

VIRTUAL REALITY IN TEACHING AND LEARNING OF BUSINESS EDUCATION COURSES IN COLLEGES OF EDUCATION IN ANAMBRA STATE

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Abstract

Virtual reality (VR) provides new and beneficial angles to learning that enhance students' experiences. This study aimed to determine virtual reality in teaching and learning of Business Education in colleges of education in Anambra state. Two specific purposes as well as two research questions guided the study. Survey research design. The population comprised of all the 83 Business Educators in two colleges of Education in Anambra state. They were not sampled. An 11-item structured questionnaire was used to collect data from the respondents. The instrument was face validated by three experts in Faculty of Education. Cronbach Alpha statistical method was used to test the reliability of the instrument which gave a coefficient of 0.73. Data were analyzed using mean and standard deviation. The findings indicated that challenges hindering the use of VR in teaching are technological and organizational challenges. The study concluded that addressing these technological and organizational challenges will boost the use of VR in teaching of Business Education courses in colleges of education in Anambra state. It was recommended that adequate finance should be provided in school to ensure procurement and maintenance of VR resources to boost its utilization, among others.

Keywords: Business Education, virtual reality, teaching, learning, colleges of education.

Introduction

Business Education is a programme that prepares students for the world of work. According to Enwere and Ikeanyionwu (2020), Business Education programmes prepares students for entry and advancement in jobs within business and to handle their business affairs as well as to function intelligently as consumers and citizens in a business economy. Through Business Education programmes, learners are equipped with functional skills, knowledge, attitudes, and competencies and so on that makes them functional members of the society (Amah & Moore, 2022). Some Business Education courses are: Accounting, Marketing, Finance, Secretarial Administration, Operations Management and Economics for Business, among others. These Business Education courses are offered at various levels of tertiary education: universities, polytechnics and colleges of education.

College of Education is an educational institution where learners are prepared to be practitioners as well as leaders in education and related human service fields by deepening and expanding understanding of education as a fundamental human endeavour in helping society define and respond to its educational responsibilities and challenges (Nigeria Academy of Management Administration, 2014). Colleges of

Education programmes prepare students for employment in industries, business establishment, career in teaching, civil service as well as self-employment (Ubong & Wokocha in Enwere & Ikeanyionwu, 2020). In order to achieve the objectives of colleges of education, quality teaching and learning must take place therein.

Teaching is a form of interpersonal influence aimed at changing the behavior potentials of learners (Manas, 2022). Teaching can be informal or formal. Informal teaching is carried out within the community from family, friends, community members and so on while formal teaching takes place within a school by a trained teacher who implements the curriculum. Business Education programmes are forms of formal teaching. Through this programmes, business education courses are imparted on learners.

Learning is the knowledge or skills which are acquired by instruction or study (Manas, 2022). It is the acquisition of knowledge, skills, habits and competencies, among others. The aim of every teaching and learning process is to make learning occur in the mind of the learner. Theorists and learning experts assert that learners have to be engaged in active

processes as this enhances their knowledge acquisition process. The knowledge acquired enables the learner to adapt to the real world environment. Kanika (2017) noted that the use of technology in education helps the teachers to prepare students for the real world environment. Methods, techniques and technologies that involve all the learners' senses making them excited about learning make learning effective (Graeske, 2024). One of such technologies is Virtual Reality (VR). According to Fanik (2023), VR is an innovative approach that uses immersive technology to enhance the teaching and learning process. VR opens new ways to learn skills that were otherwise difficult to teach previously. It can be used to train students' soft skills while receiving valuable feedbacks on their performance. Through features like speech analysis, VR systems can evaluate students' verbal communication skills, identify their strengths and areas of improvement. VR enables teachers and students to explore different worlds without having to leave the classroom. VR is a simulated experience of a three-dimensional environment. The most common way to access VR is through a VR headset eg meta quest, sonyplaystation VR, Apple Vision Pro (Fanik, 2023). VR allows learners to look around, move and interact with their surroundings. VR in education allows learners to experience otherwise impossible scenarios like visiting a far-away cultural sites from the comfort of the classroom. Learners can go on virtual field trips at a fraction of the cost. Learners with physical disabilities can visit places that would otherwise be impossible or difficult using VR. According to Graeske (2024), VR can be understood by three basic principles, firstly, immersion, which transports users into the virtual world, creating a natural sensation of presence. This is achieved through devices like digital helmet or digital cave that envelop users in the virtual environment. Secondly, interaction, where users engage with virtual objects using tools like digital gloves, manipulating them with precision. Lastly, involvement, where users become an active part of the virtual world, influencing the outcome of the application and navigating the environment with purpose. These principles work together to create a seamless and interactive VR experience and concretizes learning.

