



DIGITAL TECHNOLOGY SKILLS REQUIRED FOR TEACHING AND LEARNING OF BUSINESS EDUCATION COURSES IN TERTIARY INSTITUTIONS IN PLATEAU STATE

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Abstract

The study examined digital technology skills required for teaching and learning of business education courses in tertiary institutions. The study was guided by one research question and one hypothesis of no significant difference. Descriptive survey design was adopted. The population of the study consisted of 54 lecturers drawn from tertiary institutions offering business education courses in Plateau state. The entire population was adopted as the sample in view of the small size. The main instrument for data collection was a four-point rating scale questionnaire, with 20 items, tagged; Digital Technology Skills Required for Teaching and Learning of Business Education Courses Questionnaire (DTSRTLBEQC). The data collected were analyzed using mean and standard deviation. The mean was used to answer the research questions while the standard deviation was used to determine the closeness or otherwise of the responses from the mean. The null hypothesis stated was tested using the independent t-test at 0.05 level of significance. The finding revealed that lecturers required to a high extent, digital technology skills for teaching and learning of business education courses in tertiary institutions. The findings further revealed that there was no significant difference between the mean ratings of highly experienced and less experienced lecturers on the digital technology skills required for teaching and learning business education courses in tertiary institutions ($t_{52} = 0.764, P > 0.05$). The study concluded that the design of effective learning environments and embedding digital technologies are critical. This can serve as catalysts for teachers to experiment new things, explore creative alternatives and reflect on their own practices. Based on the findings and conclusion of the study, it was recommended among others that the authorities of tertiary institutions should ensure adequate implementation of policies that will propel the adoption, development and deployment of digital technologies for teaching and learning in the areas of improved infrastructure, adequate funding, re-training programmes and quality assurance.

Keywords: *Digital Technology; Digital Skill; Teaching and learning; Business Education*

Introduction

The digital world is increasingly penetrating the education and skills domain, with technology gradually being used to deliver education, knowledge and skills in new and



innovative ways. This penetration is coupled with future changes to the mode and pattern of work, which are themselves affected by the current climate of economic uncertainty, as well as by political shifts. Zakka, Bewaran and Moris (2020) report that the effective application of digital technologies in teaching will facilitate the realization of the stated objectives of the educational programme, by improving innovativeness, curiosity and creativity of the learners. Given the increased use of fast changing digital technologies in the workplace, new skills need have emerged. The rapid evolution of digital technologies and the increasing complexity that comes with its exploding potential, explains why digitalization in business education continues to receive special attention. Digital technologies also drive innovation in many different spheres of life. The innovative capacity of technology is very much conditioned by the level of digital skills of the population (Kyari, Adiuku-Brown, Abechi & Adetakun, 2018). No wonder there is a very strong correlation between education and skills and the uptake and use of digital technologies in various spheres of life.

Broadly, digital technologies include the use of personal computers, digital television, radio, mobile phones, robots etc. The term is used to describe the use of digital resources to effectively find, analyze, create, communicate, and use information in a digital context. This includes the use of web tools, digital media tools, programming tools and software applications. Similarly, Bates (2011) observes that digital technology includes all types of electronic equipment and applications that use information in the form of numeric code. This information is usually in binary code—that is, code that can be represented by strings of only two numeric characters (0s and 1s). Devices that process and use digital information include personal computers, calculators, automobiles, traffic light controllers, compact disc players, cellular telephones, communications satellites, and high-definition television sets.

Digital technology skill on the other hand involves the ability, confident, critical and responsible use of, and engagement with, digital technologies for learning, at work, and for participation in society. It includes information and data literacy, communication and collaboration, digital content creation (including programming), safety (including digital well-being and competences related to cyber security), and problem solving (UNESCO, 2020). This definition emphasizes engagement with digital technologies, the growing importance of digital technology use for education purposes and the need to actively promote digital technologies in teaching and learning and seize technological opportunities so that education can keep up with other sectors. Similarly, Heinz (2016) views digital competence as the confident, critical and creative use of digital technologies to achieve goals related to work, employability, learning, leisure, inclusion and/or participation in society. Krumsvik in Ottestad (2014) provides a definition of digital skill specifically for teachers: “Digital skill is the teacher’s ability to use ICT with a good pedagogical-didactic ICT understanding and to be aware of how this might impact the learning strategies and educational formation of pupils”. This means that the teacher must make decisions about what kind of digital tools should be used in each teaching situation, how they should be used and why. In order to attain these skills, the



individual needs to acquire basic training or knowledge levels related to the task to be performed whether through formal, informal or combination of the two.

Teaching and learning is an act whereby the teacher imparts or transfers knowledge, behaviour, skills, values or preferences to a learner and the learner acquires or modifies what is taught and learnt to a potential change in synthesizing information, depth of the knowledge, attitude or behaviour relative to the type and range of experience (Akpomi, 2018). It is a system involving the teacher, the learner and the learning task as well as the learning environment. Teaching therefore is a set of events, outside the learners which are designed to support internal process of learning, while learning is about a change: the change brought about by developing a new skill, understanding a scientific law, changing an attitude.

