



# Video Gaming: “Sixth Sense?”

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How often have you heard concerned parents shout, “Video games will rot your mind?” They lead us to believe that video gaming is detrimental, but this is not necessarily true. Recent studies show fascinating results: a little bit of game play has positive effects on spatial skills, attentional capacity, and even emotional development.

Video gaming has been shown to improve spatial skills. A recent study done by Isabelle Cherney at Creighton University in December of 2008 revealed that playing computer games boosts mental rotation skills involving 3-D and 2-D objects. 61 undergraduates performed mental rotation tests, such as the Vandenberg Mental Rotation Test. The Vandenberg Mental Rotation Test asks subjects to determine if two 3-D objects are identical or not. The objects in question are either a similar shape or a rotated version of the starting object. Test score is then calculated on accuracy of identification and how quickly subjects complete it. After playing Antz (3-D) or Tetris (2-D) over the course of either one or two weeks, the subjects were tested. The study found that, on a scale of 0 to 150, the combined mean test scores for males increased from 124.1 to 143.3 while the mean scores for females increased from 111.1 to 140.1 [1]. Significant increases in spatial skills can mean a possible boost in problem solving ability and can definitely help with everyday life.

By engaging the senses, video games stimulate the brain. Research, conducted in 2003 by members of the University of Rochester, Green and Bavelier, showed that playing action video games can at times enhance “attentional capacity,” which is the ability to effectively filter relevant information from the spectrum of sensory inputs that one could devote attention to. When requested to find a target object in specified rings and to ignore distractor objects outside those rings, video game players were better at processing the presented information and quickly and accurately determining which of the two possible target shapes appeared. The measure of compatibility effect in milliseconds for video game players showed that they had enough perceptual resources to be affected by distractor items at high perceptual loads. This was just one of many indications to the notion that video game players have enhanced attention and focus. In a similar portion of the study, the test subjects were required report how many objects were flashed at them, and the performances of the gamers were nearly thirteen percent more accurate than that of the non-gamers. The overall result of the study was that action video gaming can enhance visual-spatial attention [2].

There are even more important benefits derived from relative sensory immersion, and these are gained in the realm of what Eugenie Shinkle at the University of Westminster describes as the “sixth sense” of “proprioception” [3]. Proprioception processes sensory inputs related in the general feel of the body and involves neural input and hypothalamic response. The hypothalamus is an important area of the brain that uses sensory inputs to regulate hormones that control emotional feelings, such as anger, and metabolic processes, such as hunger or fatigue. Video games

offer an opportunity for individuals to engage themselves in an interactive experience by inputting commands through an interface; this enables them to directly manipulate the simulated world, rather than to passively watch a world of media unfold. One of Shinkle’s observations is that by adding emotional aspects to a game through meaningful gameplay, game producers have added importance to proprioceptive stimulation. Gestures exhibited by a player are particular evidence that the hypothalamus is being affected by the experience of playing the game because “altering one’s posture or expression can lead to a change in emotional state” [4]. Shinkle concludes that engaging in video games can contribute to one’s emotional development.

Regarding games that offer a “mediated enactive experience,” otherwise known as role-playing games, Wei Peng at Michigan State University found that an active participant gets more out of the experience than a passive onlooker who simply watches the action unfold [3]. By playing an interactive game, the player can safely simulate situations that could happen in “real life without confronting any real danger.”

In 2004, a group of researchers at the University of Wisconsin-Madison performed an in-depth evaluation of many existing games. This study analyzed how meaningful simulations presented in games can improve one’s way of dealing with the world by integrating applied activity with learning (similar to how proprioception is exercised within certain games). One particularly striking example was given through a campaign for a virtual political office in the online game The Sims Online, which forced its participants to compete with each other, think on their feet, and run an engaging intellectual race to woo over thousands of other players who would act as voters. The conclusion of the analysis was that well constructed video games can provide effective simulations that have the potential to “change the landscape of education as we know it” by providing environments that allow players to “participate in valued communities of practice and as a result develop the ways of thinking that organize those practices.”

So what does all of this boil down to? These findings strengthen the evidence that gaming is not necessarily a bad thing. Exercising your senses and learning a little self-control while simultaneously engaging in a bit of fun can produce a positive outcome. The benefits of video gaming have been shown to improve spatial skills, attentional capacity, proprioceptive orientation, and even strengthen learning by providing an applied environment.

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### References

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