THE STUDY TO INVESTIGATE THE USE OF VIRTUAL REALITY TECHNOLOGIES IN EVALUATING STUDENTS' ACADEMIC PERFORMANCE

Qiu Jun, Muhantha Paramalingam

Lincoln University College, 47301 Petaling Jaya, Selangor D. E., Malaysia.

Corresponding author: Qiu Jun, Lincoln University College, 47301 Petaling Jaya, Selangor D. E., Malaysia, Email: 5778901@qq.com

Abstract

The purpose of this study is to survey the existing literature on the topic of internet usage and its effects on students' academic achievement. The primary purpose of this research was to identify the elements that influence students' internet use habits. This study also intends to determine the breadth of students' online activities and to evaluate the various ways in which they utilise the internet. The investigator read a number of academic publications. The way students use the internet is essential to all of the analysed aspects. While fourteen of the studies focused on the means via which students gained access to the internet, nine examined students' actual internet usage. Articles having a direct bearing on higher education were the only ones that met the inclusion criteria. Academic publications and articles that would have been difficult, if not impossible, for students to get via traditional library resources are now available online. Students' academic performance improved significantly when they used the internet more often. According to the research, students may get distracted from their academic work if they spend too much time on social media. As a result, there was a suggestion that the university administration release some rules to assist students deal with the difficulties they encounter online.

Keywords: Internet, Effect, Students, Internet Technology, Learning Outcomes, Positive Site, Negative Site, social media And Education.

Introduction

The purpose of this research was to report on the many ways that virtual reality (VR) technology was being used in education. By presenting examples of systems that are both those that were already being used in real-world applications and

those that were still the subject of study and development, it helps one comprehend both the state of the art and the current state of practice. Furthermore, this research examines the evaluations of virtual reality (VR) educational applications made by instructors and academics to ascertain what might be learned, how significant challenges were being handled, and whether or not the technology was starting to fulfil its potential (Aalbers2018).

Virtual reality (VR) technology was seen by many academics and educators as having major benefits that might improve education. For some, the key issue was whether virtual reality (VR) can facilitate constructivist learning practices. Some emphasis was on the potential for alternative forms of instruction that may accommodate different types of learners, including those who were more visually oriented. Others think that the chance for students and instructors to collaborate in a virtual classroom that wasn't limited by physical location was the biggest benefit. In traditional classroom settings, assimilation was often the method of instruction used for students. For instance, students may learn about a subject by hearing a teacher or instructor discuss it. The prevailing educational paradigm states that when students actively participate in the development of that knowledge in a learning-by-doing setting, they were better able to acquire new information, retain that information, and apply it in other situations. Within the field of pedagogy, constructivism was a school of thought whose adherents have differing views of how it ought to be used in the classroom. While some believe it may be a useful addition to the more conventional telling-based teaching approach, others argue that students should be able to rethink the whole curriculum via the process of gently guided exploration learning(Diaz,2018).

Background Of The Study

According to Nyakwende, students in higher education who utilise information and communication technologies, or ICTs, like the internet encounter a mixed bag of advantages and problems as a direct result of globalisation. Students may complete their projects and get answers to the problems they are having with their schoolwork by doing a simple search on Google. They were able to communicate with one another and share information and ideas despite the fact that they were physically separated from one another. This was made possible by the technology. The Internet was the key component of the technology for communication and information that had been responsible for the drastic shift in the structure of the global information landscape. This transition had been brought about by the explosion of the internet. Students had the opportunity to acquire other perspectives on a topic of discussion when they share their personal learning experiences with one another within the framework of problem-solving techniques. This provides students with the opportunity to acquire alternative viewpoints. Mr. Siraj. According to Hsieh, the utilisation of online education had a significant moderating function in the process of

improving the joy that students experience while they were attending school. Akin Ademola asserts that the internet was developed in order to facilitate the participation of people of all ages in a wide variety of social activities. One of the fundamental objectives of the internet was to do this. Every aspect of people's life has been fundamentally transformed as a result of the advent of technology such as the internet and other similar innovations. Based on the findings of Ngoumandjoka, it was around the middle of the 1990s that educational institutions started using the internet as a tool to improve the learning experience of their students. A broad range of people use the internet for a number of reasons, and each of those reasons calls for a particular sort of assistance(Barry,2017).

