

The Use of Electronic Games in Distance Learning as a Tool for Teaching and Learning

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INTRODUCTION

Playing game is the basic nature of human beings. Though the concept of learning through game is not a new one, it is generally acknowledged that the earliest educational games and simulations were usually war games (Gredler, 1996). Although electronic games have a very short history, they remain a vital force in entertainment. The earliest electronic game called *Spacewar*, was developed by a young graduate student named Steve Russell in 1961 on a PDP-11 computer at Massachusetts Institute of Technology (Herz, 2001). The *Spacewar* computer game is generally recognized as the first of the “shoot-’em’ up” game genre. Video games were introduced as a commercial entertainment medium in the early 1980’s. The popularity of electronic games specially increased in entertainment sector during the 1990s, due to fast diffusion of the personal computers all over the world.

Electronic games are rapidly emerging products, changing the way we play, think, and learn. They are more than just kids’ toys. Electronic games offer extraordinary opportunities to transform when, where, and how instructors might create new and more powerful ways to teach in schools, communities, and workplaces. While new information and communication technolo-

gies are exciting developments in distance education, the potential of electronic gaming in distance education as a tool for teaching and learning has not been fully aware of by educators. However, recent studies show that electronic games are widely used as an educational tool in schools and becoming more a part of students’ and adults’ social lives. There is a tendency for people to spend a growing amount of time playing games, which plays a compensatory role whenever there is a lack of stimulation and challenge (Eglesz, Fekete, Kiss, & Izsó, 2005).

Growing use of the Internet and computers by educators and students around the world has been rapidly growing. The introduction of both the Internet and computers has vastly changed education. But the value of computers increases dramatically when they are connected to each other. The Internet and computers are more suitable for educational use of electronic based gaming. However, the potential for electronic games to be valuable learning tools in distance teaching and learning still has not been fully met. Many teachers now look at electronic games as an opportunity to improve outcomes of teaching by seizing the intrinsic motivational aspects of electronic gaming.

Recently, educators have become increasingly interested in the potential of games as teaching and

Table 1. Games Forms

Games	
Electronic Games	Non-Electronic Games
Computer (PC) Games Mobile Games Massively Multiplayer Online Games Video Games	Card Games Board Games Role Playing Games Etc.

learning tools. Therefore, the purpose of this study is to provide guidance to distance educators searching for ways to use the electronic games more effectively in their practice and give an overview of pedagogical approaches to electronics games in distance teaching and learning. Furthermore, a comprehensive review of research literature on electronic games, basic definitions, and genres of electronic games are provided.

There are different forms of games in terms of the technology used to play games and the number of players. Table 1 shows the game forms. The last two decades have witnessed that information and communication technologies have made a significant impact on development of electronic games. The term “electronic game” in this article refers to computer based games.

BACKGROUND

Electronic Games

Electronic games have a programmed artificial environment by which the student can play, experiment and learn from mistakes and feedback (Nagle, 2001). The post-90s generation has grown up with computers and electronic games. The 21st century generations are likely to get bored with traditional teaching and learning strategies. Prensky (2001) asserts that educators must now deal with the “Games Generation” - which he labels “Digital Natives.” He argues that “Digital Natives” have grown up with digital technology and are competent with its applications (Prensky, 2001a). Electronic games are increasingly becoming an important part of human’s daily life. “The Games Generation has been raised with, and become accustomed to, the worldwide connectedness of email, broadcast messages, bulletin boards, user groups, chat, multiplayer games, and instant messaging” (Prensky, 2001, p. 57).

Electronic games in educational context are rule based choices, strategies and plays that put learning outcomes, objective and goals into action within an engaging, motivating, interactive context within a generally playful atmosphere. They can provoke interest for learning and make a dull subject fun. They are well suited for a learning content that requires practice, interactivity, instant feedback, and engagement. However, to sustain engagement throughout the learning progress and ensure effective learning, appropriate content and

design is vital for the potential efficacy of electronic game-based learning.

Basic Definitions

Education through entertainment, often referred *Edutainment*, was popular during the post 90s with increasing acceptance of computers in schools (Michael & Chen, 2006). The purpose of edutainment is to teach while entertaining the learner. The initial objective of any educational game should be a learning outcome. There are many definitions of game in the literature. General definition of game is as rule-based play (Salen & Zimmerman, 2002; Suits, 1978). Shepherd (2001) defines a game as “*an activity with a goal and rules, in which the learner competes against others, real or imaginary, or to better their own, previous attainments.*” (p. 2). For example, games have been defined “A game: seen as a subset of both play and fun” (Prensky, 2001, p. 118) or “A game is a set of activities involving one or more players. It has goals, constraints, payoffs, and consequences. A game is rule-guided and artificial in some respects. Finally, a game involves some aspect of competition, even if that competition is with oneself” (p.159). Games are distinguished from play. While play is a free-form of entertainment, games are rule-based. The rules form the activity, and make it possible to repeat it.

In addition to “Edutainment”, the terminology of educational games also called “*Serious Game*”. It is “a game in which education (in its various forms) is the primary goal, rather than entertainment” (Michael & Chen, 2006). Game based learning is considered more or less the same as serious games (Corti, 2006). Serious games include all aspects of teaching, training, and learning. Contributors to Wikipedia.org define game-based learning (GBL) as “a branch of serious games that deals with applications that have defined learning outcomes” (Wikipedia, 2007). de Feritas (2006) defines learning games as “Applications using the characteristics of video and computer games to create engaging and immersive learning experiences for delivering specified learning goals, outcomes and *experiences*.” (de Feritas, 2006, p. 9). Electronic game or digital game is defined as “a software program in which one or more players make decisions through the control of game objects and resources, in pursuit of a goal” (Overmars, 2007). Electronic Games encompasses computer games, mobile games, online

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