

# Exploring the Synergy Between AI and VR: Advancing Film, Gaming, and E-Learning

Zhiyao Zhang<sup>1,\*</sup>

<sup>1</sup>Department of Economics, College of Arts and Sciences, University of Washington, Seattle, Washington, 98105, United States

**Abstract.** The main thrust of this essay is to delve into the impact of virtual reality on traditional industries, especially in the fields of entertainment and education. In an age where technology and information go hand in hand, traditional ways of working have changed dramatically, with the aim of increasing efficiency and creating entirely new results. The study focuses on two companies that are utilizing virtual reality technology for innovation in the entertainment and education sectors respectively. A comparative analysis of the approaches of these two companies provides insight into the significance and innovative applications of virtual reality technology in these areas. As a revolutionary and innovative technology, virtual reality is having a wide and far-reaching impact on people's lives. It shows great potential for improving efficiency and outcomes, but is still in the early stages of exploration and experimentation. Therefore, more advanced technical support is urgently needed and the application of virtual reality technology is constantly being improved. Virtual reality technology is at the forefront of innovation in this day and age, and it opens a door to the future.

## 1 Introduction

People live in similar, repetitive scenes and life dramas every day, seeing with their eyes, hearing with their ears, and feeling the real, familiar world with their bodies. As people continue to imagine boldly, and with the rapid development of technology, human beings gradually begin to explore other ways to feel the things around us, to find new worlds.

Thus, virtual reality was discovered step by step. Virtual reality uses advanced technology, including computers and various multimedia peripherals, to create a simulated environment that makes users feel like objects and events in the real world [1]. The first reference to the concept of virtual reality glasses was in a novel called *Pygmalion's Glasses*, published by author Stanley G. Weinbaum in the 1930s.

When people wear these glasses, even if they don't experience many of the scenes and stories first-hand, they can still immerse themselves in the world that these glasses create for them. Because the person wearing the glasses can hear, see, and feel the things that the virtual reality glasses present to them. It is worth pointing out that the term "virtual reality" has multiple meanings, covering the simulation of some aspect of the real world, the symbolic world, and the imaginary world [2].

When it comes to experiencing virtual reality, immersion is crucial. When participants perceive that the simulated world has a strong sense of reality and veracity, making them feel like the real world, they will generate a sense of spatial immersion, making them feel like they are in it [3].

Many movies involve elements of virtual reality. For example, Neo, the protagonist of the classic movie *The Matrix*, is made to live in virtual reality through sensory stimulation so that he can't tell if it's the real world or a created world. Because all his feelings are very real. There's also the movie *Valerian and the City of a Thousand Planets* where the protagonist is surrounded by just a normal empty space before they put on their glasses, but once they do, they enter another world entirely. They can communicate with the people there and can touch objects in that world.

When movies involve sci-fi elements such as virtual reality, this allows people to use their best imagination to create this whole new world in the movie. Because there is no upper limit to human imagination, human power is also unlimited. If the people making the movie dare to think, they can bring the audience into a brand new, exciting movie scene. So that people begin to long for having the virtual reality glasses in the movie.

Unfortunately, all these elements are currently a figment of people's imagination, and today's virtual reality technology such as virtual reality glasses simply allow people to be more immersive to watch and listen. Only most recently have humans been able to interact with artificial worlds via simulations or expertly designed multimedia programs. In the future, users will not only be able to interact in the virtual world as themselves, but also take on another role on a psychic level [4]. So if human beings dare to think and do, they will have the technology of virtual reality like the one depicted in the movie and apply it to various fields, such as the field of movies, education and games.

\* Corresponding author: [zz1129@uw.edu](mailto:zz1129@uw.edu)

This thesis focuses on analyzing the significance and innovative applications of virtual reality for two companies in the fields of entertainment and education, respectively. These two companies are Immersion (Beijing) Technology Co., Ltd. and VEDX SOLUTIONS.