Purpose Of The Study

Examining how virtual reality (VR) technology has changed how schools evaluate students' progress was the primary goal of this research team. The study's overarching goal was to find out if and how VR might improve the validity, context-specificity, and accessibility of student evaluations in different types of classrooms. This study set out to answer the question, "How can virtual reality (VR) be incorporated into assessment methods to enhance educational productivity, student motivation, and learning outcomes in different classroom contexts?" by examining a range of possible applications.

Literature Review

Virtual reality (VR) in the classroom had mostly consisted of students utilising existing VR software. Students may learn about different eras in history, for example, or get a grasp of basic concepts by exploring a virtual world on their own with the help of these apps. On the other hand, educators may provide their students with the opportunity to showcase their knowledge of technical or non-scientific subjects by designing their own virtual worlds (Godlewska,2019).

This can aid students in studying, understanding, and presenting their work. Analysing the relative shares of pre-developed, student-developed, and multiuser VR was an interesting exercise in data visualisation. With 40 apps already in the works, 21 student-development efforts, and 3 multiuser apps, the ratio was around 13:7:1. The majority of VR applications are pre-made, which was not surprising because they provide a good starting point for students and educators to learn about the technology and because they make it easier to explore basic questions about how to use VR in the classroom. The majority of the pursuits that come under this umbrella are really related to research. Considering the above fact and the amount of technical knowledge needed, the fact that students are involved in creating virtual worlds in so many endeavours may seem surprising at first. Actually, just two organisations are responsible for the vast majority of these kinds of endeavours. Approximately two-thirds of the

cases were the result of these two groups working together. The restricted number of applications of multiuser, distributed virtual reality (VR) reflects the overall immaturity of virtual reality technology. Research into the merging of VR, networking, and communications technologies was still in its early stages. Even though there were just three works in this category at the moment, some developers of pre-existing VR applications had stated their intention to make networked versions of their current programmers with multiple users at a later date. Several times throughout this conversation, this goal was raised (Johnson,2022).

Research Questions

1. How does the use of different types of virtual reality technologies (e.g., fully immersive vs. semi-immersive) impact students' performance in educational assessments?
2. What are the differences in educational assessment outcomes between students who engage in VR-based learning experiences compared to those who use traditional methods?

Research Methodology

Experimental Design: Utilize a quasi-experimental design to compare the effectiveness of traditional educational assessment methods with VR-enhanced assessment methods.

Quantitative Approach: Employ approach to gather quantitative data.

- **Participants:**

Selection Criteria: Select a diverse sample of students and educators from multiple educational institutions or settings.

Sample Size: Ensure an adequate sample size to achieve statistical significance in the results.

- **Data Collection:**

Quantitative Data: Collect data through pre- and post-test assessments using both traditional methods and VR-enhanced methods.

Implementation of VR Technologies:

Selection of VR Tools: Choose appropriate VR platforms and tools suitable for educational assessment purposes.

Integration: Integrate VR technologies into existing assessment practices or develop new assessment methodologies leveraging VR capabilities.

- **Data Analysis:**

Quantitative Analysis: Analyze quantitative data using statistical methods (e.g., t-tests, ANOVA) to compare assessment outcomes between traditional and VR-enhanced methods.

Conceptual Framework

Result

Triangulating the results of the prior quantitative studies was the goal of this section of the chapter. The goal of researchers comparing and contrasting their findings is to get information that would have been impossible to achieve via individual studies. In order to determine whether there is a correlation between Internet usage and academic achievement at Chinese institutions, researchers assess these studies to see if they were relevant.

Analysing and contrasting the results

This section of the chapter will compare the findings of the two investigations, paying close attention to the three primary topics that were the centre of each study. It is worth mentioning these areas:

1. Does the prevalence of Internet addiction among college students warrant concern?
2. What are the most common ways that students use the Internet?
3. What impact does the Internet have on students' performance in the classroom?

