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Virtual Reality in Failing Schools

There is a lot of evidence showing that using Virtual Reality to teach students can increase their academic performance. There have been many research papers written on the effects of using virtual reality in the classroom, and almost all of them argue that it's better than the traditional method of watching videos and listening to a teacher. The question I hope to answer is, if Virtual Reality Technology can help improve student performance, can it save failing schools? Surveys and research experiments have shown that Virtual Reality improves performance because students enjoy it more than the traditional way, and being in a virtual world opens more possibilities for learning. Failing schools typically collapse because the traditional classroom setting doesn't interest the students, so they perform poorly. So, if virtual reality can help increase grades than I hope that my experiment will show that it can also save failing schools.

There are many research articles written on the benefits of using Virtual Reality in classrooms, and many of them not only have research to back up their hypothesis but they also have positive results from their own experiments. One article "Smartphone Based Virtual Reality Systems in Classroom Teaching" argues the feasibility of using VR technology in the classroom, and the impact of VR on the students' performance. The authors Ray and Deb hold an experiment on two groups of 20 students where they purchase VR systems for one group and have the other group learn in the traditional way. This experiment ran for the entire year and showed that the class using VR had better grades, and the students agreed that the technology was not difficult to use and was easily portable. Another article "An overall solution of Virtual Reality Classroom" argues that the Virtual Reality Classroom can be integrated into the "Traditional Classroom" instead of completely taking it over. Dong argued that people can remember about 20% of what they hear, 30% of what they see, but 90% of what they experience, which implies that the Virtual Classroom is much better than the Traditional for learning. He also argues how VR can be good for studying classes like biology, and Astronomy, because students can observe things from a perspective they would never have otherwise. The benefits of using VR in Physical Education classes are discussed in the article The Application of Virtual Reality Technology in "Physical Education Teaching and Training". Unlike the other articles Zhang and Sai-Jun are not able to provide sufficient evidence to support their hypothesis. They argue that the traditional mode of PE teaching and training mode can no longer satisfy the needs of students, but with the help of Virtual Reality tech those problems can be solved. The authors don't conduct any experiments and they make claims that don't make much sense. One claim they make is students who play virtual sports will find sports in life more enjoyable, but I believe that if someone doesn't like sports then playing virtual sports will not change that.

Some research articles take a slightly different approach to using Virtual Reality technology to learn by discussing out of classroom education, and workplace training. The article "Towards Simulation of the Classroom Learning Experience: Virtual Reality Approach" discusses how using VR for distance learning is very beneficial. The article sets out to show that using VR will have a positive effect on students learning because students enjoy immersing themselves in a virtual world instead of watching boring videos online. The authors run an experiment with two groups, one group watches videos and the other uses VR technology. The experiment confirms their hypothesis because the VR group did better than the video group. Many articles try to show the positive effects of VR in classrooms but one attempts to shows the positive effects it can have on training employees. Pagano, etal argue that the current way of training workers is not as effective because they are using "information transferring" methods to teach workers. The authors don't conduct any experiments but they have examples that make sense. One great example they give is using VR to have trainees experience scenarios from another person's point of view. This would be beneficial because the trainee can acquire skills by embodying the first-person experience to register the memory as if it were their own. Another great benefit mentioned in the article is the capacity to impact events and outcomes. With control over the environment the employee can learn how to respond to many different situations. These articles do a great job at showing the benefits of using VR to improve learning. So, if VR can lead to improving grades in an enjoyable way than maybe it can enhance an entire school's performance.

The question my research tries to answer is, can Virtual Reality help save failing schools by giving students a new, fun classroom experience? Previous research has shown the using VR in the classroom has a positive effect on student performance. This can be due to students find

the technology more interesting than the traditional method, and or students being able to learn and retain more information because of the new virtual environment. Most failing schools end because students are not able to learn effectively, and research has shown that a huge part of the problem is a lack of interest in school. It has also been shown that students typically enjoy using VR technology, so if all the students in a school start becoming more excited for class than the performance of the entire school should rise. This research is different than the others because, they tried to prove that VR can improve student performance in a small classroom, but my research is showing the benefits on an entire school. If VR can save a failing school, then it should be used in every school. This research should be beneficial to educators, and communities with failing schools.

My suggested research experiment involves purchasing Virtual Reality Systems for every student in a failing school, then observing the change in performance. The experiment will begin by choosing a failing high school and giving an entire freshmen high school class virtual reality headsets. The students will be responsible for their own headset, and will be expected to leave it locked up in their homeroom class to avoid theft or damage. All teachers must teach using Virtual Reality software if possible, and students must be required to come to class to use headsets. After using Virtual Reality headsets for a year, the school will be required to keep track of how the current freshmen class did compared to all freshmen classes prior (This will happen in every grade). The following year the next set of freshmen's will be given virtual reality headsets and they will go through the same process. This will continue until the first freshmen class graduates, then their headsets will be given to the next set of freshmen's. After the last freshmen class graduates, there will be an analysis of the data gathered by teachers over the last 8 years. If the data shows that there was an overall increase in the school's performance than the

hypothesis will be valid, and it will show that VR can save failing. This experiment has not been done before because it would be very expensive. Each headset would cost at least 200 dollars per student, and every student would need to receive one. The upside is, after the student graduates the headset gets passed down.

It's been shown through much research that using Virtual Reality Systems in a classroom can increase students' performance in many different academic subjects. Unlike the other research done on this topic, my research will show that then benefits of VR are so great that it can save a failing school. The other research topics focus more on the benefits of VR on individual grades but not entire schools. If it can be shown that the benefits are so great that it can save a failing school than it will become obvious that VR in the classroom is the best way to go. This research can change how students all over the world are educated, and should be funded.

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