With the help of artificial intelligence, the significance of virtual reality for people is becoming more and more significant. People are also gradually beginning to explore how virtual reality can revolutionize traditional industries and traditional ways of working, increasing efficiency while making people more interested in their work in a novel way.

Artificial intelligence and virtual reality also have many innovative applications in education. The use of virtual reality in education is helping students to become more diverse in their learning styles and strategies, to become autonomous with new techniques for accessing information, and to build skills such as independent planning and teamwork. Universities are also responding to the latest scientific trends and looking for solutions to reach students through sight, sound, and touch. There is also a lot of collaboration and co-innovation between the audiovisual media and the education sector, such as educational films and videos and educational digital games, both of which have new institutional frameworks, industry media and rulebooks.

In conclusion, the advancements in information technology have catalyzed a significant evolution in the digital content sector, fostering the development of varied service scenarios and delivering precision-targeted digital content services across multiple domains, including film, gaming, and education.

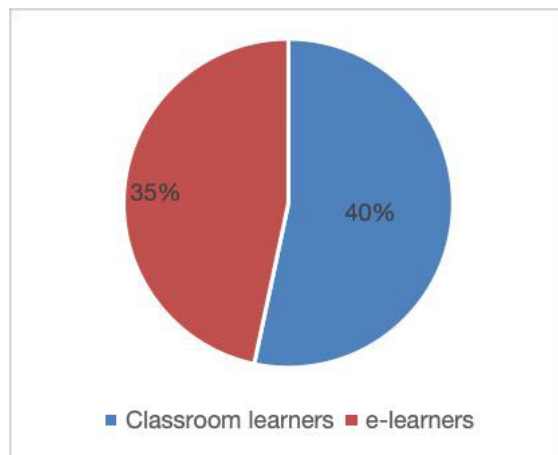
## 2 Description of VEDX SOLUTIONS

Despite the significance of virtual reality for education, there aren't a lot of new companies emerging that are focused on using virtual reality to provide more ways to educate and improve the quality of education. But VEDX SOLUTIONS is a company with a clear goal and a strong dedication to virtual reality. VEDX SOLUTIONS wants to make education more diverse and use immersive experiences to drive educational transformation. Their goal is to "deploy immersive learning tools" in every library, school, institution, and distance learning program in the world. VEDX SOLUTIONS strongly believes that immersive learning tools can increase the effectiveness of learning and produce better learners. VEDX SOLUTIONS is also a company that cherishes talent and is willing to nurture it. Their official website introduces every staff member in the company. Each of them is dedicated to VR education and very good at using VR and AR.

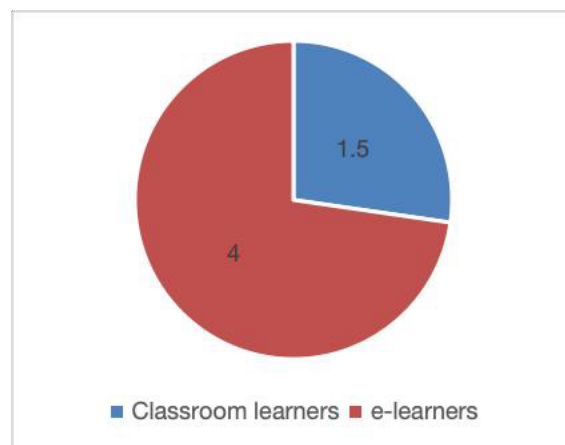
VEDX SOLUTIONS has a wide range of products and programs to implement all aspects of education. For example, VR can be used for soft skills training. PricewaterhouseCoopers conducted a study to explore the effectiveness of VR in diversity and inclusion training, an aspect of unconscious bias training. This

study shows that virtual reality environments are more effective than traditional classroom and online learning environments in teaching soft skill concepts.

