

There are many ways people try to get smarter either by reading books to solving puzzles. Scientists have found a new way for people to boost their brain power which is brain games. Although some scientists are skeptical on what these mind games can do, they have found them very beneficial to the brain.

It's not just "brain games" that help but also video games. There has been research and people have found out that the video game Call of Duty has its benefits. According to Daphne Bavelier, a researcher professor in brain and cognitive science, he states "People who play games such as „Call of Duty“ are better able to multitask, perform cognitive tasks such as rotating objects in their minds and focus and retain information than nonpayers." Call of Duty was not built to be played as a brain game but this professor has found out it has benefits to the players who play it. These gamers are able to multitask which is a skill you need in school and in your daily life. These players don't know that „Call of Duty“ is very helpful they just play it for fun, so as they are playing they are also working their brains. According to Peter Holley he writes that there was a study published in Proceeding of the National Academy which shows that by playing action video games it can make someone a better learner. Scientist are starting to do research on video games and found out that action video games help people and with the fact that lots of people like to play video games it can also help them be a better learner. A neuroscientist has found out that a new game called Hifi can help the boost the brain. Henry Machnuk, the neuroscientist, says "the game Hifi may lack the excitement of Grand Theft Auto but it's designed to boost the function of the aging brain." This scientists found out that games don't have to be fun to help your brain like Hifi. After getting ninety-five healthy adults that were eighty, they played Hifi for an hour a day for eight weeks and found out that they improved their scores on a standardized test of memory and attention by 5.5 points. Hifi was designed to help

age the brain of older people and that's exactly what the game has done, it improved the memory part of the brain even by a little bit. According to Bilton, "researchers at the University of California, San Francisco are using neuroimaging techniques to peer into gamers' heads, collecting data to help make video games that „change as you play getting easier or harder, depending on your performance." Scientists are trying to create new video games by studying gamers to help them create a game that gets harder or easier as the player plays. Since scientists have found out how action video games has its benefits they are now trying to create a game that helps the brain for the teenagers who love playing video games so it can increase their intelligence and let them play without them knowing their learning something and making their brain work.

There are opposing views whether fluid intelligence gets affected by brain games. "Fluid intelligence is much better at indicating abilities such as problem-solving ability, abstract thinking skills, memory capacity, and processing speed" (Cherry). The author is saying fluid intelligence is better due to the results it gives. According to a study done by Chein in 2011 he concluded that the younger adults showed no increase in fluid intelligence even with the measurable improvements in working memory. This scientist did several studies on teens with brain games and found out that brain games don't increase fluid intelligence. The author who published this a free writer not an actual scientists but she does write for science magazines so her credibility is very low. According to John Jonides explains, "Our discovery is that four weeks and so of training will provide a noticeable difference in fluid intelligence... we've also shown that the longer you train short term memory, the more improvement you set on the IQ." This scientist found out that after several training the people doing the training will provide a noticeable difference intelligence and the IQ. The scientist said it „will" provide the difference

which means they haven't yet found the results yet so the scientists has incomplete information. According to Kendra Cherry, she did studies with children by making them play brain games and doing school work and found out that it helped increase the students' test scores but it had no effect on measures of fluid intelligence. Kendra is psychology expert so she could be reliable knowing that a psychologist studies the brain but not as much as a scientist. According to Sandra Bond she writes " But the affects do not spill over and do not elevate critical frontal lobe brain functions such as decision making, planning and judgement" The frontal lobe of the brain does not get affected when people play brain games. It doesn't help with thinking abstractly which is part of fluid intelligence so brain games don't help with fluid intelligence. The author of this information is a cognitive neuroscientist so his information is very reliable knowing that a neuroscientist studies how the brain functions and all.

Most scientists predicts that brain games has the benefits of affecting crystalized intelligence more. "Crystalized intelligence includes facts and information, while fluid intelligence has to do with thinking logically or abstracting" (Cherry). The author is comparing the difference between what fluid intelligence and crystalized intelligence is. According to Kirsten Weir, she writes "that computerized games designed to improve working memory also boost cognitive skills that rely on that ability such as reading comprehension and visuospatial skills." These computerized games has proven to help with working memory which leads to being better with reading comprehension and reading comprehension goes into crystalized intelligence . The author is not a scientist but a free writer so her credibility is not as helpful but she does write for science magazines so it could be helpful. Cherry writes that after recent studies brain training tools might help sharpen the ability to retain information but they won't necessarily increase intelligence or improve the ability to reason and think abstractly. Brain

games might help for you to improving retaining information but it won't increase your intelligence or to think abstractly which is part of fluid intelligence. Retaining information on the other hand is part of crystalized intelligence. She also talks about how along with doing brain games the kids were supposed to do test preparations it increases crystalized intelligence but it had no effects on fluid intelligence. Cherry is a psychologist and like her colleagues they also believe that after test preparations and playing games on the computer it showed the increase on crystalized intelligence. She also showed that these test prep for assessments can increase factual knowledge but the study also shows that it does little to increase IQ. You could test as much as you want but all you will get out of it is increase factual knowledge because your IQ will stay the same. The test won't do much to your IQ but it does gave an effect on crystallized intelligence because factual knowledge is part of crystalized intelligence. She writes "research clearly shows that having high scores on standardized tests is linked to having high scores on other important tests including AP test, the SAT and the ACT." Crystallized intelligence has to do with using the knowledge you have learn before so if you have high scored on standardized tests which is stuff you learn before then you could do very well on other important tests like the AP test, ACT and SAT test. Crystalized intelligence can help people with their school work and careers.

