
NEW TECHNOLOGY NEEDS FOR TEACHING BUSINESS EDUCATION IN TERTIARY INSTITUTIONS IN NIGERIA

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ABSTRACT

This paper examined the use of e-learning and virtual reality as new methods of teaching business education in tertiary institutions in Niger Delta States of Nigeria. Two research questions were formulated to guide the study. Literatures were reviewed and referenced accordingly. This study was based on the concept of Bennett (2019), who stated that e-learning is a network that enables the transfer of skills, knowledge, and delivery of education to a large number of recipients at the same or different time and location. E-learning is the online delivery of information; it is the integration of learning with technology. While virtual reality is a stimulating experience that can be similar to or completely different from the real world, the applications of virtual reality include entertainment for educational purposes (using computers and handsets). The introduction of computer was the basis of this revolution, and with the passage of time, smart phones and tablets have become important learning devices in the classroom. The survey research design was adopted for the study. One hundred and five (105) business educators were randomly selected from tertiary institutions in Niger Delta States of Nigeria. A 20-item questionnaire was designed and used for information and data collection. The research questions were answered using mean and standard deviation. The paper concluded that it is necessary for business educators in Nigeria to key into the use of new technologies such as e-learning and virtual reality to enhance continuous changes in teaching methods and also help students understand complex concepts, subjects, or theories. Data collected showed a mean of 2.51 and standard deviation of 0.84, indicating a high extent of modern technologies will create an enabling environment for effective teaching/ learning. Also a mean of 3.31 and a standard deviation of 0.86 indicated a very high extent of internet materials and videos will improve understanding/experiential knowledge of business education students. Recommendations reached include that business educators must embark on current training and re-training on ICT competencies programmes in order to fit into the use of new technologies in the e-world.

KEYWORDS: E-learning, Virtual Realities and Business Education, Tertiary Institutions and Nigeria

Introduction

Technology has changed lives, methods, organisations, behaviours, and careers, and it is imperative that the education system keep up with the trend. A Nigerian graduate is willing to change career paths at any time the opportunity is available. To facilitate this need, it is important that the right kind of formal online education be made available in the educational system and educators must acquire adequate training needs in their professional areas.

The COVID-19 pandemic has brought understanding in so many areas, including the educational sector, where teachers have found ways to convert their lessons into an online format. Students have become used to learning online. Though the process has not been very smooth, the rapid transition from physical classrooms into an online environment is necessary so as to meet the current trend in technology. The Nigerian private school system is able to adapt to some extent, and many other schools had to scramble quickly to convert their courses into a digital and remote-friendly format. It is important to note that the start of the COVID-19 pandemic has forced a massive shift in the way we work, learn, relate, and connect with others. The transition from physical classrooms to virtual classrooms may be difficult at the onset in schools that have no facilities, but the start of the process will enable both private schools, colleges, and other higher institutions of learning to benefit from online learning as it links everybody to a circuit of information. And the shift away from traditional classrooms for Nigerian schools could be the new normal for students.

Before diving into the details of how technology in education will help improve the learning process, it is important to understand why we need to improve the quality of education in the first place. Historically, most technologies designed to aid learning have been aimed at enabling access to information, facts, and observations about the world. Before computers, we had a powerful tool that helped individuals retain facts and knowledge, which is books. But in the era of digital technology, books are being turned into eBooks. Hence, there is a need for teacher training (Ezenwafor 2012).

Online education could be the new normal for the future of business education in Nigeria if only the educational system could be structured to meet the new technologies that are available for teaching and learning. For example, adopting technologies that can be used to uncover trends and gain vital information about the school system, using that same technology to improve student outcomes, personalise curricula, and improve students' academic performance. The use of machine learning and algorithms can possibly track students' academic progress. The machine can identify the areas where students are failing and send an alert to the student, teacher, or parents. This device will send a signal to the educator that this particular student needs help in a certain area, and the educator can then formulate strategies on how to bridge that knowledge gap. This can mean that online study is the new normal for business education because there has been a definite shift in attitudes and perceptions when it comes to online learning and how it can benefit students.

Ozuruoke (2015) observed that innovative digital tools such as 3D learning environments, virtual reality, augmented reality, and mixed reality facilitate enhanced experiential learning that allows students to grasp theoretical concepts faster and in greater depth. Immersive learning enhances the learning process by adding content that is interactive and engaging. It allows for experimentation, practice, and learning by doing. This has greatly appealed to the insatiable curiosity residing in students, and due to the possibility of multiple instances of connecting with key concepts, it enables learners to work at their own pace and capacity. Using virtual reality (VR) technology enables the learner to understand complex scientific concepts with fun and ease.