It became clear that today's college student relied heavily on the Internet According to the two surveys, students' Internet use on campus was quite low. Their article's qualitative survey included 389 students; 232 of them, or almost 62%, were deemed "light" Internet users due to their average daily use being less than 2.45 hours. The statistical analysis revealed that 273 students, or 76% of the 359 individual Squid proxy logs, were classified as "light" Internet users since their average consumption was less than 3575MB/year, or around 10MB/day. As indicated before, they did not receive three years' worth of Squid proxy logs from CNS for each of the 359 students, and the results might be an underestimation of students' Internet use on campus owing to the unreliability of student self-reports. They do, however, want to make note of the fact that Wits lessons typically begin at 8 AM and last at 4 PM, with two hour breaks every day for conceivable reasons. To back this up, Wits classes still use the tried-and-true method of having the professor go over the material as the students take notes,

and the only classes that allow students to use the Internet are tutorials. This is despite the fact that students spend an average of four to six hours per week on computers, mostly on academic websites and search engines. The percentage of people who relied on the Internet for their quantitative research was 24%, while for their qualitative study it was 38%. Out of the 86 "heavy" Internet users found in the quantitative study, 18 used more than 10 GB each year, which is equivalent to around 27 MB per day. In contrast, 147 "heavy" users found in the qualitative study reported using the Internet for over six hours per day. Because school years are not 365 days long and students do not always attend class every single day, this was highly "heavy" in both cases. That third-year Chinese students rely on the Internet is supported by our results and those of Young, Scherer, Morahan-Martin and Schumacher, Anderson, Kubey et al., Metzger et al., and Fortson et al.

How Students Utilise the Internet

When comparing the findings of the two surveys, researchers discovered that college students' motivations for using the Internet while on campus were contradictory. The majority of students (50.64%) use the Internet for school-related tasks, followed by leisure (34.19%), connection building (8.48%), and other reasons (6.68%), according to the researcher's qualitative survey. Yet, the facts show that this is not the case. A survey of students found that the top four reasons they used the internet were for fun (53.22%), for schoolwork (20.17%), for connecting with others (17.65%), and for no apparent reason (8.16%). Given the contradictory results, the researcher has good reason to doubt the accuracy of the students' own statements. Using quantitative research methods, they found that students often exaggerate the benefits of having Internet access. The Squid proxy logs were collected from 359 students; however, only 107 of them had acknowledged using the Internet for the same reason that the records showed. This means that 70% of the student population doing the study did not know why they primarily utilise the Internet. They would rather to claim that 70% of people are unaware of how much time they spend online than admit that they lied to us. The reason for this is because the survey used in the qualitative study was designed to be anonymous. As a result, the organiser may confidently assume that the participants had no incentive to provide us with misleading results.

Various student and Internet user groups utilise the Internet for various purposes, according to the researcher's findings. Despite the fact that the same group of students uses the Internet mostly for educational purposes, according to the organizer's quantitative analysis, qualitative research shows that the "heavy" Internet users use it mostly for entertainment, then for schoolwork, and finally, to build and maintain personal relationships. Using the same reasoning, the quantitative research found that people really preferred leisure activities, then other reasons, schoolwork, and building and maintaining relationships. The effect that students' use of the Internet has on their academic performance Extensive Internet use was associated with worse academic achievement in the two studies that compared the effects of Internet use on students' academic performance. Students who were classified as "heavy" Internet users spent less

time on academic work and more time on leisure activities online, according to the researcher's qualitative study. These students also believed more adversely about the effect of the Internet on their grades. These findings were supported by the statistical analyses of the quantitative study, which demonstrated that "heavy" Internet users spent much more time than "light" users on non-academic activities on the Internet. As an intriguing aside, they found that 58.20% of students whose grades were positively affected by the Internet used it, while 29% of students whose grades were negatively affected used it. This finding is intriguing since it seems to be supported by both studies. Comparatively, the quantitative research found that "good" students used the Internet for schoolwork much more often than "bad" students (22.92% vs. 17.02%) but for fun far less often (39.58 percent vs. 57.87 percent).

The above comparison lends credence to the idea that students' non-academic Internet use may have a negative impact on their academic performance in higher education.