There has been arguments where scientists believe cognitive skills and trainings are different that just playing brain games. Greg Miller writes "A similar group who used a computer for an hour a day to watch a lecture improved about two points, no better than a third group who made no change to their daily activities." So with this training the people who used a computer to watch lectures and people talking about school stuff improved their tests by two points. Whereas the people who did nothing took the same tests and didn't improve anything. Even by watching stuff to make you smart can help your brain, you don't necessarily need to be

playing brain games. Cherry says that the people in a control group, who completed trivia quizzes rather than cognitive training, reported no improvements in attention. These people did trivia questions on a computer and in order to improve attention you're supposed to do training that focuses on the attention part of the brain. Trivia quizzes won't do much considering that trivia is you knowing stuff and that has nothing to do with attention so that's why it didn't improve attention. Jaeggi states "but over the longer term as people's cognitive skills improve, the brain region for working memory actually show less activity when being called for action." So as people improve their cognitive skills, the working memory part of the brain seems not to have to work as hard. Cognitive skills have been shown to be very helpful to the memory part of the brain because the more you do cognitive skills the better it trains your brain making you not to think as hard, it's a faster process. "After training, the participants showed improvements on short- term memory and working memory tasks that weren't explicitly trained for" (Weir). After all the training the people did it not only improved the places the training was supposed to improve but also other areas of the brain that wasn't exactly targeted at. Brain games usually targets fluid or crystalized intelligence not really other parts of the brain unlike cognitive skills which is proven to help every inch of the brain with actual results. "In general, he says „memory interventions tend to be less effective than training that's targeted at other cognitive skills" (Weir). He doesn't believe memory can boost your smartness so its worthless training. Doing other cognitive skills besides memory interventions can have better effects on the brain. Cognitive skills has been proven to have more effects on the brain than brain games but cognitive skills has some brain games into to it so brain games does have its benefits to.

Scientist are still trying to find out more evidence on what brain games can do to the brain but they have found some benefits that come with brain games. Although many research

has shown that brain games has little to no effect on the person's IQ it does benefits other parts of the brain. We have found out that not only do „brain“ games help improve and benefits the brain but also action or boring video games. Call of Duty mostly helps teenagers but there is also Hifi which is mostly for older people, so whether you are old or young there are video that benefits your brain. Scientists are also still debating whether which type of intelligence benefits more from these brain games, either fluid intelligence or crystalized intelligence. Fluid which helps with your logical thinking and problem solving or crystalized intelligence which is more of you remembering things you have learned already. Also how cognitive skills are said to help the brain better than using brain games on the internet but knowing that some cognitive skills have to do with brain games, these games are as useful as cognitive skills.

Work Cited

Bond, Sandra. "Do Brain Games Really Boost Brain Power?" The Huffington Post.

TheHuffingtonPost.com, 4 Mar. 2014. Web. 11 Mar. 2015.

<http://www.huffingtonpost.com/sandra-bond-chapman/do-brain-games-really-boo_b_4859468.html>.

Cherry, Kendra. "Does Brain Training Really Increase IQ?" About Education. Web. 7 Mar.

2015. <<http://psychology.about.com/od/intelligence/fl/Does-Brain-Training-Really-Increase-IQ.htm>>.

Hambrick, David. "Brain Training Doesn't Make You Smarter." Scientific American Global

RSS. 2 Dec. 2014. Web. 7 Mar. 2015. <<http://www.scientificamerican.com/article/brain-training-doesn-t-make-you-smarter/>>.

Hurley, Dan. "New Studies Show Promise for Brain Training in Improving Fluid Intelligence."

The Atlantic. Atlantic Media Company, 7 Apr. 2014. Web. 9 Mar. 2015.

<<http://www.theatlantic.com/health/archive/2014/04/new-studies-show-promise-for-brain-training-in-improving-fluid-intelligence/360290/>>.

Koenig, Rebecca. "Brain-Training Companies Get Advice From Some Academics, Criticism

From Others." The Chronicle of Higher Education 61.09 (2014). General Reference Center. Web. 7 Mar. 2015.

Lang, James M. "Getting Beyond Brain Games; A new book looks at how to apply the science of

learning to college teaching." The Chronicle of Higher Education 60.26 (2014). General Reference Center. Web. 7 Mar. 2015.

Miller, Greg. "Computer game sharpens aging minds." *Science* 310.5752 (2005): 1261. General Reference Center. Web. 7 Mar. 2015.

Nicholson, Christie. "Brain-Training Games May Not Improve Overall Intelligence." *Scientific American Global RSS*. 14 Jan. 2014. Web. 11 Mar. 2015.

<http://www.scientificamerican.com/podcast/episode/brain-training-games-may-not->

Olena, Abby. "Does Brain Training Work?" *The Scientist Exploring Life, Inspiring Innovation*. 21 Apr. 2014. Web. 7 Mar. 2015. <http://www.the->

Weir, Kirsten. "Mind Games." *American Psychological Association*. Oct. 2014. Web. 11 Mar. 2015. <http://www.apa.org/monitor/2014/10/mind-games.aspx>.