Chapter 18

Virtual Environments and Mobile Learning: A Tale of Two Worlds

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ABSTRACT

In recent years, Information Technologies have been used to improve educational environments. These technologies led to new forms of learning, encouraging the use of mobile technologies and three-dimensional virtual worlds, and allowing students a ubiquitous learning environment they can explore to improve their learning experience. Although these learning systems have much to offer to both students and teachers, it is necessary to discuss several research questions: (1) How can these platforms make learning experiences more attractive and motivating, particularly to students who do not have powerful intrinsic motivation to learn yet? (2) How can m-learning and virtual worlds together improve the learner’s resources?

As an answer to these questions, this chapter will define the virtual world concept, distinguish the different types of virtual worlds, and make a comparative analysis between them in order to bring out the features aimed at helping teachers to adopt them in their classes. In particular, we will focus our choice of virtual world environments on open source platforms. As the prevalence of mobile learning increases, this chapter also describes the m-learning scope, its contextualisation and advantages, as well as the learning methods. Finally, the relation of those methods with social virtual worlds is also discussed.

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INTRODUCTION

The development of Information and Communication Technology (ICT) has contributed to a significant change in the society in which we live. The change is irreversible. We are in a society that is increasingly dominated by technology where all are directly or indirectly dependent on the interaction of man with ICT (Menezes & Moreira, 2009). Thus, new solutions must be found.

The technologies, which have dominated the world, came to develop two different realities, information and informatics. The merge of these two realities contributed to the appearance of social networks. Young people are increasingly changing their behaviours, their interests, and their objectives. Conventional education is no longer appealing to new students because they can no longer stand still long enough to attend a lecture. Given this fact, it is necessary for education to keep pace with the changes. The new people are more attracted to virtual environments by mobile technologies, which facilitate communication and social networking among them. Therefore, it is important, given the high rate of expansion devices and the growing prospective of virtual worlds as the future of the web, to reflect and research around their potential in educational settings. This is because the society is faced with new virtual environments, associated with virtual reality and a new concept of learning, mobile learning. With mobile learning, teachers can make reviews of small units, update information, send information to parents, and teach classes in their entirety.

The purpose of this chapter is to demonstrate that m-learning and virtual worlds can help promote new concepts, new approaches and new strategies. In education, it is possible to change the teaching/learning paradigm, including the development of autonomous learning.

The chapter is organized as follows: Section 2 presents definitions about virtual worlds, describes some social virtual worlds and makes a comparative analysis between them based on the matrix developed by Manninen (2004). Section 3 describes how virtual worlds can help in exploring new educational techniques or enhance and complement methodologies and techniques already known in the academic communities, allowing a greater involvement of students in the study, creating conditions to optimize resources, and avoiding the need for the displacement of people. On the other hand, we will explore and articulate some key issues as a reflection for readers interested in this subject. Section 4 focuses on the m-learning concepts, their characteristics, what we need to consider, and on practical issues (e.g. relation with virtual worlds and m-learning). Finally, in the conclusions, we discuss the advantages and disadvantages of the social worlds for educational purposes, and their relation with m-learning.

VIRTUAL WORLDS: DEFINING VIRTUAL WORLDS

In order to get a better discernment of the virtual world’s meaning, it is necessary to clarify and get an unambiguous definition of “virtual world” because, when searching virtual worlds, it is possible to find many and different definitions that lead the reader to have confused ideas about the concept.

Richard Bartle (Bartle, 2004) in the mid 70s defines the virtual world as an environment whose inhabitants are regarded as being self-contained. This leads us to the concept of world, but not to the way the world becomes virtual. Raph Koster (Koster, 2004) defines this concept as a persistent space, which may be experienced by several participants at the same time and being represented by avatars. With this definition, some features of virtual worlds can be easily observed: Persistence and multi-user. However, it does not specify the technology required for the virtual world. Edward Castronova (Castronova, 2004) introduced the element of technology when describing virtual worlds as places worked by computers, which are designed to accommodate a large number of people.
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