Accordingly, Ezenwafor (2012) opined that online learning strategies for the new normal have a lot of challenges as some students may be busy chatting, playing videos, or communicating with friends while teaching is going on. Online learning also comes with its own unique benefits of increasing the knowledge base of both the teacher and student; it makes learning interesting. Hence, teachers and trainers need to be the primary force driving this change and promoting the concept. The author stated the following education learning strategies that teachers and trainers can use to increase learners' engagement online:

- Planning: this is to ensure an organised, laid-out plan. Teaching a class without a plan is difficult for face-to-face lesson delivery. But with an online class, you also need to think about new and different ways to keep your class engaged. Synchronous and asynchronous learning both have their place. (Asynchronous means when you work at your own pace, while synchronous means when you study alongside other students at the same time.) You could think about mixing things up to ensure that students are engaged with their online lessons. To this end, break up your lessons into digestible pieces so that students' attention spans do not waver.
- Lead by example: the teacher must present the lesson well, look into the camera when presentation is on-going and avoid multi-task while presenting. Technology today allows connection in many different ways, in which users are expected to have good knowledge of it. Business educators can use this to their advantage in the virtual classroom, e.g., starting by encouraging students to take part in online polls or real-time online knowledge tests. Include audio files or videos as part of the lesson.
- Encourage social interaction: switching to an online learning environment can be tough for some students. But if teachers can encourage social interaction, the same as students can expect when in physical proximity to their classmates, this could help keep them engaged. Encourage students to spend time socialising before you jump into the learning materials. Also check students on an individual level, just like you would in a classroom environment.

E-learning and Business Education

Technology is a structural change that can be integrated to achieve significant improvements in productivity. It is used to support both teaching and learning. Technology infuses classrooms with digital learning tools, such as computers and hand-held devices, which expands course offerings, experiences, methods, and learning materials; it supports learning 24 hours a day; builds 21st century skills; increases student engagement and motivation; and accelerates learning abilities. Technology has the power to transform teaching by ushering in a new model of connected teaching materials. These models link teachers to their students and to professional content, resources, and systems to help them improve their own instruction and personalize learning. On the other hand, if technologies are not properly integrated and used adequately in the classroom, they will slow down students' participation, interest, academic performance and poor delivery of the subject. Hence, there is a need for teachers' training, the provision of modern gadgets and the utilization of technologies in the classroom.

In the writings of Okoye (2016), multimedia is defined as vivid images, videos, and instantaneous information that capture the attention of the students easily. The use of various multimedia resources adds professionalism to classroom teaching. Students enjoy distinctive resources, and the variety of these resources keeps students engaged and interested in the classrooms. Multimedia can stimulate more than one sense at a time, and in doing so, educators reach out to all different levels of learners and sustain their attention longer. Giving students the ability to create and utilize different types of multimedia creates more collaborative classroom learning and allows students to communicate and actually apply what they are learning; it enhances the overall educational experience. Online learning opportunities and the use of open educational resources and other technologies will increase educational productivity by accelerating the rate of learning; reducing costs associated with instructional materials or program delivery; and improving the utilization of teachers' time.

Okoye (2016) noted that utilization of social media is a tool for e-learning and that every kid, teacher, in fact, everybody uses and enjoys social media. When social media is used for teaching purposes, it turns out to be of great benefit and value. Students like being social, collaborating, sharing, and exchanging ideas. It promotes understanding in learning because important aspects of teaching are integrated, like collaboration and interaction, which takes place seamlessly via social media. Not just that it is being used by all, but it also enables you to keep issues under check and helps in assigning tasks, assignments and other class-related activities effortlessly.

According to Udermann (2019), social media plays an important role in keeping guardians updated about students' performance and other school activities. Various platforms like Facebook, Whatsapp, and Twitter are being used by school administrators and educators worldwide to disseminate information and are enjoyed by the masses. To this end, there is a need for all business educators to have a technological balance in the new normal as the source of information is not just limited to books in the 21st century, but instead

podcasts, videos, OERs, blogs, ebooks, and other resources which are used to deliver knowledge. The author observed that students enjoy exploring situations just to widen their knowledge. Therefore, a mix of various learning resources will improve students' academic performance.

In the writings of Moore (2014), e-learning is a form of technology to empower students and reach out to the unknown. Therefore, there is need for educators to be trained in this field as technology brings about artistic expression. Modern technology-based learning encourages artistic expression among students from different backgrounds. These tools provide some forms of communication for those students who have been constrained by the traditional options of verbal and written communication. Therefore, students need to be familiar with the use of computers and the utilization of online materials. It engages students in the active expression of opinions and not just regurgitating facts. Social media connects us to people around the world and gets us in touch with experts in the same field.

