Chapter 5
A Proposed Framework for Studying Educational Virtual Worlds

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ABSTRACT

There are several theories about entertainment and education. Some, like Caillois’ Play Domains, categorize broad domains of play. Others, like Gardner’s Multiple Intelligences, categorize narrowly defined types of intelligences. To the author’s knowledge however, there has never been a mix of entertainment and education theories in a single conceptual framework. In this chapter, a framework will be systematically built called The Education and Entertainment (EE) Grid. This grid will showcase how entertainment theories from Robert Caillois and Richard Bartle can be applied to educational contexts and how educational theories from Benjamin Bloom and Howard Gardner can be applied to entertainment contexts. A wide spectrum of entertainment and education theories will first be reviewed and special attention will be given to the four theories comprising the EE Grid. Two individual grids, the ENT and EDU Grids, will then be built as a preliminary step to constructing the first version of the EE Grid. Once built, a comparison with other similar frameworks in the field of game design will be discussed. Finally, a few hypothetical examples of how the EE Grid could be used will be presented.

INTRODUCTION

Over the centuries and across species, play has always been used as a means of education. The vigorous romping of young puppies is teaching them how to socialize and hunt. A chess game between two nobles was a means of teaching strategy and warfare in ancient times. However as the notion of a frivolous childhood took root in modern society, that age and its play were likewise considered frivolous. As such, play lost its educational context and was relegated purely to entertainment within the nursery or playground. However in the past 20 years, with the rise of the cultural acceptance of video games, there has been much work done in restoring play to the classroom such as the Serious Games movement (Michael & Chen, 2006) and the New Literacy Studies (Gee, 2007).
The classroom is itself not devoid of radical change. In the last five years, we have seen the rise of the pure online university and thus the pure online class (Rademacher, 2009a). These online classes set up virtual communities of learning, every bit as relevant as a real community of learning. Countless students are now engaging in purely virtual education in fields such as education, nursing, and law. This new style of teaching is revolutionizing how students are reached as well as the very concept of what a classroom is. These revolutions are also playing out in the area of virtual worlds. In a purely entertainment context, the virtual world is known as a Massively Multiplayer Online Game (MMOG). Hundreds of these games are played by millions of people worldwide all of whom can interact with each other simultaneously within their game world. Several books have already commented on the educational value of these worlds and the people that inhabit them (Aldrich, 2005; Castronova, 2006; Guest, 2008). As will be shown, aside from studies within current commercial worlds, there are also many worlds specifically built for education and research.

It is the philosophy of this chapter to treat education and entertainment as complementary principles and not decree one to be superior to the other; the play mentality is assumed to be related to the learning mentality and vice versa. To examine these ideas, research and theory from the educational and entertainment sectors will be reviewed. For each sector, two theories will be chosen and then presented in the form of a grid, an ENT Grid and an EDU Grid. Once each grid’s independent message has been elucidated, they will be put together into one large grid. This large grid is the centrepiece of the chapter. Known as the Entertainment and Education (EE) Grid, this unique presentation of entertainment and education theories will help us better understand and use these theories by organizing them within and without their native sectors. Finally, how this grid compares to other game frameworks, how it might be used, and how it will be tested in an upcoming survey will be discussed.

While this research is grounded in the realm of virtual worlds, it may be possible to extrapolate these results to single player or off-line games. As well, while the educational focus is on the subject of physics due to the author’s familiarity with the subject, it should be possible to extrapolate these results to other subjects. While these are important topics for discussion, given the space limitations of the chapter these ideas will not be openly explored here.

**VIRTUAL WORLD REVIEW**

Viewing a timeline of online entertainment (Koster, 2002) shows its start with Tolkien in 1937 up to Disney’s Toontown™ in 2002. And the history of distance education (Distance Education Timeline, 2000; Online Learning History, 2008) shows its beginnings with teaching by mail in 19th century England leading to its modern incarnation with e-Learning in the 21st. With such a rich history, it will be important to explicitly define the space that will be studied. Richard Bartle (2003) defines a Virtual World (VW) by three criteria: an environment simulated by a computer, that is shared by several players (a.k.a. avatars), and that continues to exist and develop internally even when there are no players in the world (persistent). Based on his definition, for this chapter a Virtual World is defined as 1) an environment and 2) a community 3) inhabited by avatars and 3) implemented through the Internet. Note that persistence is not part of this definition. This means that there are persistent VWs (e.g., online role playing games) and non-persistent VWs (e.g., online first person shooters). With this in mind, we will focus on the MMOG as an example of a persistent VW and the Online Classroom as an example of a non-persistent VW.

The MMOG is responsible for bringing VWs to the cultural foreground. With games like World
The Learning Impact of Violent Video Games
Alice Ireland and Nathaniel Payne (2010). Educational Gameplay and Simulation Environments: Case Studies and Lessons Learned (pp. 312-325).
www.igi-global.com/chapter/learning-impact-violent-video-games/40890?camid=4v1a

Muscle Activation during Exergame Playing
Pooya Soltani and João Paulo Vilas-Boas (2016). Handbook of Research on Holistic Perspectives in Gamification for Clinical Practice (pp. 312-341).
www.igi-global.com/chapter/muscle-activation-during-exergame-playing/137835?camid=4v1a

Computer-Generated Three-Dimensional Training Environments: The Simulation, User, and Problem-Based Learning (SUPL) Approach
www.igi-global.com/article/computer-generated-three-dimensional-training/47085?camid=4v1a

Strategies to Teach Game Development Across Age Groups
www.igi-global.com/article/strategies-teach-game-development-across/54349?camid=4v1a