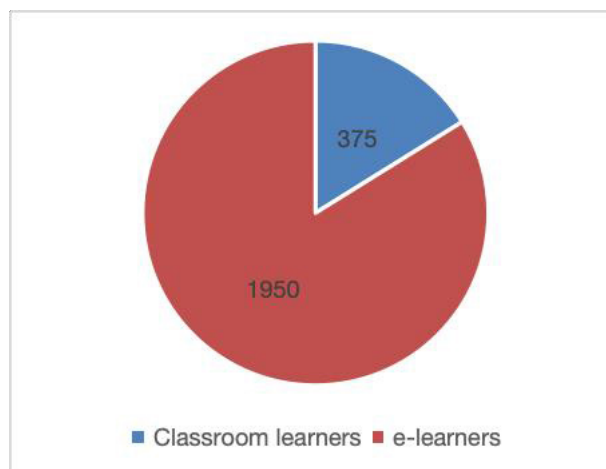
Here are three visualizations of the remarkable effect (Figure 1- Figure 3):



**Fig. 1.** Percentage of VR learners with increased confidence compared to other learners (Picture credit: Original)



**Fig. 2.** Multiple increase in attention span of VR learners compared to other learners at the time of training (Picture credit: Original)



**Fig. 3.** Number of people who believe that VR learning can be more cost-effective than other learning methods (Picture credit: Original)

In addition to the dramatic results in the three areas of comparison - learner confidence, cost-effectiveness, and attention span - other areas were also very fruitful. V-learners complete training four times faster than classroom training. V-learners made 3.75 times more emotional connections with content than classroom learners and 2.3 times more than e-learners. According to the survey, three-quarters of learners who took part in a virtual reality course suddenly realized that they were not as inclusive as they had previously thought [5].

Jeremy Dalton, Head of VR/AR at VEDX SOLUTIONS, said that Virtual reality will foster people's hard and soft skills in cost-effective, immersive, and efficient experiences, driving a new era of learning, development and education.

Therefore, virtual reality technology is of great significance in the field of education, providing students with a new and immersive learning experience. VR puts students in a virtual environment, an immersive experience that helps them understand and remember what they learn. With the continued development of virtual reality, students can conduct science experiments, simulate historical events, or explore geographic terrain through virtual labs, all of which allow them to understand classroom content more vividly. "Hands-on experience will always be more profound than reading about it in a book. This is just like in the movie *Mr. Peabody & Sherman*, where Mr. Peabody uses a time machine to take Sherman back in time to teach him about historical events. When Sherman experiences those vivid historical events first-hand, he remembers and understands them much more deeply than his classmates. Although students in the real world can't own a time machine, virtual reality can take students "back in time" to experience historical events, see dinosaurs up close, do chemistry experiments, and more.

Learning with virtual reality can stimulate students' interest and make learning more vivid and interesting. Students will then be willing to take the initiative to learn and spontaneously expand according to the classroom content to get more knowledge. This novel way of learning can increase students' engagement and concentration, and improve the learning effect.

While virtual reality has great potential and scope for development in education and can enable great innovation and change in the field of education. However, it also faces many challenges, such as cost and technical limitations. Emerging technologies such as virtual reality also need more regulations and publicity to regulate their use and promote them widely to students.

### **3 Description of Immersion (Beijing) Technology Co., Ltd.**

Immersion (Beijing) Technology Co., Ltd. has a VR virtual reality entertainment social brand - Immersion World. Immersion world is a VR virtual reality entertainment social brand, its business includes immersive experience software and hardware integrated solutions and virtual reality content production, the company focuses on large space multiplayer interactive

VR technology and content development, through the VR large space hardware and software wireless solutions, the player can be in the 100 square meters of the open game field, without weight to achieve 1:1 space walking, and at the same time, feel the VR visual VR visualization brings the depth experience of the real scene.

Chen Xin, founder of 'Immersive World', believes that the iteration of technology represented by VR not only allows content to have a form of expression such as radio dramas, film and television works in addition to text, but more importantly, it enhances the sense of experience of the content in complex scenarios [6].

