

Electronic Games in and out of School

Jeffrey Goldstein

University of Utrecht, The Netherlands

Abstract

This paper summarizes selected studies on uses and applications of electronic games and toys in learning environments, including school, home and playground. Computer and video games, both commercially available games and those developed for specific educational goals, have been used successfully to teach a broad range of skills to children, adults and the elderly. Children use modern 'smart toys' in ways that demonstrate competence, communication and social skills. Schools have been slow to adopt computers and related technologies, often overlooking the educational potential of children's fascination with popular culture. Four objections to using electronic games in the classroom are reviewed: that technological toys limit the child's imagination, and may lead to addiction, social isolation and aggressive behavior. There is little consistent evidence to support these positions. Children seem to use games to make and maintain friends, to experience competence, and to regulate emotional and physical states. Studies of the presumed harmful effects of violent electronic games rarely consider how and why people play them.

[Key Words] electronic games, computer, video games, toys

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Correspondence and requests for reprints should be sent to Jeffrey Goldstein, Department of Social & Organizational Psychology, Heidelberglaan 1 University of Utrecht 3508 TC Utrecht, The Netherlands

E-mail: J.Goldstein@fss.uu.nl

School is boring to many young people. Often the things children are most enthusiastic about are the very things that are forbidden or ignored at school - television, computer games, toys such as Barbie and Power Rangers, and for older children, popular music, professional sports, and fashion. Although these are largely derived from popular commercial culture, the enthusiasm with which children embrace them should be understood by parents and teachers, who can use the children's interest and expertise to their advantage.

A generation of youth is growing up with the internet, chatrooms, email, PDAs (personal digital assistants), increasingly multi-tasking mobile telephones, and electronic circuitry built into toys and, of course, computer games. Today's young pupils may differ from the pre-digital generation in ways so fundamental as to require new means of learning and teaching. Computer games, electronic toys, and popular culture are both potential topics of study and a means to learning (Gee, 2003; Linderoth, Lindstrom, & Alexandersson, 2004; Papert, 1993).

GAME-BASED EDUCATION

Game-based education is fun, deeply involving, has clear goals, and is interactive. Games provide continuous feedback and outcomes. Games are self-paced, allowing each student to learn at a comfortable tempo. Games are creative, rewarding and enriching - many of the things that traditional forms of education are not. Game-based education can simulate many aspects of the real world, turning abstract ideas into applications and practice (Prensky, 2001).

Without motivation there is no learning; in game-based education, the children are usually eager to get started. They also tend to help one another, which develops communication and social skills, and solidifies the students' own knowledge. The cognitive processes involved in play are similar to those involved in learning: motivation, meaning, repetition, self-regulation, and higher-order information processing. According to Allen (2004), as children play with various interactive toys, they may improve motor skills, counting and cognitive skills, reasoning about physical objects, social skills, and self-confidence.