Accordingly, Martin and Bolliger (2018) noted that incorporating technology into teaching is a great way to actively engage students, especially as digital media surrounds young people in the 21st century. The use of networked computers, modern gadgets, new technologies, interactive whiteboards, or mobile devices can be used for effective teaching and learning of complex concepts and subjects as it displays images and videos to increase knowledge and understanding; it also enables students to visualize new academic concepts. Learning can become more interactive when technology is used as students can be physically engaged during lessons as well as get instant research materials and information to carryout school assignments and homework, which develops autonomy. The author further noted that mobile devices, such as iPads or tablets, can be used in the classroom by students as a behaviour management technique. Incorporating educational programmes such as Quizalize into your lesson plans is also a great way to make formative assessments fun and engaging.

Virtual Realities (VR) and Business Education

Technology that includes virtual reality is becoming prevalent. VR experiences are best-in-class and artistically rendered to create a computer-simulated environment where students are not passive participants but co-conspirators. It is a major shift in how learning is experienced in the digital realm. The software of virtual reality is making many industries prepare for various scenarios before entering them; the same is applicable to the educational sector. The educational system is projecting the use of virtual reality for achieving educational objectives and interactions with students based on the present state of technology. Therefore, there is need for business educators to equip themselves with virtual training and development to remain relevant in the new normal.

According to Madjidi, Hughes, Johnson, and Cary (2014), the use of virtual reality in education has displayed the capabilities of promoting higher order thinking,

promoting the interest and commitment of students, the acquisition of knowledge, promoting mental habits, improving the understanding level of students, improving teaching skills for teachers using VR by providing a deep level of knowledge, and improving memory power by connecting feelings with education. It takes very little time to understand complex topics and understand the general usefulness of academic context. The VR context has afforded users access to the cutting-edge of technology and unique educational experiences. This could include giving users access to virtual, interactive copies of rare texts, artefacts, and tours of famous landmarks.

VR is the use of computer modelling and simulation that enables individuals to interact with an artificial three-dimensional (3-D) visual or other sensory environment. VR applications keep the user in a computer-generated environment that simulates reality through the use of interactive devices that send and receive information from goggles, headsets, gloves, or body suits. Thus, the user can tour simulated suites, experiencing changing viewpoints and perspectives that are convincingly related to use. Data gloves equipped with force-feedback devices provide the sensation of touch; the user can pick up and manipulate objects in the virtual environment. An important area of application for VR systems has always been training for real-life activities. The appeal of simulations is that they can provide training equal or nearly equal to practice with real systems, but at reduced cost and with greater safety. Virtual Reality is used in education to enhance student engagement with their study. Trucano, (2015), Virtual Reality is a computer-generated environment with a scene and objects that appear to be real, making the user feel immersed in its environment. Udo (2015) that this environment is perceived through a device known as a Virtual Reality headset or helmet. VR allows the user to immerse in video as if they were one of the characters, learning on this platform will improve the quality of training to maximise performance. There is also a combination of both realities called mixed reality. This hybrid technology makes it possible to see virtual objects in the real world and build an experience in which the physical and the digital are practically indistinguishable.

Accordingly, Trucano (2015), noted that one method by which virtual reality can be realized is simulation-based virtual reality. Driving simulators, ie it gives the driver on board the impression of actually driving an actual vehicle by predicting vehicular motion caused by driver input and feedback which is corresponding visual, motion and audio cues to the driver with avatar image-based virtual reality. It enables individual join the virtual environment in the form of real video as well as an avatar. Also a Desktop-based and projector-based virtual reality is used in modelling a learning environment which plays a vital role in various virtual reality applications, such as robot navigation. It is a realistic model and it is essential to accurately register acquired 3D data; usually a camera is used for modelling small objects at a short distance to affect learning.

According to Warschauer, Mark, Matuchniak, and Tina (2010), virtual reality is a fully digital device, computer-generated and three-dimensional experiential environment good for learning experiences that expand learners' efficiency to gain more

knowledge, boost students' creativity, and sustain interest in boring subjects. Unlike traditional user interfaces that only allow users to view the screen, modern virtual reality headset displays are based on technology developed for smartphones. VR allows the user to step inside an experience, to be immersed and interact with a 3D world that can either simulate or differ completely from the real world. The author further stated that virtual reality is effective for learning programmes, increases knowledge area, is an active experience rather than just passive information, helps to understand complex concepts, subjects, or theories, has no distractions while the study is going on, and also boosts students' creativity. The author further noted that VR cameras can be used to create content with photography of virtual elements to merge reality and fiction through special effects. VR cameras are available in various formats, with varying numbers of lenses installed in the camera.

