Chapter 54
Employing Co–Design in the Video Game Design Process

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ABSTRACT

Innovative and engaging video games can be created if the target audience is included in the design process. Co-design is the process of working with your intended audience as colleagues in the design of technology. Co-design requires techniques that bring together designers in a way to create new technologies. New design techniques are developed to be used in real-world situations, but they require refinement through their own use. Video games offer technique designers an abundant source of material to design and refine techniques in real-world scenarios. This chapter discusses co-design, and the use of co-design techniques in the design of a serious video game to explore history, to help children be more environmentally minded, and a virtual world that reinforces positive social behavior.

INTRODUCTION

Video games are powerful tools for children. They allow young players to take on roles and experience places and times in ways that could not happen in real life. Video games also offer opportunities for learning by providing situations and experiences that require epistemic knowledge in order to succeed.

Video games can also provide design researchers with opportunities to develop and refine cooperative design techniques. Cooperative design, or co-design, is the process of working with your intended audience as colleagues in the design of technology. Co-design requires techniques that bring together designers in a way to create new technologies. New techniques are designed and developed to be used in real-world situations, but require refinement through their own use. Video games offer technique designers an abundant

source of material to design and refine these techniques in real-world scenarios.

This chapter will discuss co-design, the use and refinement of co-design techniques in the design of serious video games to explore history, to help children be more environmentally minded, and a virtual world that reinforces positive social behavior.

We have explored the use of these techniques through several game prototypes including a time travel game, a game that requires children to generate electricity, and a socially equitable virtual world. In this chapter, we will introduce these games and describe the use and refinement of techniques used with children in the co-design process.

BACKGROUND

The educational media industry has seen a decline from its high point in the late-nineties. The reason for the decline of traditional media (CD-ROMS) has been the introduction of "free" media on the Web and the elimination of shelf-space from retailers. As one author wrote: "it's like a forest fire has burned through, making the scorched earth ready for future growth," (Richtel, 2005). With the implementation of No Child Left Behind and the popularity of charter schools and home schooling, the educational software market is in a good position to rebound. Even though schools have been the same since the eighteenth-century, learners have evolved into technology-savvy, digital natives (Prensky, 2003). Getting kids interested in learning seems to have become more difficult over the years as technologies like iPhones, computers, and video games become more prevalent in households.

One way to get children interested in learning is to develop new technologies that promote educational experiences while still being enjoyable. How do we do that? How can we know what we're creating will be enjoyable to children?

There has been an evolution of qualitative research methods in the field of children and human-computer interaction. In the 1980's, researchers took a cue from ethnographers by studying and observing technology users because "Designers and developers needed a way of getting a firsthand view of the on-the-ground realities" (Blomberg, Burrell, & Guest, 2002). As user research continued, the designers and developers began using members of the target audience, children, as technology testers of new products (Druin, 2002). Technology developers started to include children as informants in the design of new technology. For example, children provide insight into what difficulties they may have with technology, the preferred way to see an interface, or motivational factors (Scaife, Rogers, Aldrich, & Davies, 1997). A more inclusive model of working with children in the design of new technologies is Cooperative Inquiry.

Cooperative Inquiry is a way for inter-generational teams to design technologies using iterative, low-tech and high-tech prototyping. Cooperative inquiry has been used in the design of children's technologies for over a decade and relies on adults and children working together as design partners to create low-tech prototypes (Druin, 1999). These prototypes are redesigned iteratively and usually increase in technological sophistication or focus at each iteration. Prototypes then receive feedback from the design team and the iterative cycle continues. Cooperative inquiry is different from informant design because, in informant design, the children are only consulted on occasion and "ultimately adults are still in charge" (Druin, 2002, p. 18). In cooperative inquiry, the children participate in the design of the technology throughout its life cycle.

Several design techniques are used in cooperative inquiry. Techniques are processes that design teams can participate in that aid in creative expression and requirement elicitation. These techniques are almost always collaborative in

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