



LEVEL OF APPLICATION OF VIRTUAL LEARNING PEDAGOGICAL DESIGN BY BUSINESS EDUCATORS IN TERTIARY INSTITUTIONS IN ANAMBRA STATE

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Abstract

This study ascertained the level of application of virtual learning pedagogical design by business educators in tertiary institutions in Anambra State. One research question guided the study and two null hypotheses were tested. Descriptive survey research design was adopted for the study. The population of the study comprised 99 business educators from public tertiary institution in Anambra State. No sampling was done due to the relatively small size of the population. The instrument for data collection was a structured questionnaire titled “Level of application of Virtual-learning Pedagogical Design Questionnaire” (LAVPDQ) which was validated by three experts. Cronbach alpha was used to determine the reliability of the instrument and it yielded reliability coefficient of 0.88. The researchers together with two research assistants collected data for the study using direct approach method and 91% return rate was recorded. Mean and standard deviation were used to answer the research question while t-test was used in testing the hypotheses at 0.05 level of significance. The findings of the study revealed among others that business educators apply virtual learning pedagogical design at a moderate level in tertiary institutions in Anambra State. Based on the findings, it was recommended among others that business educators should reduce their over reliance on traditional teaching method so as to re-align students with market need. Lecturers should from time to time avail themselves the opportunity to get acquainted with the state-of-the-art technology by attending the training programmes, workshops and seminars.

Keywords: Virtual learning, pedagogical designs, business education, business educators

Introduction

Business education is an academic program offered in tertiary educational institutions geared towards the acquisition of knowledge and skills needed in the place of work (Oladunjoye, 2016). The recent developments, globalization and changing demands for new skill sets in the job market have necessitated the need for a new teaching and learning paradigm. Interestingly, the 21st century is characterized by technological innovations that are applicable in education. The adoption of technology and its application to education has paved way for constructive teaching and learning with considerable and convenient evaluative process. The choice of Virtual learning over the long known traditional teaching has shaped the learning outcome by improving teaching and learning within higher education (Holley, 2013).

Virtual learning is a system constructed through internet which incorporates a number of same virtual models for tests, homework, classes, classrooms and academic fields. Akudolu (2012) opined that virtual learning is an e-learning process in which a learner stays in one place and explores as well



as interacts with knowledge anywhere and anytime through electronic means. This pre-supposes the implementation of study activities online where tutors and learners are physically separated (in terms of place, time or both). Virtual learning offers a possibility to the attendees to share different resources at once and work with them as if they were at the same place where (real) resources are. According to Skhephe, Mantlana and Gobingea (2020) virtual classroom is a learning environment which is created (and subsequently sustained) within a computer-generated space. Virtual learning environment allows communications and information sharing with other participants and instructors' and provides access to a wide range of assets and resources.

The principal mechanisms of a VLE package contain curriculum planning (breaking curriculum into sections that can be assigned and assessed), students tracking, online care for both teacher and learner, electronic communication (e-mail, threaded discussions, chat, web publishing) and internet links to external curriculum resources (Kinley, 2010). VLE hardware necessities consists of a basic computer system with the regular input devices, CD-ROMs or DVDs, sound boards or cards, speakers, video boards, high-speed central processors, extensive secondary storage or hard disk (Fu, 2013). VLE basic technologies contain text, maps, graphics images, video-conferencing, digital audio and video, web learning environment, videoconferencing systems. (Buabeng-Andoh, 2012)

Application of virtual learning allows teachers to track if learners are engaging with the internet-based communication and related materials by submitting evaluations online and providing quick feedback (Kinley, 2015). In the study conducted by Barker and Gossman (2013) it has found that virtual learning could maximize student reflection and encourage progressive thought and independent thinking. Virtual classroom represents the interface between the students and a virtual professor and provides personalized learning materials to the users. Personalized learning materials can be created only if the system adapts to the student needs shown in the student's interaction process. On the other hand, virtual laboratory offers a possibility to the attendees to share different resources at once and work with them as if they were at the same place where (real) resources are.

