaping the way we learn (Alexander, 2006). However, there is virtually no research to date to provide evidence of the specific traits and characteristics of technological applications such as virtual world environments that might contribute to the learning of second and foreign languages (L2).

In this chapter we present the findings from the SIMiLLE project. The problem we aimed to address in this project relates to the need to enrich foreign language learning experiences for overseas students who wish to study in a UK Higher Education Institution (HEI). By studying in the UK the students have the advantage of being immersed in the culture, but traditional classroom methods rarely take advantage of the cultural context to control the learning content (classroom learning by definition removes students from the 'real' world). Whereas outside of the classroom, students often cluster together forming linguistic or cultural islands, which are often isolated from their immediate cultural surroundings.

This chapter provides some background information on the technology platform used (Wonderland) and our previous project MiRTLE (Gardner, Scott, & Horan, 2008; Callaghan, Shen,

Gardner, Shen, & Wang, 2010). We then describe the SIMiLLE project in more detail including the requirements for the project and how we intended to support best practice in L2 teaching and learning. This is followed by an overview of the design of the SIMiLLE systems and the evaluation frameworks used. We then provide a summary of the key findings from the different evaluation phases employed by the project. The ultimate objectives of this work were to improve the design of immersive education spaces, to assess and validate the effectiveness of different pedagogical approaches, and inform best practice in this emerging field. We hope to demonstrate that the lessons learned from the SIMiLLE trials go towards achieving these objectives.

BACKGROUND

The Use of Virtual Worlds in Education

In 2005, the international student population worldwide was 115 million, growing at a rate of approximately 15% per annum (Perkinson, 2006). Education is increasingly important in modern knowledge-based economies (Clarke & Callaghan, 2007) where learning is rapidly becoming a lifelong process. China is a good example of this rise in demand: it now has the largest higher education system in the world, awarding more university degrees than the US and India combined (Baker, 2007); university admissions in China have risen from under 10% of young people in 1998 to 21% in 2005 (Wang,

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