Statement of the Problem

Technology has introduced new methods of teaching and learning through online for speedy retrieval of information, educational materials, and facts for research. Many countries have exploited the potential of technology in education, while developing countries like Nigeria are also exploiting technologies in the area of education to improve the quality of education in institutions of learning. But how effective is the utilization of online learning in business education programs? Hence, business education departments have the required internet facilities to enhance e-learning. The importance of internet has been abused by students using smartphones for non-academic issues, watching films and chatting while lectures are going on. Students have abused the importance of internet facilities to the detriment of their studies. Students have been found using the internet for examination malpractice and cyber-crime. Based on these observations, the researchers decided to examine the extent to which new technologies are utilized in tertiary institutions in Niger Delta States of Nigeria.

Purpose of the Study

The major purpose of this study was to examine new technologies needs in teaching business education in tertiary institutions in Niger Delta State of Nigeria. Specifically, the study sought to:

1. Determine the extent of utilization of e-learning in teaching business education in tertiary institutions in Niger Delta States of Nigeria.
2. Determine the extent of utilization of virtual realities in teaching business education in tertiary institutions in Niger Delta States of Nigeria.

Research Questions

1. What is the extent of utilization of e-learning in teaching business education in tertiary institutions in Niger Delta States of Nigeria?
2. What is the extent of utilization of virtual realities in teaching business education in tertiary institutions in Niger Delta States of Nigeria?

Method

The survey design was adopted to gather information from business educators in tertiary institutions in Niger Delta State of Nigeria regarding the extent of utilization of e-learning and virtual realities. The tertiary institution includes universities, polytechnic and colleges of education offering business education programme. A total of 105 business educators from selected tertiary institutions in Niger Delta States were randomly selected for the study. Two research questions were developed to guide the study. The researcher developed a twenty item questionnaire of a four-point rating scale of Very High Extent (VHE) = 4 Points, High Extent (HE) = 3 points, Moderate Extent (ME) = 2 points, and Low Extent (LE) = 1 point, was used for data collection. The instrument was validated by two Associated Professors of Business education. A pilot study was carried out using ten (10) business educators who were not part of the study group. A reliability index of .67 was obtained using Cronbach's alpha approach. The questionnaire was administered to 105 business educators through a contact person from each selected institution via e-mail, 105 copies were returned in groups via speed post and social media. Data collected was processed by the use of statistical package for social science (SPSS) version 20. The research questions were answered using mean and standard deviation. Any response from 3.00 and above were accepted while below 3.00 were rejected.

Results

Research Question 1: What is the extent of utilization of e-learning in teaching business education in tertiary institutions in Niger Delta States of Nigeria?

Table 1: Mean and Standard Deviation on Utilization of e-learning by Business Educators in tertiary institutions in Niger Delta State of Nigeria. N = 105

S/N	E-learning utilization in Business Education	X	SD	Decision
1	Use of computer in teaching	3.04	0.62	HE
2	Modern technologies provide an environment that makes learning take place outside the classroom, even in the remote places	3.57	0.94	VHE
3	Communication with students via social media platforms is effective	2.81	0.42	ME
4	You give course content, test and assignment online	1.32	1.64	LE
5	You give lectures and tutorials online	1.49	0.51	LE
6	Students submit assignment online	1.65	.048	LE
7	Often your students write examinations online	1.39	0.43	LE
8	Your students access their result online	3.29	0.61	HE
9	e-learning enable teaching/learning to take place at any time	3.00	0.90	HE
10	The use of computer makes writing and submission of assignment easier for lecturers to read and mark compare to the use of biro and paper	3.29	0.73	HE
	Grand mean	2.51	0.84	HE

Source data collected 2021

From the data presented in table 1, it is revealed that the mean response on item No 1,2, 8, 9 and 10 by business educators were very high while the mean response on item No 3,4,5,6, and 7 were below 3.00 which was the cut-off point. Also the grand mean indicates a low extent response by business educator in tertiary institution in Niger Delta State of Nigeria.

Research Question 2: What is the extent of utilization of virtual realities in teaching business education in tertiary institutions in Niger Delta States of Nigeria?

