

## Chapter 39

# Teaching Executive Functions, Self-Management, and Ethical Decision-Making through Popular Videogame Play

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### ABSTRACT

*Numerous studies support the contention that videogames can be useful in developing specific attention and memory skills. Videogames and other digital technologies also require the practice of critical-thinking and executive-functioning skills, but there is little evidence that these skills, which lead to decision-making and problem-solving skills, can be generalized from the game to the real world. This chapter examines strategies that use videogames to enhance the development of these problem-solving and ethical decision-making skills. This chapter discusses the use of these strategies with a clinical population of children with Attention Deficit Hyperactivity Disorder (ADHD) and learning disabilities and considers methods for parents, teachers, and game publishers to make popular videogames a potent teaching tool for developing decision-making skills in children.*

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## INTRODUCTION

Videogames are increasingly considered a legitimate learning tool at home and in the classroom (Tapscott, 2009). Given that children ages 8 to 18 are involved with digital media an average of 7 hours 38 minutes per day (Rideout, Foehr, & Roberts, 2010), it is logical to employ the popular games and technologies being used to teach children useful, real life skills. Drawing an analogy to a healthy food diet may be pertinent to this discussion. That is, we need to find ways to take children's time and engagement with media and videogames and make it more "digitally nutritious." By this, we mean tapping the potential of videogames to promote children's healthy development. Taking this analogy one step further, videogame play should only be a part of a balanced "play diet" that also includes opportunity for social, physical, unstructured and mastery play. When appropriately used, though, digital play can provide many possibilities for learning. The cognitive demands of watching complex television shows, playing multi-leveled videogames and programming a cell-phone have been described by Johnson (2006) as making people more intelligent as measured by intellectual testing across generations. Educators are recognizing that we can use digital media to teach and learn academic content, and there is a great opportunity for using videogames and other digital technologies for the development of problem-solving, critical-thinking, and ethical decision-making skills.

Taking children's involvement with popular videogame play and making it an opportunity for learning thinking skills is an important and worthwhile goal. This is particularly true for children who struggle to learn with standard instruction in traditional school and home settings (DuPaul and Stoner, 2003), such as children with Attention Deficit Hyperactivity Disorder. The fact that many children with learning, attention, and social/emotional difficulties are so engaged by digital technologies makes this goal even more

important (Brown, 2005). Taking advantage of every learning opportunity with these children and finding ways to make their involvement with videogames and other digital technologies more useful is imperative. This is the case especially if these technologies are going to help children learn effective problem solving skills in the context of academic and social demands and learning, and by extension, ethical decision-making skills. In the field of psychology, such skills have come to be known as executive functions or executive functioning skills.

Many popular videogames require the use of critical thinking skills or what psychologists refer to as executive functions to play and win the game (Gee, 2007). Learning to use these skills in a facile manner is important for all children, but particularly important for youngsters who experience learning, attention, and processing difficulties (Meltzer, 2007). However, current research indicates that while gamers practice these executive-functioning skills in gameplay, the skills are not easily transferred (or generalized) to daily activities. For example, platformer games often require shifting strategies or the executive function of flexibility, in order to be successful in game play. This chapter explores strategies that use the games that youngsters are playing as a tool for teaching them executive-functioning and ethical decision-making skills. We examine how these strategies can be used with a large sub-population of children (approximately 15 to 20%) who have attention, learning, and processing difficulties and also how similar strategies can be applied for the normative population.

To do this, we will first explore the role of children's play in learning and how videogame or digital play has become a major component of their daily activities. Then we will examine the concept of executive functions and how they play a large role in every day problem solving, and how they are utilized to play and beat commercial "off the shelf" videogames. Then we explain how these executive functions are a core component

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