Virtual learning environments are designed for supporting and improving the individual study process by offering a repository for course documents, discussion forums, chat boxes, mass communication option, among others. The significance of a VLE is to entirely bring out the characteristics of both learning anywhere and anytime i.e. learning in an asynchronous manner. The application of VLEs in instructional delivery provide a lot of advantages over traditional education. For instance, it provides teachers the opportunity to interact with students via web-technology from all over the world, as long as they find internet (Arslan & Kaysi, 2013; Van Beek 2017). Therefore students should be exposed to virtual learning approach in order to improve their learning outcomes. Proper adoption and application of virtual learning as an important factor in this information age, holds a great promise for improving teaching and learning in educational institutions.

In educational institutions, the application of virtual learning entails the use of a whole range of technologies involved in information processing and electronic communication such as computers, internet, e-mail, computer software, satellite, mobile communication gadgets and other allied electronic devices for dissemination of knowledge and information. According to Eze, Okoli and Ehushie (2017), the gains derivable from the utilization of these facilities and technologies in teaching and learning are innumerable. It focuses on the use of ICT in teaching and learning and requires that instructors or teachers must have a clear understanding of the tools used in creating the content and developing components of online courses. This includes knowledge of pedagogical design, process analysis design as well as development and implementation of these designs in the classroom. Pedagogical Design (PD) is the process of analyzing learning goals, specifying the expected learning outcomes and organizing both the learning content and resources in a manner to ensure the achievement of the stated goals (Akudolu, 2012). Pedagogical design simply means the interactive process between teachers and learners through the planning or working out of ICT resources. This implies that virtual learning pedagogical design aims at bridging the gap between the learning content and technology to



ensure effective learning. It is the platform through which learning occurs as the learner comes in contact with both the content and the technologies.

In Nigeria, the awareness to advance online learning started gaining momentum two decades ago (Ahmad 2012). Today, many tertiary institutions have set up their ICT centers having Local Area Network (LAN) in their libraries, finance departments, MIS units, and some faculties/departments, among others (Ilechukwu and Njoku 2014). With these developments, it has become imperative to holistically look at applying virtual learning pedagogical design in tertiary institutions particularly where today's learners are surrounded with digital media and are used to the digital world. Recent developments brought about by globalization and changing demands for new skill sets in the job market have necessitated the adoption of a new teaching and learning paradigm. Obidile, Obi and Ikpat (2019) opined that varying modes of delivery options should be accessible to every Nigerian so as to equip them with the necessary skills needed for self-reliance. However, since the field of ICT continues to evolve, new and sophisticated technologies are emerging and this makes associated activities of online learning complex to delve into (Odoi, Ussiph & Panford 2019). It is therefore recommended that the application of virtual learning pedagogical design in tertiary institutions should be done gradually because it involves several groups of interest like students, lecturers, technicians and policy makers among others.

In addition, other several challenges are facing tertiary institutions in developing countries including Nigeria as they seek to apply e-learning in instructional delivery. Some of these challenges are associated with the demographic variables of the individuals involved in the application of e-learning pedagogical designs in instructional delivery. Some of these demographic factors includes; age, gender, teaching experience, e-learning experience among others. However, in this study, two demographic factors are considered, namely; gender and age.

Gender is a factor that could come to focus in the context of an e-learning application. Business educators used in the study are males and females of different age brackets which may influence their application of e-learning pedagogical designs. For instance, Mcknight-Tutein and Thackaberry (2011) asserted that there was a strong body of evidence which suggested that females learn differently from males, which make females inherently more successful in the e-learning environment. Mcknight-Tutein and Thackaberry believed that females are uniquely positioned to be effective learners because they use affective learning methods which includes learning with music, laughter, progressive relaxation, among others, that allow them to learn in relational ways by drawing on connections. On the contrary, Chiaha, Eze and Ezeudu (2013) discovered that gender does not affect the utilization of e-learning facilities in tertiary institutions in south-east Nigeria because male and female lecturers were exposed to the same environmental learning conditions when they were students. However, this study sought to examine the level at which male and female lecturers applied e-learning pedagogical designs in instructional delivery and to discover if gender differences observed by other researchers are similar to that of this study. Therefore, considering gender in this study could yield useful practical information to the study. In addition, these lecturers are of different age brackets which may influence their application of e-learning pedagogical designs.