Table 2: Mean and Standard Deviation on Utilization of Virtual Realities by Business Educators in tertiary institutions in Niger Delta State of Nigeria. N = 105

S/N	Virtual Realities Utilization in Business Education	X	SD	Decision
1	How often do you use modern technologies to search internet materials for effective teaching/ learning and active experience rather than just passive information	3.55	0.52	VHE
2	What extent have you used VR to teach and enhance understanding of complex concepts, subjects, or theories in business education.	2.92	0.91	ME
3	The use world wide web (www) for social connectivity boosts creativity in lesson delivery	2.33	1.36	ME
4	The use of e-learning groups enable information sharing which increases interest in boring subjects	2.97	0.50	ME
5	How often do you access and download internet resources for update of academic purpose to Improve Student's Imagination power	3.53	0.86	VHE
6	How often do you use modern electronic gadgets to facilitate social connectivity to improve memory power by connecting feelings with education	3.22	0.87	HE
7	Lesson videos improve understanding/experiential knowledge of business education students	3.56	0.86	VHE
8	VR improve teaching skills and deep content knowledge of business education	3.30	0.62	HE
9	How frequent do you compare your lecture notes to available internet materials to up-date effective instructional delivery of business education courses	3.50	0.96	VHE
10	The use of whatsapp platform is used for dissemination of educational information.	2.50	1.07	LE
	Grand mean	3.31	0.86	HE

Source data collected 2021

From the data presented in table 2, it is revealed that the mean response on item No 1,5, 6,7,8 and 9 by business educators were very high while the mean response on item No 2,3,4, and 10 were below 3.00 which was the cut-off point. Also the grand mean indicates a high extent response by business educator in tertiary institutions in Niger Delta States of Nigeria.

Discussion of Findings

E-learning and Business Education: the analysis in Table 1 revealed that business educators in tertiary institutions in Niger Delta States of Nigeria utilization of e-learning was of low extent as a result of low usages of modern gadgets and technologies which enhances effective delivery of subject content with aim to increase students' knowledge and active participation in the class. Groups and online tutorials were not effectively adopted, giving assignment and examinations online has never been experimented, and their response rates were below the cut-off point. However, the mean response rate of item No 1,2, 8, 9 and 10 are in line with Martin, and Bolliger (2018) who stated that incorporating technology into teaching is a great way to actively engage students, especially as digital media surrounds young people in the 21st century. The use of networked computers, modern gadgets, new technologies, interactive whiteboards or mobile devices are used for effective teaching/learning of complex concepts and subjects; the use of images and videos to display information also increase knowledge/understanding; and it also enables students visualize new academic concepts. Learning can become more interactive when technology is used as students can mentally and physically be engaged during lessons as well as instant research material and ideas, and also carryout school assignment and homework.

Virtual Realities and Business Education: the data presented in Table 2 revealed a grand mean rate of the respondent between 3.22 – 3.56 which are higher than the cut-off point value of 3.00. This implies that virtual reality technology is an effective instructional tool which when effectively used will increase knowledge area; activate participation/experience rather just passive information. The study is in line with Warschauer, Mark, Matuchniak and Tina (2010) who stated that virtual reality is a fully digital, computer-generated and three-dimensional experiential environment good for learning experiences which expand learner's efficiency to gain more knowledge, boosts students creativity and increases interest in boring subjects. The author further noted that virtual reality headset displays are based on technology developed for smartphones used for learning. The study is also in line with Madjidi, Hughes, Johnson, and Cary (2014) who noted that the uses of virtual reality in education has displayed capabilities of promoting higher order thinking, promoting the interest and commitment of students, acquisition of knowledge, promoting mental habits, improve the understanding level of students, improve teaching skills for teachers; improved memory power by connecting feelings with education, it takes very little time to understand very complex topics and understanding the general usefulness of academic context.

Conclusion

A greater percentage of teaching and learning of business education programmes in tertiary institutions in Niger Delta States of Nigeria is characterised by traditional methods, the use of pen and paper for instructional delivery, and a very low percentage of new technology utilization. Hence, the study examined the extent of utilization of new technology by business educators in Nigeria, and the findings of the study showed that the extent of new technology application in tertiary

institutions in the study environment was relatively low. The data in tables 1 and 2 are details of new technology needs for effective instructional delivery of business education. The findings of the study also revealed that new technologies will enhance increase knowledge area, active experience rather than just passive information, it will improve the understanding level of students, helps understand complex concepts, subjects, or theories, expands learner's efficiency to gain knowledge and increase interest in boring subjects and imagination power.

Recommendations

Based on the findings of the study the following recommendations were made:

1. Digital library and equipment should be provided and students encouraged to access these facilities to enable the learner effectively carry out their academic activities.
2. The use of computer for effective teaching and learning should be a standard for business education programme and a must for every student to have a computer.
3. Tertiary institution authorities and government should properly address the issue of provision of modern gadgets (new technology needs) for effective teaching and delivery of business education.
4. Business educators must embark on current training and re-training on ICT competencies programmes in order to fit into the use of new technologies.

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