Immersive Worlds produces a wide variety of genre-rich, large-space VR content, such as VR chambers, shooting fitness games, and more. Founder Chen Xin mentioned that creating virtual reality games to do is also to visualize the scene, three-dimensional form of communication, so that the user becomes a character in the work. In this process, VR technology not only reduces the threshold of the user to receive information, but also enhances the user's memory and sense of presence, and the boundary of this change comes from the interaction, which will make you more and more excited [7].

VR technology allows players to interact with other players in a virtual world, exploring, competing or cooperating together. This immerses players in the world of gaming more than computer and mobile games because virtual reality opens a whole new range of game design and play possibilities. With VR devices, players can operate and interact in a whole new way, allowing them to experience the content of the game in a more profound way through the joint activity of body and brain. Utilizing body movements, gestures, and speech, this innovation makes gaming more intuitive, fun, and challenging. And this real-time multiplayer interaction makes the game more social. Completing the game objectives together in the game can also quickly bring people closer together and enhance their relationship. Players can even interact with other players around the world, enhancing the game's fun and long-term appeal.

Chen Xin said that the three carriages of offline entertainment in China in the past: movie theaters, KTVs, and video game arcades, have gradually become a sunset industry. Therefore, the medium of content dissemination needs to change, and the feelings brought to the user as well as the excitement is not enough to meet the user's needs. The hotness of offline live entertainment, such as escape rooms, has brought about a change in the medium.

VR will inevitably bring great innovation and change to more fields such as movies, games, education, etc. Regardless of age or gender, most people said they had increased their use of VR and agreed that it was good for their physical and mental health and keeping themselves busy [8]. The continuous development and improvement of VR also brings more possibilities for entertainment and education, from hardware equipment to software applications are constantly advancing. The continuous development and improvement of VR also brings more possibilities for entertainment and education, from

hardware devices to software applications. More people, such as viewers and learners, have more opportunities and ways to enjoy immersive entertainment and learning. When it comes to virtual reality, the emphasis is on the ability to transcend the limits of reality and accomplish things that are not possible in the physical world [9].

As the technology matures and costs fall, VR devices and experiences will become more popular and accessible, further promoting their use in entertainment and education. Virtual reality has a wide range of applications in primary education that can open new opportunities, increase engagement, and contribute to the efficacy of student learning in higher education [10].

Therefore, there is still a long way to go to make virtual reality widely used in entertainment, education and other fields. Because at present, only the sense of hearing and vision at the same time to get immersive experience. Virtual reality also needs the technical support of various aspects and the participation of composite talents to realize gradually.

VR is seen as a teaching aid for the 21st century, and research has shown that students retain and apply knowledge better after engaging in VR exercises, so researchers and education practitioners are delving into the technology [11]. Overall, virtual reality is an inevitable trend in the development of technology. The development of this technology will also bring great innovative applications to traditional industries.

## 4 Conclusion

In general, the technology of virtual reality not only improves the efficiency of people in doing traditional and daily work, improves work interest by changing the way they work, but also makes people's lives more fulfilling and promotes physical and mental health.

The potential of virtual reality in both entertainment and education is immense. In terms of entertainment, expect a more realistic and immersive gaming experience in the future. This could involve intricate virtual realms, interactive games involving whole-body engagement, and enriched social interactions, offering users heightened immersion and emotional depth.

In the realm of education, virtual reality holds promise for delivering more dynamic, hands-on learning encounters. Through simulated scenarios, students can conduct experiments, delve into historical events, and grasp intricate concepts, fostering their curiosity and comprehension. Virtual classrooms also hold the promise of providing equitable access to educational resources for students worldwide, bridging gaps in resource availability.

However, hurdles persist in the realm of virtual reality. The technology remains expensive, limiting its accessibility to the wider populace. Furthermore, some users experience discomfort like motion sickness and dizziness, restricting prolonged usage of virtual reality devices. Moreover, there's a pressing need to enhance and diversify virtual reality content to cater to diverse user preferences.

Despite these challenges, as technology progresses and markets evolve, the future of virtual reality applications in entertainment and education remains promising. It's poised to broaden its reach and undergo significant developments in the times ahead.

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