Analysis of Studies Quantitative

In addition to its primary aim of determining whether or not heavy Internet use was linked to low academic performance among Chinese students, the present research also sought to answer two additional issues. Thanks to these two studies, important issues were mostly resolved. After then, we had the following inquiries:

1. Can we trust data that is derived from self-reports?
2. Can we fully understand the situation with quantitative data?

about the first issue, it seems that self-reported data was not a trustworthy source due to the inconsistent findings of the qualitative and quantitative research about topics such as the motives behind students' online conduct. People are notorious for embellishing their activities, hence more robust techniques grounded on facts are required to analyse human behaviour. People may not have noticed this happening, which might explain it. Many think that by collecting anonymous data on these actions, more accurate reporting may be achieved.
Ultimately, it is worth noting that both studies, though they came to different conclusions regarding the reasons behind students' online behaviour, did lend credence to the idea that third-year students at Chinese University often experience an Internet dependency, and that this dependency significantly impacts their academic performance.

Discussion

Despite the fact that during the course of the study, researchers classified students as "heavy" or "light" Internet users based on the sample mean, they discovered that nearly 37% of participants exhibited signs of Internet dependency when using the seven criteria for Internet dependency, which indicates that college students are dependent on the Internet. Furthermore, their study

reveals that 62% of the sample population are classified as "light" Internet users, and 38% of their sample population—which represents around 62% of the sample as a whole—are classified as "heavy" Internet users since they spend more than 2.45 hours a day online. The two previously stated findings suggest that the sample mean Internet use—which has never been used to classify students as "heavy" or "light" Internet users—was just as reliable as the seven criteria for symptoms of Internet dependence that have been used in previous studies. Researchers feel that the distribution of "heavy" vs. "light" Internet users would have been different if they had asked students to report on their daily Internet usage both on and off campus, even though they only asked them to report on their use while on campus. In order to guarantee consistency in sampling techniques throughout the ensuing qualitative and quantitative studies, they explicitly asked students to report only on their Internet use while on school.

Conclusion

The goal of the study was to review earlier research on the relationship between students' use of the internet and their academic achievement. As a result, students should limit their internet use, and authorities should assist students in overcoming some of the difficulties they encounter when learning electronically with the internet. Research indicates that students' learning outcomes strengthen when they are linked to the internet; however, there are also multiple adverse consequences that can cause students' learning outcomes to decline. Everyone now uses web-based social networking; since technology was so ubiquitous and convenient, people often see both individuals and groups as being dependent on it. The introduction of internet networking has significantly improved students' capacity to collaborate swiftly and efficiently. A company's success may be enhanced by online networking in a number of ways, including by assisting it in reaching its goals and boosting yearly sales. Teens engage with media on a regular basis. Social media offers a lot of benefits, but it also has a lot of disadvantages that might harm users.

Inaccurate information can hurt a company's efforts to train its employees; poorly aimed advertisements can hurt a company's profits; social media companies can violate users' privacy by abusing their power; and young people who are exposed to unrelated content may grow to enjoy violence and other criminal activity. In order for everyone to benefit from these cutting-edge advancements, it was important that they use social media's positive aspects while avoiding its negative ones (Mathewson,2020).

References

1. Aalbers G., McNally R. J., Heeren A., de Wit S., Fried E. I. (2018). Social media and depression symptoms: A network perspective. J. Exp. Psychol. Gen. 148 1454–1462. 10.1037/xge0000528.
2. Barry C. T., Sidoti C. L., Briggs S. M., Reiter S. R., Lindsey R. A. (2017). Adolescent social media use and mental health from adolescent and parent perspectives. J. Adolesc. 61 1–11. 10.1016/j.adolescence.2017.08.005.
3. Diaz, J.C.T., Montoliu, J. M.D., & Becerra, M. H. 2018. Plagiarism, internet and academic success at the university. Journal of new approaches in educational research. 7(2): 98- 104.
4. Fox S. Peer-to-Peer Healthcare. Pew Internet & American Life Project. 2011. [(accessed on 16 September 2021)].
5. Godlewska, A. B. 2019. Converting a lager lecture class to an active blended learning class. Journal of geography in higher education. 43(1): 115.
6. Johnson, J. (2022). Worldwide digital population as of January 2022.
7. Mathewson M. (2020). The impact of social media usage on students' mental health. J. Stud. Affairs 29 146–160