Michael Lam

Professor Radfar

CPSC 315

Th 7:00pm

The Benefits of Virtual Reality

When the subject of virtual reality (VR) is brought up in a conversation, the majority of people would think that it is technology only prevalent in the video game industry. Although this statement is partly true, virtual reality video games and its technology has been gradually becoming a catalyst in many other professions such as education and the medical field. Some people might argue that video games have no place in a classroom setting or the medical field because games serve as a waste of time and a distraction. On the contrary, the implementation of virtual reality machinery in fields outside of the gaming industry is creating an impact in many industries. The integration of virtual reality technology in other professions have made big impacts such as the industry changes, technological advancements, and societal views.

Many industries strive to find more efficient ways of accomplishing their goals. Some fields of work such as education are looking for other effective ways to teach new generations of children skill sets like reasoning, problem solving and hands-on technological skills. According to an article by Leonard A. Annetta, he mentions how the new generation of children is living on the internet because they spend an average of 6.5 hours per day either engaging in various media

applications. Due to that fact, educators and scientists believe that games would motivate students. As the current generation of children are more tech-savvy, they would pay more attention to a lesson taught with technology involved rather than paying attention in a traditional learning environment. The education field started a movement back in 2003 creating virtual reality video games specifically meant for educational purposes. Serious games, also known as educational games, impacted the educational field by challenging and changing the traditional style of education in school. Not only does this change the way educators teach, but students also receive a more informational and hands-on method of learning due to the implementation of virtual reality.

These serious games create a more impactful and visual understanding of the subjects the game is meant for. One example of an educational game was a first-person strategy game called Immune Attack. This serious game was made in order to lecture students immunology and biology topics through a fun method of teaching. If people are still not convinced of this new method of learning outside of a textbook, VR's technology is also used to assist in the neuroscience industry. In the article, *Neurosurgical Virtual Reality Simulation for Brain Tumor Using High-definition Computer Graphics*, surgeons are able to take advantage of virtual reality to simulate and plan surgeries using virtual reality models. Even now, schools such as the University of Barcelona and University of California, Los Angeles are using VR to train future neurosurgeons. Depending on how tech-forward the teachers and professors are, it would push for more technology in the education field. Furthermore, the use of VR in multiple fields of work will further improve the technology.

Ever since the 20th century, virtual reality has been constantly transforming. From the old prototype head-mounted displays (HMDs) to a full body motion capture, VR technology has steadily grown from a distant dream into a reality used in industries outside of entertainment. As said in the article by Corey Bohil, the adoption of VR technology in fields outside of video games would increase as time went on. This is because more VR products such as headsets would be in more households as they become smaller or less-expensive to the public. Therefore as a result of the utilization of VR technology in education and neuroscience field, the cost of manufacturing VR devices have been further examined to make it a more affordable asset. Not only is the cost affected, but new technology associated with VR are being explored in order to assist in fields like neuroscience to insure more accurate results. Engineers are creating new virtual reality innovations such as technology that will help convince the user's mind with the life-like illusions. As more and more of these previously labeled "game technology" is brought into the education industry, people's views on these products are impacted as well.

Even though VR is still being introduced into the education field, society's views on these so-called "entertainment devices" are changing for the better. Previously many people viewed video games and other technology associated with that industry as a waste of time that contributes nothing positive to society. As a consequence of this mindset, some still argue that video games only contribute to why there have been many negative events happening in society, such as violent acts of crimes. However, now some people are more willing to accept these gadgets and software as a positive addition to the public. In Charlie Fink's article, he questions whether or not this technology would truly be of any benefit to society if people were to accept it

as a norm. And these are the kinds of thoughts many innovators usually think of when trying to use technology to improve the lives of others.

This collaboration between VR technology and industries other than entertainment also influences the options of other employment. Piotr Łój, the Founder of Virtual Dream Project, uses VR as a solution to help oncology patients. People like him view VR as a key item in our time because it happens to hit many of the social issues of the modern world. As virtual reality develops within and outside the gaming industry, there will certainly be an employment increase in other industries. For this field of research and development will require a variety of professions in order to produce the necessary technology for those fields of profession. Such as introducing neurologists and educators to the technology business as assistants to make error-free products.

Many of the people in the past who dreamt of the scientific virtual reality probably would not have expected the variety of uses VR technology can provide. Ever since the rise of virtual reality in the gaming industry, it has gotten some attention in the use of outside fields such as education. And this introduction into other fields has made a powerful impact on industry changes, technological advancements, and societal views of such components typically labelled as purely for entertainment purposes.

Bibliography

KIN, Taichi & Nakatomi, Hirofumi & Shono, Naoyuki & NOMURA, Seiji & SAITO, Toki & Oyama, Hiroshi & SAITO, Nobuhito. (2017). Neurosurgical Virtual Reality Simulation for Brain Tumor Using High-definition Computer Graphics: A Review of the Literature. Neurologia medico-chirurgica. 57. 10.2176/nmc.ra.2016-0320.

"History Of Virtual Reality." *Virtual Reality Society*, https://www.vrs.org.uk/virtual-reality/history.html.

Annetta, Leonard A. "Video Games in Education: Why They Should Be Used and How They Are Being Used." *Theory Into Practice*, vol. 47, no. 3, Nov. 2008, pp. 229–239., doi:10.1080/00405840802153940.

Bohil, Corey & Alicea, Bradly & Biocca, Frank. (2011). Virtual reality in neuroscience research and therapy. Nature reviews. Neuroscience. 12. 752-62. 10.1038/nrn3122.

"Corporate Training in VR Increases Confidence, Efficiency, and Skills!" *Viar360*, 2 May 2019, https://www.viar360.com/virtual-reality-corporate-training/.

Fink, Charlie. "Is It Possible To Benefit Society With Virtual Reality?" *Forbes*, Forbes Magazine, 10 Nov. 2017, https://www.forbes.com/sites/charliefink/2017/11/08/is-it-possible-to-benefit-society-with-virtual-reality/#1d000aac8640.