Chapter 46
Exploring Educational Video Game Design: Meaning Potentials and Implications for Learning

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ABSTRACT

The aim of this chapter is to explore two educational video games as a repository for action and meaning-making. Rixdax and El Patron feature two different game genres and designs. Through a comparative analysis, it will be shown how these two games actually address very different learning goals and also seem to miss a crucial aspect of learning: reflective action. This chapter will investigate how the layout on the screen is composed and how knowledge is represented. To do so, six structuring factors introduced by Prensky (2001), some of the organizing principles of learning design developed by Selander (Selander, 2008a-b; 2009, Selander & Åkerfeldt, 2008) and the multimodal framework developed by Kress and van Leeuwen (Kress & van Leeuwen, 2006; Kress, 2010; van Leeuwen, 2005) are used. The chapter analyses the individual elements as semiotic resources in the educational video game and show how these elements are represented, especially from the points of view of information value, salience and framing, but also how the information is sequenced, the tempo of the games and how they accommodate meta-reflection by the users.

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INTRODUCTION

This chapter addresses two separate and wide research fields, learning in educational settings and video game design. To combine these two fields, we will focus on educational video games and view them as semiotic resources for learning, similar to textbooks as semiotic resources for learning in an educational setting. However, there are some unique aspects that belong to educational video games but do not belong to textbooks, such as the interaction that is possible in an educational video game and the fact that, depending on the user’s action, the game can unfold differently. Although educational video games are a rather new phenomenon in schools, the use of games in school is far from new. Moreno-Ger et al. (2009) state that games have been used in educational settings as long as they have existed. The question is not if students learn from games but what student can learn from using games. Most discussions concerning games and learning seem to be conducted on a rather general level. (Linderoth, 2008).

Video games as a learning resource in school present a challenge for the 21st century, not least since they encourage learners to do things differently compared to earlier (Sørensen, 2008). There seems to be a fear among teachers that video games take too much time from “real” teaching and learning. Video games are seen as activity that the students can play individually, without guidance from the teacher. School textbooks, on the other hand, have been designed as learning resources for schools, for a particular social practice suitable for both teaching and learning. Students acquire new knowledge defined by the curriculum but they also learn what is seen as necessary knowledge in the school context and how they should deal with questions in different knowledge domains. By using certain kinds of texts, teachers can also control what and how students learn in school (Selander, 2003). This, however, is no longer the case in many schools today. Digital media in general (like computers, mobile devices etc.) make it possible not only to store vast amounts of information but also to communicate and produce new information, which makes it more difficult for teachers to control both what resources the students use and communicative events in the classroom. For example the students occasionally use MSN, Facebook or similar to communicate with other peers which change the communication patterns and events in the classroom. If students can make a quick search on Google on their own computers, to find additional information, the lesson might unfold quite differently from what was planned by the teacher. In digital media such as smart-boards may still put the teacher in the centre (Jewitt, 2008).

Educational video games are yet another way to learn and to solve problems. To gain more knowledge about educational video games as resources for learning, we will focus on the game design of two educational games and their meaning potential and implications for learning: (1) Global Conflict, www.globalconflicts.eu; and (2) Rixdax, http://rixdax.riksdagen.se.

BACKGROUND

Educational Video Games Design

For the last two decades there has been extensive research on video games for learning (Dondlinger, 2007). Extensive research has been carried out and books have been written about game design (for example, Adams, 2010; Thompson, 2007; Bartle & Bateman, 2009), but there has been limited research on analysing the game design of educational video games in relation to learning. Here we will address some research that is relevant to our focus in this chapter.

There are many arguments claiming that games are good for learning (Gee, 2003, Shaffer, 2006, Squire, 2007), but the question “What is learnt
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