Enyiazu (2021) submitted that VR applications in education will bring several gains for teachers and students, including excitement, motivation to learn, deeper learning, long-term retention and increased time-on-task. Despite these benefits, the adoption of VR may be hindered due to several challenges. Enyiazu (2021) noted that the factors that account for the limited

adoption and use of advanced technologies like VR can be categorized into technological, organizational and environmental challenges.

Technical challenges could be speed interoperability, hardware, software, security, connectivity problems and dearth of effective ICT skills and so on (Enyiazu, 2021). CodeWork Team (2023) posited that limited availability of VR hardware and software creates barriers for teachers and students to access and use this technology effectively. Fanik (2023) submitted that issues like insufficient network infrastructures, overloaded servers, and inadequate technical support often result in suboptimal learning experience. Without robust network coverage, students and educators face connectivity issues; also, overloaded servers can lead to slow performance (affecting the quality of education delivered).

Organizational factors include institutional and administrative challenges, implementation challenges, financial challenges and time management challenges (Enyiazu 2021). Institutional barriers like bureaucratic hurdles, outdated policies and a resistance to change at the administrative level halts the adoption of VR technologies. CodeWork Team (2023) noted that financial constraints faced by educational institutions often act as a deterrent to the seamless adoption of VR. Implementing VR technologies in classrooms require sufficient financial investment, making it difficult for some educational institutions to achieve widespread adoption. These challenges probably limit the use of VR in teaching.

In Anambra state, lofty strides have been taken to boost education. The Anambra state governor Chukwuma Charles Soludo announced free basic education in public schools, recruited over 5000 teachers through a merit-based, created Anambra State Educational Advisory Council to support the development of a technology platform for students, parents, inspectors and teachers, among others. These efforts impact on education positively. For instance, Ibrahim (2024) noted that three students from a secondary school in the state won the national innovation competition with their next-generation project as they presented a VR work that surpassed contestants from all other 36 states of the federation. Also, Omenugha (2021) submitted that in 2018, Regina Pacis Girls secondary school Onitsha Anambra state won the technovation challenge in Silicon Valley, San Francisco, among others achievements of education in the state. To the researchers' knowledge, none of such has been recorded for tertiary institutions like college of

education. One wonders if technology is used in teaching and learning in colleges of education specifically. This therefore warrants the study on VR in teaching and learning of Business Education in colleges of education in Anambra state by specifically determining challenges hindering the use of VR in teaching business education in colleges of education in Anambra state.

Statement of the Problem

Ideally, learners ought to be actively engaged during the teaching and learning process. This tends to enable them internalize what is being taught better. Technologies like virtual reality (VR) has the potential of enhancing learning as they promote students' engagement and lifelong learning. Such technologies like VR ought to be used in classroom operations to make learning occur in the mind of the learner.

Currently, observations of the teaching and learning of Business Education in colleges of education in Anambra state seem to suggest that some educators appear to be unfamiliar with the use of emerging technologies like VR in teaching. For instance, they may not take their students on virtual field trips from the comfort of their classrooms without travelling physically to those sites. Teachers and students likely cannot explore different worlds without having to leave the classroom. They seem not to be skilled in using technologies like VR.

Consequently, teachers seem to resort to traditional methods of teaching which does not meet up with the demands of the 21st century and may not be capable of preparing today's students for a future in a digitalized world. Students on their part may seem disengaged during teaching and learning which will likely affect their academic achievements adversely. Given the laudable benefits of VR in education, one wonders what could be holding educators from utilizing it in the teaching and learning process. It is therefore the thrust of this paper to determine virtual reality in teaching and learning of Business Education in colleges of education in Anambra state, exploring the challenges hindering the use of VR in teaching business education in colleges of education in Anambra state.

Purpose of the Study

The main purpose of the study was to determine virtual reality in teaching and learning of Business Education in colleges of education in Anambra state. Specifically, the study sought to determine:

1. Technical challenges hindering the use of VR in teaching and learning of Business Education in colleges of education in Anambra state.

2. Organizational challenges hindering the use of VR in teaching and learning of Business Education in colleges of education in Anambra state.

Research Questions

The following research questions guided the study:

1. What are the technical challenges hindering the use of VR in teaching and learning of Business Education in colleges of education in Anambra state?
2. What are the organizational challenges hindering the use of VR in teaching and learning of Business Education in colleges of education in Anambra state?

Methods

A descriptive survey design was adopted for the study. This was done by seeking the opinions of Business Educators on the problem of the study. The study was carried out in the two Colleges of Education in Anambra state- NwaforOrizu College of Education, Nsugbe (NOCEN) and Federal College of Education (Tech), Umunze (FCETU). The population is made up of 83 Business Educators, consisting of 66 Business Educators in FCETU and 17 Business Educators in NOCEN. The whole population was used because the size was manageable, hence, no sampling and sampling technique.

