Chapter 18
Instructional Design for Virtual Worlds:
Basic Principles for Learning Environments

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ABSTRACT

This paper gives an overview of the didactic elements relevant to foster learning in virtual worlds. The specific requirements of learning in virtual worlds are investigated in detail using the C3-model of didactic components. Following this model, the specifications of virtual worlds are illustrated with regard to the components "content", "communication" and "construction". The use of virtual worlds is often connected with the hope for stronger immersion, which is encouraged by the possibility of three-dimensionality and the representation of the learner by a virtual representative ("avatars"). However, learning-/teaching processes are not automatically improved by the use of virtual worlds. The possibilities offered by virtual worlds can only be honoured when a dedicated didactical concept is implemented. This means a complex composition process which has to take into consideration the specific features of virtual worlds.

INTRODUCTION

The introduction of new media technology for learning and teaching is frequently linked to hopes for "better" learning. However, previous experience has shown that many of these expectations regarding the "optimisation" of learning are doomed to be disappointing. Virtual worlds are showing quite a different trend: They are viewed with great scepticism as regards their use for teaching and learning. Nevertheless, this critical viewpoint offers the opportunity for a serious, systematic debate concerning its potential and limitations. Despite this scepticism, interest in virtual worlds for teaching and learning is rather large in schools, universities and advanced training institutions. This interest can be explained by the associated hope for new potentials of e-learning. The focus is on the possibilities for learners to create their own avatar, to

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explore the virtual world and to communicate and collaborate with other learners.

The following paper outlines the components that are relevant to designing meaningfull learning in virtual worlds from an educational point of view. To begin with, the term "virtual world" will be discussed. Then the framework of the C3-model as a tool for instructional design will be explained. The aim is to design immersive learning environments that tap into the full potential of virtual worlds. Finally, the paper looks ahead: It shows that increasingly the dividing line between real life and virtual worlds is blurring.

BACKGROUND

The ongoing technical developments in the area of virtual worlds and the increasing interest of education providers in the use of virtual worlds are accompanied by the question of how courses in virtual worlds can be designed in a way that is didactically meaningful and what kind of added value they offer compared to other means of e-learning.

The perspective of instructional design is that the medium should not only be used to "improve" teaching and learning, but also to (better) solve a certain educational problem or issue. It must be considered that the medium itself will not bring about "improved learning" (Kerres, 2001).

The question is raised as to what added value is associated with the use of virtual worlds and in which scenarios they could be used. Obviously, it does not make sense to merely transfer existing didactic media concepts and methods to virtual worlds.

Typically with the rise of each new media technology, the technical options for learning are investigated. The instructional design focus, however, looks at the principles and strategies relevant to structuring meaningful learning opportunities in the building virtual worlds. Here, the focus is not on the media technology as such or on evaluating "the" technology, but on the process of designing learning enviorments. For example, it is not sufficient to make learning material available in virtual worlds and to "put them onto the net". Learning environments in virtual worlds need to be purposefully planned and designed. The hope that the playful character of virtual worlds will be effective in itself is not grounded. If learners and teachers do not make use of learning opportunities in virtual worlds, their didactic benefit is minimal.

The quality of courses and e-learning environments offered on the internet depends on the quality of a didactical analysis, a thorough instructional design concept, its implementation and evaluation.

With regard to virtual worlds this, for example, means to analyse if learners have any experience with virtual worlds, which learning objectives shall be achieved, which instructional methods are suitable and how learners can be supported.

Currently, instead of a systematic debate on these didactical components of the instructional design process, the discussion focuses on the "general" potentials and limitations of virtual worlds in the teaching/learning context. The various and new possibilities of designing a 3D enviornment and options for integrating Web 2.0 are viewed as essential potentials (Müller & Leidl, 2007). Some virtual worlds offer the possibility to involve learners actively into the design – and learning process by letting them create and modify objects themselves (Cheal, 2007). Furthermore, processes and models can be stimulated, which would be very difficult to be carried out under real conditions (Müller & Leidl, 2007) (e. g. testing of business concepts, language training). Compared to other variants of e-learning, a stronger feeling of social presence and a more intensive "immersion" (Cheal, 2007; Joseph, 2007; The Horizon Report, 2007) (see chapter on immersion) can be expected by the interaction of human actors and between human actors and the physical artifacts in the virtual world.