Introduction

I am interested in the advancement of virtual reality and its use to enhance lessons in the classroom. The resources made available to today’s educators, in all content areas, give students the chance to go on virtual field trips. New technology allows for students to look at images of human anatomy and interact with it. The ability to see three dimensional images and move around them to see all they entail. The most intriguing part of this technology is that it allows for students to be in the confines of their own classroom. Virtual reality can be a real asset for students moving forward in the classroom, and having seen it used in several different demos with classroom content, the possibilities are above and beyond what we’ve seen and worked with in the education field.

Virtual reality is the computer-generated simulation of a three-dimensional image or environment that can be interacted with in a seemingly real or physical way by a person. It is experienced through wearing a headset or goggle-like device, allowing a visualization of the three-dimensional image that is being shown. Finding a way to integrate virtual reality into the classroom could enhance any content area’s lesson in the classroom. Educators are always looking for new ways to engage students. Field trips have always been a way to give them a different perspective about a topic, situation, or place. Imagine if students could experience a trip to any part of the world within the confines of their own classroom. This opens up a world of possibilities to students who would be able to see areas of the world unreachable due to opportunity, cost, and/or accessibility. The world would be at students fingertips, and the lengths they could go to see the world would be endless. This technology could also benefit content areas throughout education by experiencing three-dimensional images from all different angles, as if it were right in front of you. Seeing artifacts through the lenses of virtual reality would give students the capability to seemingly touch artifacts that were used hundreds, or even, thousands of years ago. Items that may not be able to be delivered to classrooms for any abundance of reasons, would be right there for students to get their hand on. This technology opens the door to other possibilities for educators and students.

Imagine the possibility of anatomy students having the virtual capability and being able to see full body imagery of the human anatomy. Students would be able to work with images, not in a textbook, but right in front of them. The ability to see the human heart from every angle possible, as though it was right in front of you in a chest cavity. Being able to manipulate and see an image from all angles, rather than just look at a computer screen could be very beneficial to an anatomy student. Virtual reality can also benefit educators in math and science. In an article by Amelia Vance (2016), Director of the Education Data & Technology Project at the National Association of State Boards of Education, asks Samantha Adams Becker, senior director of publications and communications for the New Media Consortium, about its possibilities. She states that “students studying the periodic table could hold a chemical in their hands, to look at the structure of the chemical and the proteins and view it in a more 3D way, and those types of tactile experiences are proven to bolster deeper learning” (Vance, 2016). Students could also look at anything through virtual reality compare and contrast physical objects, allowing for educators in the mathematical field to enhance lessons on many other levels. Today’s classroom and the technologies that are available allow for educators to use multiple resources to bring their subjects to life. As virtual reality has started to make its way into the field of education, its multitude of way to engage students in learning waits to be tapped into. My interest in this topic has grown over the past year, as my students have seemingly checked out at times during lessons due to their disinterest in the topic being covered. I’m working to find new ways of engagement and this seems to hit several different criteria I use when creating lessons in the classroom.

Research Questions

1. Would enhancing lessons with virtual reality help visual learners?
2. Can lessons using virtual reality help with comprehension for learners with learning disabilities?

Research Approach

I plan to use qualitative methods to conduct my research. I choose this method over quantitative methods because these research questions are not measuring the numbers, but are looking at how the lesson was enhanced with virtual reality. The focus of this research is to learn how this technology helped learners in comprehension of the lesson. This could be measured with assessment data, however, I will be looking more at how the lesson was enhanced and what, if anything, could be done better.

Strengths of this type of research method in regards to this content is communication between the participants and the researcher. Gaining an understanding as to what the participants liked and disliked in their exit interview after the lesson would give me a better sense of understanding to the questions being focused on. This is a strength because building a relationship with the participants, and understanding the field of education and how things are done with regards to lesson building, would help gain more understanding from the participants through a discussion. I think an open conversation, and a relationship built on trust and understanding of what I’m looking for, would allow for any problems during the study to be addressed through open communication between parties.

Participant Selection

I will be looking to bring in 15-20 participants for this study. They would all be students from my 9th grade World History class, which would ensure I would have built a rapport with them and them with me. This would allow for me to also know what type of learner they are in regards to understanding lessons. This group of participants would ensure the best possible results for the focus of my research.

My participants would be freshman in high school. They would still be developing their learning strategies and may be more apt to speaking their mind, and intrigued by the new technology. I would make sure to split the group into a ratio of 1:1 in regards to boys and girls.

They will be chosen based on their learning styles which I would have been more familiar with because they are my students. This would also allow for a better rapport with them and for them to be more open with their feedback. The purpose of qualitative methods is to measure the theme of the study through dialogue. Having established this from the beginning of the school year would allow for better feedback and more effective research.

Data Collection

Data will be collected through observation and interviews. Participants will complete a history lesson on the Palace of Versailles and Louis XVI.

After completing that lesson, participants will meet with researchers to debrief. The focus questions will be the center of the discussion and other clarifying questions could be asked. This will allow for clearer understanding of the feedback given by participants in regards to the underlying questions.

Integrity will be maintained throughout the study as questions will not be deviated from based on the participant. The relationship between the researcher and participant will have matured previous to this study. Each interview will be recorded to show that no deviations have occurred based on the feedback given and data results being published.

Strengths and Limitations

One factor that will make the study easy to complete will be the relationship built between the participant and the researcher. Having taught them over the school year, an understanding will have been formed about their learning habits and interviews will be easier to conduct, as I will know their strengths and limitations to see if they are truthful in what is being said.

The second factor to make this study easy would be the technology being used. This would make the lesson more interesting and intriguing to the participants in using it to complete a lesson. The enhancement of the lesson, using the virtual reality, may give it the boost needed to get them more involved and forthcoming in regards to their feedback.

One factor that may bring more of a challenge to the study would be their age. As freshman in high school, everything is new and overwhelming. Immaturity could creep in as the study progressed, or the critical thinking skills needed to communicate the appropriate feedback could be lacking.

Another factor that could pose an issue would be motivation in the subject area. History is not a favorite among freshman in high school. This could pose a problem with motivation to complete the study effectively. It could also pose an issue in regards to their ability to communicate the understanding of material because they were not interested in the topic, therefore, their lack of effort shows through.

Implications

The results from this study could be used to enhance learning in the classroom using virtual reality. It could give great insight into the world of virtual reality and ways it can be used by educators in the classroom. The research into virtual reality and its use in the classroom is very early in its findings, however, what strengths and weaknesses it can and will have in the present and future education has yet to be seen. This data could prove to be the start of something greater in education and one day could enhance lessons across the curriculums of school.

Some of the professionals that would have interest in my study would be secondary educators, more specifically, social studies educators. This technology could have a lasting impact on the field of education and it has so many benefits amongst that group of professionals. This would show why more research needs to be done in this area of the education field and why this could be very beneficial to the classroom now and for future generations.