In respect of age, literature is replete with suggestions that age is a factor that might moderate teachers' use of technology. The age of the business educators captures the digital divides (the digital natives and the digital migrants). According to Zur and Zur (2011), digital native is a term for people born in the digital era while digital migrants refer to those born before about 1964 and who grew up in a pre-computer world. In this study, business educators between the ages of 35 and below are referred to as digital natives (those born in the present digital era) while business educators above 35 are termed digital immigrants (those born in the analogue era). Tarhini, Hone and Liu (2014) found that age plays an important role in the acceptance of technology because age moderates the relationship between perceived ease of usefulness, perceived usefulness, social norm, self-efficacy and behavioural intention. In contrast, Fleming, Becker and Newton (2017) found no moderating effect of age on imparting either future use intentions or satisfaction with e-learning. Aldowah, Umar, Ghazal



(2019) also failed to find a moderating effect of age on e-learning technology related experience. Therefore, age is one of the predictors for applying e-learning pedagogical designs in instructional delivery, thus the need to consider age in this study. Among the factors critical to successful implementation of VLEs is teachers' competence in utilizing ICT infrastructures to impart the required knowledge to the students. VLE users are assigned either a teacher ID or a learner ID generally. The teacher sees what a learner sees, however the teacher has extra user privileges to produce or revise curriculum and watch students. However, teachers' competence and acceptance of the package are very important. This agrees with Technology Acceptance Model (TAM).

Technology Acceptance Model (TAM) was postulated by Fred Davis and Richard Bagozzi in 1989. The theory is an information system theory that models how users come to accept and use ICT in the classroom. The model proposes that when users are presented with a novel technology, a number of factors influence their choice of using it. Such factors as Perceived Usefulness (PU) which is all about the degree to which a person believes that using a particular system would enhance his or her job performance as well as Perceived Ease-of-Use (PEOU) refers to the degree to which a person believes that using a particular system would be easy and effortless. This means that the more the person thinks of a technology as being easy to use, the greater probabilities he or she will be willing to adopt and use such technology.

Consequently, Davis and Bagozzi reasoned that the key to the use of any new technology was to first understand and accept the usefulness of the technology in question, which could be assessed by asking individuals about their future intentions to use the new technology. The more positive the responses to the factors of perceived usefulness and perceived ease of use, then the more positive attitudes of teachers will be to the use of ICT and the more likely they will be to use ICT in their teaching.

The positive attitudes of business educators towards the usefulness and ease of use of virtual learning pedagogical design, will interest and motivate them to apply it in instructional delivery. Furthermore, this model will enable business educators to understand the usefulness and the ease of application of virtual learning pedagogical design and that it is a new pedagogy that facilitates teaching and learning which can help minimize the burden of teaching which was previously teacher-centered, non-interactive and all-demanding on the part of the lecturers. They will see the need to apply virtual learning pedagogical design which is usually student-centered, interactive and less demanding on their part for instructional delivery. Unfortunately, most business educators are not trained with modern office equipment and technologies and thus still depend only on traditional methods for delivering their lessons to students even when learning topics are suitable for e-learning approach.

