

Video games can make better students, surgeons

By Steve Leblanc,

Parents, don't put away those video games just yet — today's gamer may be tomorrow's top surgeon.

Researchers who gathered in Boston for the American Psychological Association convention detailed a series of studies suggesting video games can be powerful learning tools — from increasing younger students' problem-solving potential to improving the suturing skills of laparoscopic surgeons.

One study even looked at whether playing *World of Warcraft*, the world's biggest multiplayer online game, can improve scientific thinking.

The conclusion? Certain types of video games can have benefits beyond the virtual thrills of blowing up demons.

In one Fordham University study, 122 students in fifth, sixth and seventh grades were asked to think out loud for 20 minutes while playing a game they had never seen before. Researchers studied the children's statements to see if playing the game improved cognitive and perceptual skills.

While older children seemed more interested in just playing the game, younger children showed more interest in setting up a series of short-term goals needed to help them learn the game.

"The younger kids are focusing more on their planning and problem solving while they are actually playing the game, while adolescents are focusing less on their planning and strategizing and more on the here and now," said Fordham psychologist Fran Blumberg, who conducted the research last year and plans to submit it for publication. "They're thinking less strategically than the younger kids."

Studies by Iowa State University psychologist Douglas Gentile and Dr. James Rosser, chief of minimally invasive surgery at Beth Israel Medical Center in New York, compared surgeons who play video games to those who don't.

The edge went to gamer surgeons, they found, even after taking into account differences in age, years of medical training and the number of laparoscopic surgeries performed. In laparoscopic procedures, surgeons use small incisions, thin surgical tools and video cameras to see inside the body.

One study of 33 laparoscopic surgeons found that those who played video games were 27% faster at advanced surgical procedures and made 37% fewer errors than those who didn't.

Advanced video game skills also were a good way to predict suturing abilities, according to their study, which was published in the *Archives of Surgery* in 2007.

Research Gentile and Rosser conducted for a second as yet unpublished study of 303 laparoscopic surgeons found those who played video games requiring spacial skills and hand dexterity performed better at those skills when tested later compared to surgeons who didn't play videos, Gentile said.

"The single best predictor of their skills is how much they had played video games in the past and how much they played now. Those were better predictors of surgical skills than years of training and number of surgeries performed," Gentile said. "So the first question you might ask your surgeon is how many of these (surgeries) have you done and the second question is 'Are you a gamer?'"

Some videos games even appear to sharpen scientific thinking skills.

Researchers at the University of Wisconsin at Madison looked at a random sample of 2,000 chat room posts about *World of Warcraft* to see what the players were discussing. The game is set in a fantasy world where players hunt, gather and battle to move their characters to higher levels. Players who work together succeed faster.

The research found the game encouraged scientific thinking, like using systems and models for understanding situations and using math and testing to investigate problems.

The vast majority of the discussion participants, 86%, shared knowledge to solve problems and more than half, 58%, used systematic and evaluative processes, researchers found.

But the news wasn't all good. Other studies confirmed earlier research that found students who played violent games tended to be more hostile, less forgiving and believed violence to be normal compared to those who played nonviolent games. And those who played more entertainment games did poorer in school and were at greater risk of obesity.

Happiness is a warm controller: Study shows that gaming can help the elderly lead happier lives

Video games are good for you. Studies conducted over the past fifteen years have shown that games can do everything from improve problem solving acumen to help fight the effects of Alzheimer's disease, and can even lower feelings of hostility. As the Violent Content Research Act of 2013 plums forward to study the effects of violent video games on children, other researchers are finding more and more evidence of how games can aid seniors. A new study by North Carolina State researchers has found that games can help older people feel better about life – they can make people happy.

In their study "Successful aging through digital games: Socioemotional differences between older adult gamers and non-gamers," NC State researchers, Dr. Jason Allaire and Dr. Anne McLaughlin, surveyed 140 people 63-years-old and up about how often they played video games, and their feelings of well-being, both social and emotional.

Their findings were enlightening. "The research published here suggests that there's a link between gaming and better well-being and emotional functioning," said Dr. Allaire, bringing a smile to all those senior still carrying around a Nintendo DS with *Brain Age* in it, "We are currently planning studies to determine whether playing digital games actually improves mental health in older adults."

Most telling, the study found that even seniors who only played games occasionally tended to think of their lives as emotionally and socially good. Those that didn't play games tended towards negative emotions and even more cases of depression.

Seniors haven't replaced the all-encompassing 18- to 35-year-old male demographic that keeps the engine of the video game industry running quite yet, but games and game hardware are increasingly becoming fixtures in senior living. The Windows Kinect SDK has allowed medical professionals and researchers to use the Kinect for more than making Han Solo do an awkward jig. The University of Missouri, for example, started using Kinect for physical therapy sessions in 2011. The motion sensor can be used to monitor how elderly patients move and help prevent falls that might break fragile bones. The National Senior League of bowlers actually hosts a championship tournament using only *Wii Sports*, since it offers a close approximation of the sport but little of the physical impact.