The instrument for data collection was a questionnaire constructed by the researchers based on the research questions. The questionnaire was made up of 11 items and was divided into two parts 1 and 2. Part 1 with 6 items to elicit information on technical challenges hindering the use of VR in teaching and learning of Business Education in colleges of education in Anambra state and part 2 has 5 items which covered organizational challenges hindering the use of VR in teaching and learning of Business Education in colleges of education in Anambra state. The instrument was validated by three experts from the Faculty of Education, Nnamdi Azikiwe University, Awka. The instrument was pilot tested to ensure its reliability and the data collected was analyzed using Cronbachs' Alpha. This gave a coefficient reliability of 0.73 which was considered to be high. The questionnaire was administered by the researchers using direct administration method. Out of the 83 copies of the questionnaire administered only 73 copies were used for analysis representing about 87.95% which was considered adequate for the study. The other 10 copies were either not duly filled or not retrieved.

The data obtained were analyzed using mean based on the 4-point scale ranging from strongly agree of 4 points to strongly disagree of 1 point. Any item with a mean response of 2.50 and above was considered 'agreed' while anyone with a mean response below 2.50 was considered 'disagreed'.

Results

The results from research questions are presented in the tables below

S/N	ITEMS	X	SD	REMARK
1	Security challenges	2.88	.86	Agreed
2	Hardware issues	2.76	.73	Agreed
3	Software challenges	2.79	.79	Agreed
4	Connectivity problems	3.03	.76	Agreed
5	Dearth of ICT skills among educators	2.94	.74	Agreed
6	Students' lack of understanding of VR softwares and hardwares	2.53	.82	Agreed

Source: authors' computation, 2024

In table 1, all the 6 items have mean ratings greater than or equal to 2.50, showing that they are technical challenges hindering the use of VR in teaching and learning of Business Education in colleges of education in Anambra state.

Research Question 2: What are the organizational challenges hindering the use of VR in teaching and

S/N	ITEMS	X	SD	REMARK
1	Institutional challenges	2.82	.78	Agreed
2	Administrational challenges	2.96	.76	Agreed
3	Implementation challenges	2.55	.95	Agreed
4	Financial challenges	2.54	.86	Agreed
5	Limited collaboration and sharing of VR resources among educators	2.53	.82	Agreed

Source: authors' computation, 2024

Table 2 above shows that all the 5 items are above 2.50 which is the cut-off point. This means that they are organizational challenges hindering the use of VR in teaching and learning of Business Education in colleges of education in Anambra state.

Discussion of the Findings

The results in table 1 show that security challenges, hardware issues, software challenges, connectivity problems, dearth of ICT skills among educators are technical challenges hindering the use of VR in teaching and learning of Business Education in Colleges of Education in Anambra state. This finding is in tandem with the submission of Enyiazu (2021) that technical challenges could be speed interoperability, hardware, software, security, connectivity problems and dearth of effective ICT skills and so on. It also aligns with Fanik

Research Question 1: What are the technical challenges hindering the use of VR in teaching and learning of Business Education in colleges of education in Anambra state?

Table 1: Mean Response of Respondents on technical challenges hindering the use of VR in teaching and learning of Business Education in colleges of education in Anambra state.

learning of Business Education in colleges of education in Anambra state?

Table 2: Mean Response of Respondents on organizational challenges hindering the use of VR in teaching and learning of Business Education in colleges of education in Anambra state.

(2023) that issues like insufficient network infrastructures, overloaded servers, and inadequate technical support often result in suboptimal learning experience.

Research question two also revealed that institutional, implementation, financial and administrative challenges are organizational challenges hindering the use of VR in teaching and learning of Business Education in colleges of education in Anambra state. This is in line with CodeWork Team (2023) who noted that financial constraints faced by educational institutions often act as a deterrent to the seamless adoption of VR. Similarly, Enyiazu (2021) posited that institutional barriers like bureaucratic hurdles, outdated policies and a resistance to change at the administrative level halts the adoption of VR technologies.

Conclusion

Based on the findings of the study, it was established that technical and organizational challenges hindered the use of VR in teaching and learning of business education in colleges of education in Anambra. The findings revealed that technical challenges like speed interoperability, security, software among others hinder the use of VR in teaching business education in colleges of education in Anambra state. It was also found out that institutional, implementation, financial and administrative challenges are organizational challenges hindering the use of VR. Hence, it is concluded that institutions need to address these challenges in order to

enhance the use of VR in teaching and learning of business education in colleges of education in Anambra.

Recommendations

Based on the findings, the following are recommended:

1. There should be partnership with technical companies, government initiatives or community-driven efforts to donate or provide VR devices to educators and students.
2. Provision of finance to provide the needed infrastructure for the use of VR in teaching.

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