Overtime, business educators have predominantly delivered instructions using only the conventional/face to face teaching method. This teaching method subjects students to passive learners rather than active learners where they contribute to knowledge. This unsatisfactory state of affairs has far-reaching consequences for business education programme and its graduates as they might lack technological competencies required to perform effectively in the current era. Consequently, students might lack the requisite digital skills needed for jobs in the 21st century labour market because they were not exposed to modern technologies in the teaching/learning process. This ugly situation seems to put doubt on the level of business educators' application of virtual learning pedagogical design for instructional delivery which in most cases seems to be non-existence. Hence, the need for the study.

Research Question

1. What is the level of application of virtual learning for instructional delivery by business educators in tertiary institutions in Anambra State?



Hypotheses

The following null hypotheses were tested at 0.05 level of significance:

1. Male and female business educators in tertiary institutions in Anambra State will not differ significantly on their level of application of virtual learning for instructional delivery.
2. Business educators in tertiary institutions in Anambra State will not differ significantly on their level of application of virtual learning for instructional delivery as a result of age (35yrs and below, and above 35yrs).

Method

Descriptive survey research design was utilized for the study. According to Nworgu (2015), a survey design is one in which a group of people or items are studied by collecting and analyzing data from only a few people or items considered to be representative of the entire group. The design was deemed appropriate, since the researchers collected data from the population of the study and draw inferences on business educators' level of application of virtual-learning pedagogical designs for instructional delivery in tertiary institutions in Anambra State. The study was carried out in public tertiary institutions in Anambra State. The population of the study comprised all the 99 business educators in all four public tertiary institutions in Anambra State. This is according to data collected from Academic Planning Unit of each institution. There was no sampling due to the relatively small size of the population of the study. A 16-items researcher developed questionnaire titled "Level of Application of Virtual learning Pedagogical Design Questionnaire (LAVPDQ)" was used for data collection. The questionnaire is divided into two sections of A and B. Section A sought to elicit respondents' personal data such as gender and age while section B consisted of 8 items on virtual learning. Respondents were required to indicate their opinions on a five point rating scale of Very High Level (VHL); High Level (HL); Moderate Level (ML), Low Level (LL) and Very Low Level (VLL) weighed 5, 4, 3, 2 and 1 respectively.

Three experts face validated the instrument. Cronbach alpha coefficient measure of internal consistency was used to determine the reliability of the instrument and a coefficient of 0.88 was obtained. 99 copies of the questionnaire were administered to the respondents by the researcher and two research assistants and 90 copies were retrieved on completion which gave a retrieval rate of 91%. The data generated was analyzed through descriptive statistics of Mean and Standard deviation to answer the research question. Inferential statistics (t-test) was employed to test the hypotheses at 0.05 level of significance.

Results

What is the level of application of virtual learning in instructional delivery by business educators in tertiary institutions in Anambra State?

Analysis of data relating to this research question is presented in Table 1



Table 1. Legend

Mean responses of Business Educators on level of application of virtual learning N = 90				
S/No	Items on Virtual Learning	Mean	SD	Decision
9.	Engaging students in synchronous communication activities using virtual chat	2.82	1.37	Moderate level
10.	Engaging students in asynchronous communication activities using CD-ROM or DVD.	2.77	1.29	Moderate level
11.	Providing instructions to students through online forums.	2.95	1.38	Moderate level
12.	Providing instructions to students through instant messaging.	3.08	1.25	Moderate level
13.	Providing instructions to students through digital videos.	2.65	1.33	Moderate level
14.	Using web authoring tools to develop instructional modules that engage students.	2.60	1.37	Moderate level
15.	Providing instructions by video conferencing through Skype.	2.44	1.38	Low level
16.	Providing instruction by a software installed on a local computer through the web or online.	2.62	1.43	Moderate level
Cluster Mean		2.74		Moderate level

Data in Table 1 show a cluster mean of 2.74 which reveals that business educators in tertiary institutions in Anambra State apply virtual learning in instructional delivery at a moderate level. Item by item analysis in Table 2 shows that business educators applied items 9, 10, 11, 12, 13, 14, and 16 with mean scores ranging from 2.60 – 3.08 at a moderate level while business educators apply item 15 with mean score 2.44 at a low level. The standard deviations of 1.25 to 1.43 are within the same range showing homogeneity in business educators’ responses.

