Chapter 12
Designing Curricular Games

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ABSTRACT

Most teachers only dream of their students spending the amount of motivation, attention, passion, and critical thinking on their classes that some do playing video games. Many teachers have thought “How can I compete with that?” as they confiscate a hand-held gaming device from a student. However, more and more teachers are incorporating video games into their curriculum, instead of banning them. This chapter argues that it is not just video games that can transform teaching, video game techniques can as well. By using video game design principles such as game stories and quests, teachers can restructure their teaching so students do not just learn the curriculum, they experience it. This chapter explores the research on using game-based teaching and learning with the Next Generation including how game-based teaching can be used to achieve 21st century goals as outlined by business leaders within 21st century educational constraints.

INTRODUCTION

The world is changing and with it, so are the people. Or maybe, the people are changing and with that, so is the world. Either way, people work differently, people play differently, and people learn differently than they did in the past. No longer do we have businesses structured like trees—vertical hierarchies with a centralized authority where commands come down from the top. Instead of being arboREAL, business models are becoming more and more rhizomatic—a system of connecting nodes where authority is diffuse as ad hoc groups from around the world form to achieve specific tasks, what Friedman (2007) calls “horizontal workflows”. Play, on the other hand, used to be ad hoc neighborhood kids coming together to create their own games without adult interference or oversight. Now adults manage play—that is until kids start playing video games on the internet where ad hoc guilds form with players of all ages from across the globe. Instead of consuming pre-digested information in a linear, top-down fashion with teachers and textbooks as the only authorities, people now learn by making sense of information from a variety of sources, albeit mediated by our “filter bubble” (Pariser, 2012), and by producing products,
getting feedback, and getting better (Jenkins, 2009). Working, playing, and learning have become more ad hoc and more web-like, requiring a different set of skills in order to synthesize and produce in this age of information.

While working, playing, and learning have changed, our schools essentially remain the same. Sure, there may be a cart full of chromebooks here and there and a SMARTBoard in every classroom, but those chromebooks too often are used as digital worksheets and the SMARTBoard as either a television or a blackboard. As Resnick pointed out in 1987, but it still resonates today:

As long as school focuses mainly on individual forms of competence, on tool-free performance, and on decontextualized skills, educating people to be good learners in school settings alone may not be sufficient to help them become strong out-of-school learners. (quoted in Putnam & Borko, 2000, p. 5)

How can our schools catch up so that the next generation of students is better prepared for the next generation of work? This chapter explores one way of doing so, by tapping into the next generation’s play—that of video games—in order to capitalize on how the next generation learns.

BACKGROUND

While we cannot predict what the world of work will look like for the next generation of students, we can safely assume it will require characteristics more and more in-demand today: flexibility, adaptability, collaboration, communication, cross-cultural competence, and innovation (Partnership for 21st Century Skills, 2002). Unlike past expectations for factory work where each person learned a specialized skill, now workers are expected to learn, unlearn, and relearn; make connections across a variety of disparate fields; and have a sense of the whole and its parts, how they all work together, and how a change in one part can affect the whole (Friedman, 2007). Wagner (2008) interviewed a number of business leaders and concluded that the consensus was workers needed the following skills: “critical thinking and problem solving”, “collaboration and leadership”, “agility and adaptability”, “initiative and entrepreneurialism”, “effective oral and written communication”, “accessing and analyzing information”, and “curiosity and imagination”. However, by and large schools in the United States are not conducive to producing such qualities when the focus for the past fifteen years, at least at the federal and state levels, has been on standardized testing. As Shute (2011) points out, “Learning and succeeding in a complex and dynamic world is not easily measured by multiple-choice responses on a simple knowledge test” (p. 506). By and large, schools in the United States with their mandated accountability and subsequent narrowing of the curriculum are not preparing students for the world of work they will likely face.

The world of play and entertainment has changed to become more complex as well. Johnson (2005) traces changes in the world of advertising (from one long continuous shot to a rapid-fire bombardment of images), in the world of television (from one chronological plot to multiple subplots with flashbacks and flashforwards and complex character relationships), and in the world of video games (from hitting a ball with a paddle to immersive branching stories with complex problem-solving challenges). These changes in work and play change the way people process and produce information. As neuroscientists say, “Neurons that fire together, wire together” (Doidge, 2007). In other words, experiences shape the brain. As Johnson (2005) points out, there are a multitude of contributions to these changes in thinking. One source is video games (Prensky, 2001b). While statistics vary from 6.3 hours a week (Aamouth,
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