

## Chapter 23

# She Designs Therefore She Is?

## Evolving Understandings of Video Game Design

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### ABSTRACT

*Girls and women play video games in equal number to boys, yet they continue to be under-represented in the video game industry. The goal of this chapter is to examine initiatives that encourage gender equality in video game design. This chapter argues that the process of becoming a video game designer may have the potential to shift girls' notions of identity. Drawing on research on girls and video game design, as well as analyses of informal programs that teach girls video game design, this chapter emphasizes the intersection of design and identity. This chapter offers directions and recommendations for future research, including the need for expanded understandings of the cultural and democratic benefits of video game design for girls.*

### INTRODUCTION

Free and open source software, such as Alice and Scratch, have arguably democratized video game design, making it more accessible to a broader and more diverse group of designers. This shift in the sources of video game design has opened up definitions of what constitutes a video game. Different aesthetics, different types of games, and different character representations are all part of this shift.

Despite the shift in video game design production, there continues to be persistent gender inequalities within the video game industry. Girls and women play video games in equal numbers to boys and men, yet they are under-represented in the video game industry (Entertainment Software Association, 2015). Currently, little more than ten percent of video game designers are women. Contemporary controversies, such as the widespread cyber-harassment of several female game designers collectively called Gamergate, have drawn renewed attention to the importance of increasing diversity in the video game industry (Rosen, 2015).

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This lack of diversity in the sources of video game production leads to incessant and pervasive racist and sexist representations in games, reinforcing a masculine culture of gaming. Additionally, the underrepresentation of women in the video game industry stalls the potential for innovation and creativity. There are several explanations for gender inequality in the video game industry, including a perceived disinterest in video game playing by girls, structural inequalities in educational and corporate institutions, lack of female role models and mentors, and a hostile work environment that has led several female game designers to leave the industry.

Despite the many cultural and democratic reasons for women's inclusion in the video game industry, much of the discussion emphasizes economic rationales for gender equality. Economic rationales highlight the importance of gaining technical skills to enter the STEM workforce. For example, policy initiatives stress the growth of STEM fields and the importance of job creation and retention. Educational initiatives stress the importance of preparing girls and women to enter this growing industry.

Women's inclusion in the video game industry can provide new perspectives to the field as well as contribute to building and sustaining a more democratic video game industry. Gender inequality in technology is problematic for society at large. Educators suggest that video game playing can enhance students' 21<sup>st</sup> century skills (Gee, 2005; Prensky, 2006). Video game playing requires problem-solving, decision-making, simulation, and spatial reasoning, all important aspects of 21<sup>st</sup> century learning. Video game design can help students develop important computer programming skills that can apply to other science, technology, engineering, and mathematics (STEM) fields. Thus, if girls do not play video games and are not involved in video game design, they are excluded from participating fully in society.

In the 1990s, several informal education programs emerged as a strategy for attracting girls to STEM fields. Despite these efforts, there have been little gains in gender parity in STEM fields in the United States. In fact, recent numbers show the numbers are declining down from 35 percent in the 1980s to 12 percent today (Vermeer, 2014)

One area that may shed light on this stall is the ideologies present in video game design programs for girls. While these programs have similar objectives of improving girls' technical proficiencies, they have different strategies for accomplishing these aims. Each program emphasizes different economic, cultural, and democratic rationales for why girls should be video game designers. Economic rationales, that highlight girls' entrance into the industry, may not resonate with girls, especially since the industry is dominated by male video game designers. Additionally, popular stories of video game designers do not highlight how workers may be able to balance work and family life, a concern that would be useful to communicate to girls. The objective of this chapter, then, is to understand the ideologies present in the development of games marketed toward girls and in informal video game design programs for girls. A common thread in these programs is that beyond learning the technical skills of video game design, video games can shift girls' perspectives, offering them opportunities to express themselves, challenge normative sexist and racist representations, and create social change.

## **BACKGROUND**

### **Video Games and STEM: From Entertainment to Necessity**

Since the 1980s, there has been growing concern that the U.S. is falling behind other industrialized countries in STEM education. Currently, the U.S. ranks 25<sup>th</sup> in the world for mathematics and 17<sup>th</sup> in science

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