

## Chapter 1.5

# Distinctions Between Games and Learning: A Review of Current Literature on Games in Education

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### ABSTRACT

Serious games are digital games designed for purposes other than pure entertainment. This category includes educational games but it also includes a great deal more. A field that was unheard of until Ben Sawyer referred to it as Serious Games in late 2002 (Sawyer, 2003) has already grown so large that one can only hope to keep track of a very small part of it. The time is rapidly coming to an end when literature surveys of even one branch of Serious Games can be considered comprehensive. This chapter will examine the current state of the part of the serious games discipline that intersects

with formal education, with a particular focus on design. The chapter begins broadly by looking at games in order to define the term serious game but then narrows to a specific focus on games for education. In this way, it provides an educational context for games as learning objects, distinguishes between traditional, (i.e. non-digital; Murray, 1998) and digital games, and classifies games for education as a subcategory of serious games while at the same time still being part of a larger group of interactive digital applications.

*Anyone whomakes a distinction between games and learning doesn't know the first thing about either.*  
—Marshall McLuhan

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## INTRODUCTION

Serious games are digital games designed for purposes other than pure entertainment. This includes educational games but also a great deal more, such as Games for Health, Games for Change, Military Games, Games for Politics, Advergaming, and Exergaming. While learning plays a role in many of these serious games ‘genres’ it is not necessarily the primary role and it most certainly is not the only one. This volume focuses on serious games whose primary purpose is education. The study of games for education, even traditional games designed for or used in that context, has no broadly accepted research or literature base, and so existing ones must be extended in new ways. Learning through play - which is closely related, but still not the same - has been given a certain amount of attention, at least in the context of early childhood development, and some of the noteworthy celebrities involved in the study of play and learning, such as Montessori, Bruner, and Papert, have influenced scholarship on games in education. The contributions of Fröbel (1912), and Piaget (1951) are also influential. This foundational work in play has helped to inform current work in games, but in spite of the fact that there are a growing number of studies involving specific games used in educational settings, as well as studies of games in specific contexts (like sports, math skills, early literacy, some areas of science), there exists no general “theory of gaming” as applied to learning, let alone a “theory of videogames.” This implies that this author and others are charting what amounts to new territory, even in the mapping of the terrain itself. The connections made are almost all going to be new ones. This chapter is an examination of the current ‘state of the field’ of digital games in formal education. Within this subset of serious games, the focus of this review is on literature written over the last decade, with a particular emphasis on game design.

Alan Kay said that “technology is anything that was invented after you were born” (the actual

wording of the quote varies from source to source, e.g., see Ceer, 2006, p. 86). A distinct challenge in the study of serious games generally and games for education specifically is that research related to modern digital games can go out of date very quickly because digital game technology is evolving at breakneck speeds. The expectations and capabilities of our learners are changing alongside those technological advances as does (or at least should) our understanding of its potential. For the most part, comparing digital games of the 1980s and early 1990s to those of today is akin to comparing a Model-T Ford to a SmartCar. One implication of this is that conclusions based on studies conducted before about 1999 may no longer apply to current circumstances. This also means that many of the works on simulations and digital games published in the last century are of limited relevance.

## SETTING THE SCENE

### Definitions: What Is a Game?

*“Most controversies would soon be ended, if those engaged in them would first accurately define their terms, and then adhere to their definitions.”*  
—Tryon Edwards (Berkeley, 1853, p. 51)

Is a game still a game when it is not being played, and can anything become a game if we play with it? Some have argued that we cannot categorize any game because, despite its designed intent, a game is almost entirely dependent on the intentions of the user at the time of use (Leigh, 2003). From a design perspective, this position is not useful. A working definition, however flawed, is essential to designing a game (how can we know what to design if we have no concept of our goal?). The goal of this section is to provide the context for an overview of the literature on digital games in education; what follows here are the highlights of just a few of the more popular definitions.

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