

Beyond Edutainment: Exploring the Educational Potential of Computer Games

By Simon Egenfeldt-Nielsen

ABSTRACT

Computer games have attracted much attention over the years, mostly attention of the less flattering kind. This has been true for computer games focused on entertainment, but also for what for years seemed a sure winner, edutainment. This dissertation's aim to be a modest contribution to understanding educational use of computer games by building a framework that goes beyond edutainment. A framework that goes beyond the limitations of edutainment, not relying on a narrow perception of computer games in education.

The first part of the dissertation outlines the background for building an inclusive and solid framework for educational use of computer games. Such a foundation includes a variety of quite different perspectives for example educational media and non-electronic games. It is concluded that educational use of computer remains strongly influenced by educational media leading to the domination of edutainment.

The second part takes up the challenges posed in part 1 looking to especially educational theory and computer games research to present alternatives. By drawing on previous research three generations of educational computer games are identified. The first generation is edutainment that perceives the use of computer games as a direct way to change behaviours through repeated action. The second generation puts the spotlight on the relation between computer game and player. Computer games become interesting because they are believed capable of offering a variety of ways to learn with varying degrees of difficulty. The third generation includes the context of computer games and how they facilitate learning environments with peer-collaboration, constructions of knowledge, new teacher role and a changed student role. These three generations all become part of the framework for educational use of computer games avoiding a narrow focus on a few popular elements.

In the third part the main empirical study is laid out with the purpose of examining the actual use of computer games in an educational setting from a 3rd generation perspective.

The empirical study was conducted at a Danish high-school involving 72 students and two teachers. The study examined the use of a commercial historical strategy game (*Europa Universalis II*) in a 2½ month history course where the computer game played a significant role. The empirical study aims at examining some key findings around the barriers for educational computer game use, the scepticism towards the historical understanding of computer games, the problems related to linking of experiences with computer games to other domains and the effectiveness of learning from computer games. It is found that we can benefit from looking at teaching with computer games at three levels: Appreciation, exploration and linking with each level having its own problems. Students progressed through these levels with the appreciation as a prerequisite for exploration and linking. The appreciation caused problems for many students as they did not have the necessary knowledge of history and computer games to identify the relevant elements in the game experience. When relevant elements were recognized students failed to explore due to distrust of the value of the game experiences. Finally the linking between the game experience and other areas rarely happened.

The last part presents the general framework for understanding educational use of computer games, where the ends from the three previous parts meet. The theory extends from an experiential learning approach, where concrete experiences are the starting point that can be transformed through reflection, instruction and active experimentation. In this process computer games provide rich concrete experience that can be manipulated in the game universe providing more handles for the student compared to other media. It is concluded that in ideal educational use of computer games the student is playing and constructing knowledge through interaction with the game universe. Slowly building on top of existing knowledge from previous experiences arising from inside the game universe and other spheres of life facilitated by instruction. It is an experience-based hermeneutic exploration in a safe rich environment, potentially scaffolding the student while maintaining student autonomy and ensuring a high emotional investment in the activity.