Table 2. Legend

Summary of t-test result on the level of application of virtual learning by male and female business educators in tertiary institutions in Anambra State. N = 90

Virtual learning	N	X	SD	df	P-value	Decision
Male	33	2.69	1.14	88	.922	Not significant
Female	57	2.78	1.21			

Data in Table 2 shows that male and female business educators in tertiary institutions in Anambra State do not differ significantly on their level of application of virtual learning in instructional delivery. This is shown by the p-value of .922 which is greater than the significant level of 0.05. This shows that there is no significance difference in the mean responses of business educators. Therefore, the null hypothesis of no significant difference between two groups is accepted.



Table 3. Legend

Summary of t-test result on the level of application of virtual learning by business educators in tertiary institutions in Anambra State as a result of age.

Virtual learning	N	X	SD	df	P-value	Decision
35 years and Below	33	2.60	1.29	88	.207	Not significant
Above 35 years	57	2.82	1.12			

Data in Table 3 shows that business educators in tertiary institutions in Anambra State do not differ significantly on their level of application of virtual learning in instructional delivery as a result of age. This is shown by the p-value of .207 which is greater than the significant level of 0.05. This shows that there is no significance difference in the mean responses of business educators. Therefore, the null hypothesis of no significant difference between two groups is accepted.

Discussion of findings

The results of the study revealed that business educators in tertiary institutions in Anambra State applied virtual learning in instructional delivery at a moderate level. This corroborates with that of Choeda, Dorji and Par-Ola (2016) who reported that the status of ICT integrated pedagogy especially virtual learning in higher education is at early stage and is affected by low-speed internet connectivity and a lack of adequate resources as well as training. In support, Rashid, Shukor, Tasir and Na (2021) found that teachers were moderately ready to use virtual learning environment and they moderately accepted the implementation of virtual learning. Educators have realized the usefulness and the ease of use of virtual learning which in turn have influenced their acceptance of virtual learning as a mode of instructional delivery in the 21st century.

The result of the third hypothesis indicated that male and female business educators in tertiary institutions in Anambra State do not differ significantly on their level of application of virtual learning in instructional delivery. This disagrees with Park, Kim and Han (2019) who reported a moderating effect of gender difference between perceived usefulness on intention to use in Technology Acceptance Model (TAM). Park, Kim and Han further noted that the effect of perceived usefulness on intentions to use is greater for male who tend to be highly task-oriented. Also the fourth hypothesis revealed that age has significant effect on the mean responses of business educators in tertiary institutions in Anambra State on their level of application of virtual learning in instructional delivery. This also disagrees with Wang, Wu and Wang (2009) who found that age differences moderate the effect of effort expectancy and social influence on virtual learning use intention.

Conclusion

Based on the findings of the study, it is clear that virtual learning pedagogical design discussed in the study is still at its early stage of adoption and application among business educators. This is a sad development bearing in mind that ICT is not a new topic in Nigeria. The popularity of ICT technologies among business education students has increased their expectations to see these technologies used in the teaching learning process. Unfortunately, business educators are still lagging behind in the application of these pedagogical designs for instructional delivery. Also the new normal as a result of Covid-19 pandemic requires the full adoption and application of these pedagogical designs for instructional delivery in tertiary institutions.

Recommendations

1. Business educators should increase their level of application of virtual learning in instructional delivery in the tertiary institutions to equip students with the requisite digital skills needed for jobs in the 21st century labour market.



2. Business educators should reduce their over reliance on traditional teaching method and integrate modern technologies in instructional delivery so as to re-align students with the market need.
3. Business educators should from time to time avail themselves the opportunity to get acquainted with the state-of-the-art technology (especially those born in the pre-computer world) by attending the training programmes, workshops and seminars.

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