

Chapter 44

Practical Applications of Serious Games in Education

Helen Axe
PIXELearning, UK

Helen Routledge
PIXELearning, UK

ABSTRACT

There exists a growing body of evidence which supports the use of serious games in education: highlighting increased motivation, engagement, and comprehension among users. However a lack of awareness and understanding of how these games can be used in the classroom is a key barrier to adoption. This chapter will share the success stories and lessons learned from the use of serious games, both in formal education and informal education with the goal to create an increased awareness and understanding among educationalists leading to the creation of a new ecology of learning, fostering collaboration, engagement, and innovation.

INTRODUCTION

The majority of schooling in the 21st Century is grounded in the traditional methodology of drill and skill and lecture and recite, as the foundation for learning. The use of games in education is still rather a radical concept for many and serious games have, in the main, struggled to make significant impact; it has been more of a trickle than a flood. However an increasing number of

educationalists are seeing the potential that games have to offer and these trail blazers are using games in incredibly innovative and imaginative ways in both mainstream and informal education. However it can be argued that this slow uptake is not due to a lack of interest, or a dismissal of the possibilities, but rather a lack of awareness of the potential serious games have to offer the world of education. Most teachers do not have a high level of familiarity with games, and their scepticism is often based on their personal experience, or more accurately, lack of experience with games. It can

DOI: 10.4018/978-1-60960-495-0.ch044

therefore be difficult to even begin a discussion or investigation into their potential (Oblinger, 2006). This lack of awareness can in part be attributed to the deficiency of tangible evidence to support the effectiveness of games in education (Shelton, 2009).

Games can provide so many opportunities for education and learning leading to innovative teachers embracing this potential over recent years. What is missing however, is common communities of practice to help build a shared understanding of how best to use serious games in the classroom. In most cases, the research does not cover how the serious game was delivered to the students and what instructional strategies were implemented. This is key information that will expedite the uptake of serious games in education.

Awareness is growing, the wheel does not require reinvention; many teachers have embraced serious games, each with a different aim, and strategy, and each building upon the knowledge of their predecessors, but until we truly understand how to use these tools and the potential they have for education, adoption will be limited. Douglas Adams eloquently described this phenomenon...

everything that's already in the world when you're born is just normal; anything that gets invented after you're 30 is against the natural order of things & the beginning of the end of civilisation as we know it until it's been around for about 10 years when it gradually turns out to be alright really. Apply this to movies, rock music, TV, word processors & mobile phones to work out how old you are. Douglas Adams (1999).

THE STATE OF PLAY

With video games designed to appeal to young children from the age of 3 years old, with 87% of 8-11's and 88% of 12-15's regularly playing games on a console at home (Ofcom, 2008) and with 63% of parents (in the United States of America)

believing games are a positive part of their children's lives (ESA Industry Facts, 2009) it is no wonder that video games have become one of the most popular past times of this generation. With computer games now seemingly engrained in our way of life, computer games are as much a part of the media culture young people are growing up in as television, film and music (Williamson, 2009).

The technological advances which young people have access to today, did not exist even as recently as 10 years ago, and in the case of social networking wasn't mainstream until just 5 years ago. The way in which young people communicate, share, make friends, and learn is changing. Technology is beginning to have an effect on the classroom structure, however most institutions are still unable to make full use of the benefits it can bring. All too often the internet is restricted, the PC's are of a low calibre, and as Prensky (2001) notes kids have to 'power down' when they come to class. Every young person in the education system today has grown up in a world where games are a fact of life (Chatfield, 2010) yet these tools are not actively embraced by the school system, still entrenched, in a 19th Century Factory model of education (Shaffer, 2006 and Klopfer, Osterweil, and Salen, 2009). Some go so far as to argue that computers have also changed the way in which we work; job applicants are often required to display non routine ways of thinking, adaptability, and innovation. Shilton and Whiley (2009) argue that games provide an opportunity to learn in ways that are more authentic than current school practices and therefore will prepare students more appropriately for when they leave school.

There is growing qualitative and quantitative evidence that video games can be more than a casual past time. Video games can offer a whole host of benefits to their users, such as parallel processing, being able to determine relevancy and non-linear exploration amongst others (Jenkins, Purushotma, Clinton, et al, 2006 as cited Klopfer, Osterweil, Groff, and Haas, 2009). Nevertheless,

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