

Chapter 22

The Use of Smart Toys in Learning Games

Peter A. Smith

University of Central Florida, USA

Shelly Welch

University of Central Florida, USA

ABSTRACT

The use of toys and videogames in learning is becoming more and more established as mediums, however, the interaction between smart toys and videogames for learning is a wholly new endeavor. With the advent of new games like Activision's Skylanders, and Disney Infinity, kids are being introduced to a new level of interaction between the real and virtual. The ability to create stories in the virtual and relive them in the real, or vice versa, is changing the way kids are playing. Applying these technologies to learning games is the next logical step in the advancement of learning games for kids. This chapter will explore what smart toys are, how they are being used, and future applications of the technology.

INTRODUCTION

While there have been a few experiments with combining toys and videogames in learning, new technologies like NFC and RFID have supercharged the link between toys and games. These new Smart Toy powered Video Games have captured the attention of the youth with creative interactions that were not previously possible. In 2014, three out of every five accessory purchase was a Smart Toy from either *Disney Infinity* or *Skylanders* games, with *Skylanders* alone grossing over \$2 Billion between 2011 and 2014 (CNET, 2014). These toys have captured the hearts and

minds of players and are gaining more and more floor space in videogame stores. The magic behind these toys is simply the ability to play with the same characters inside and outside of the videogames. Kids are having experiences with characters in a videogame and then reliving them in the real world when they play with their toys. Research on toys in games and their potential benefit in P-12 education is paving the way for higher levels of interaction between learning games and learners. Reviewing the current use of games and toys for consumers and educators alike is laying the ground work for the ways in which Smart Toys are becoming pervasive games, blurring the lines

DOI: 10.4018/978-1-4666-9629-7.ch022

between virtual game worlds and physical play and already containing the potential for informal learning with toys in games.

Blast Theory and Mixed Reality Lab at the University of Nottingham, makers of a location-aware game called *Can You See Me Now* (CYSMN) posed an interesting question, “In what ways can we talk about intimacy in the electronic realm” (Blast Theory, 2014). . While this game primarily utilized mobile GPS and WiFi technology, they created an engaging experience that blended traditional and pervasive computer gaming. In their research, they explored the level of intimacy, or an emotional experience, between Smart Toys and the children using games like *Disney Infinity*. When playing in these worlds it does seem clear that this emotional experience, or intimacy, have an effect on their gameplay and interactions of players with the real world.

The key to understanding the users’ experience may be heavily based on the users’ state of mind when they play these games. In an article by McGonigal (2003), she spoke about players of pervasive games, describing concepts such as “willful suspension of disbelief” and the “Pinocchio Effect.” She went on to state “pervasive games, at their heart, are the dream of the virtual to be real ... [and] ... the dream of the players for the real to be virtual” (McGonigal, 2003). So perhaps it is not merely the game that is invoking an emotional experience but a combination of immersive pervasive gameplay as well as the users’ “conscious decision to prolong the pleasures of the play experience and to apply the skills acquired in gaming to real life.” (McGonigal, 2003)

BACKGROUND: DEFINING TOYS IN GAMES

While toys can be used with games in many ways, the most interesting new developments are with Smart and Pervasive Toys. Toys are changing the gameplay experience for players both in the vir-

tual world and the physical world. It is important to understand the types of toys and games that populate this portion of the market.

Pervasive Toys

So, to understand exactly how toys in games interact with their users in the real world, first look to pervasive games. Research by Magerkurth et al, defines pervasive games as ubiquitous in nature and “no longer confined to the virtual domain of the computer, but integrate the physical and social aspects of the real world” (2005). The authors go on to describe an extensive array of pervasive gaming genres, including Smart Toys, Augmented Table Top Games, Location-Aware Games, and Augmented Reality (AR). The key component in all of these types of games seems to be the increase in physical activity and social interaction combined with the real world to create a ubiquitous pervasive game. While *Disney Infinity* seems to land in the category of Smart Toys, it does use a unique combination of cross-platform gaming using Smart Toys that cross from the physical realm to the virtual world. This brings up ideas like seamless interaction, which seeks to integrate technology into the users’ daily lives (Magerkurth et al., 2005). The ubiquitous nature of these Smart Toys tends towards seamless interaction for its users. Children mentally see their favorite Smart Toys as magical characters that both share a space on their bedroom shelves, but also play with them in the virtual spaces of their games.

Smart Toys

Smart Toys are toys that interact with videogames in interesting and often electronic ways. The most common example of these is *Skylanders*. This is a series of games developed by Activision and has sold billions of dollars in toys. The toys in *Skylanders* contain Near Field Communication (NFC) chips that allow them to communicate with the game. Players are able to put their toy on a “portal

9 more pages are available in the full version of this document, which may be purchased using the "Add to Cart" button on the publisher's webpage:

www.igi-global.com/chapter/the-use-of-smart-toys-in-learning-games/139820

Related Content

Engaging the Un-Engageable

John Carrand Peter Blanchfield (2011). *Handbook of Research on Improving Learning and Motivation through Educational Games: Multidisciplinary Approaches* (pp. 633-657).

www.irma-international.org/chapter/engaging-engageable/52516

Playing Games in School: Video Games and Simulations for Primary and Secondary Education

Albert D. Ritzhaupt, Chris Frey, Nate Polingand Margeaux C. Johnson (2012). *International Journal of Gaming and Computer-Mediated Simulations* (pp. 84-88).

www.irma-international.org/article/playing-games-school/67553

Digital Games and Violence

Arzu Kalafat Çat (2019). *Handbook of Research on Children's Consumption of Digital Media* (pp. 258-275).

www.irma-international.org/chapter/digital-games-and-violence/207872

Relationships Among Violent and Non-Violent Video Games, Anxiety, Self-Esteem, and Aggression in Female and Male Gamers

Cristina Cabras, Maria Laura Cubaddaand Cristina Sechi (2019). *International Journal of Gaming and Computer-Mediated Simulations* (pp. 15-37).

www.irma-international.org/article/relationships-among-violent-and-non-violent-video-games-anxiety-self-esteem-and-aggression-in-female-and-male-gamers/242917

(Self-) Educational Effects of Computer Gaming Cultures

Johannes Fromme, Benjamin Jörissenand Alexander Unger (2009). *Handbook of Research on Effective Electronic Gaming in Education* (pp. 757-775).

www.irma-international.org/chapter/self-educational-effects-computer-gaming/20118