Business education involves teaching students the fundamentals, theories and processes of business. Education at this stage occurs at several levels including secondary education and higher education with the greatest activity occurring in the latter. Business education typically prepares students for an occupation in business or a business related field or a teaching career in academics (Dhaka in Inalegwu, 2018). Thus business education helps individuals to acquire saleable skills that will enable them fit into various business organizations or be self-employed in the absence of paid employment. Business education as a discipline is expected to expose its recipients to diversity of curricula, hence, it is that type of education that inculcate in its recipient attitudes, knowledge, skills, values that is required in the business world (Olupayimo, 2018). A well-articulated business education, if properly implemented with efficiently delivered infrastructure can help bridge the skill gaps existing between the school graduates and the requirements of the corporate business organizations thereby reducing the huge cost of human resource development in business organizations.

Digitalization has created a glaring need for business education lecturers to acquire relevant skills in order to bring up the caliber of graduates that will fit squarely into the digital work trends (Zakka, Bewaran & Moris, 2021). It is globally recognized that the use of digital technologies in teaching and learning is a relevant and functional way of providing education to learners that will assist in imbuing in them the required capacity for the world of work. In addition, effective application of digital technologies in teaching will facilitate the realization of stated objectives of any educational programme through improve innovativeness, curiosity and creativity of the learners.

However, a lot of challenges are witnessed in the utilization of digital technologies especially in public tertiary institutions in Nigeria. Ezeabii, Ile and Ezugwu (2018) note that most lecturers and students of business education have not been making effective use of digital resources in their academic work. The hindrances and constraints come as a result of manpower shortage/wastage, shortage of technological facilities, lack of knowledge and use of computer aided instructions. Added to this is the fact that most digital facilities are not available in the tertiary institutions and where they exist, they are either not functional or inadequate and lecturers and students do not employ digital technologies for teaching or learning. Umoru (2015) reports that in



Nigeria, many business education teachers lack skills in technology application as a result of which they face their work with fear and trepidation. Furthermore, the students of this generation are adept and superbly familiar with new technologies, especially social media platforms. This situation compounds teachers' problems as they are challenged the more to adopt and as a result, they become isolated and confused. It is against this backdrop that the study examines digital technology skills required for teaching and learning of business education courses in tertiary institutions in Plateau State.

Statement of the Problem

Effective teaching in any learning environment requires demonstration of various skills which invariably enable students to learn by improving their knowledge, skills, attitudes and values. The business education lecturers are vital in the impartation of required skills to the students through the acquisition and possession of the required digital technology skills.

However, Nwokocha and Onwuchekwa (2014) observe that despite the enthusiasm towards the use of digital technology and the huge investments in the acquisition of these tools, the potential of increased instructional effectiveness and an economic financial investment, the use of digital technologies seem to have little impact in the class room because some business education lecturers are showing signs of apathy towards digital technologies. Similarly, Okoli and Wagbara (2016) observe that many of the teachers lack knowledge and skills to use digital technologies and in addition are not enthusiastic about the changes due to inadequate training to meet up with technological flux. There is also the fear of the unknown which leads to resistant behavior (Chukwumerije, 2012). Nwosu and Mbaezue (2016) confirm that there is dearth of business education teachers with adequate skills in digital technologies, with the result that non-specialists are often called upon to teach business education courses.

The problem of this study therefore is to identify the digital technology skills required for teaching and learning business education courses in tertiary institutions in Plateau state. This is in view of the seeming incompetence of the lecturers in teaching using digital technologies.

Purpose of the Study

The purpose of the study is to identify the digital technology skills required for teaching and learning business education courses in tertiary institutions in Plateau State.

Research Question

To what extent are digital technology skills required for teaching and learning business education courses in tertiary institutions in Plateau State?



Research Hypothesis

There is no significant difference between the mean ratings of highly experienced and less experienced respondents on the digital technology skills required for teaching and learning business education courses in tertiary institutions in Plateau State.

Methods

The descriptive survey design was used for the conduct of the study. The population of the study consisted of all lecturers in the departments of business education and office technology and management in tertiary institutions in Plateau state. These institutions include Federal College of Education, Pankshin (24), College of Education, Gindiri (11) and Plateau State Polytechnic, Barkin Ladi (19). The entire study population of 54 was used for the study since the population was not too large. There was therefore no sampling. The instrument used was the Digital Technology Skills Required for Teaching and Learning Business Education Courses Questionnaire (DTSRTLBEQC). The questionnaire consisted of 20 items based on the purpose of the study and the research question. The instrument was validated by two senior lecturers in the Department of Business Education, Kwara State University Malete. A pilot study was conducted at the College of Education, Akwanga, Nassarawa state. Cronbach Alpha was used to determine the reliability of the instrument which yielded a reliability coefficient of 0.73. Each of the items was assigned four response options of High Extent (HE-4 points), Moderate Extent (ME-3 points), Low Extent (LE-2 points) and No Extent (NE-1 point). A total of 54 questionnaires were filled and returned consisting of 37 (68.52%) highly experienced lecturers (10 years and above of service) and 17 (31.48%) less experienced lecturers (1 – 9 years of service). The data collected were analyzed using the mean and standard deviation. The mean was used to answer the research question while the standard deviation was used to determine the closeness or otherwise of the responses from the mean. Positive decision rule for this study was established at a mean of 2.50 and above while any mean less than that was regarded as negative. The null hypothesis stated was tested using the t-test at 0.05 level of significance. Hypothesis of no significant difference was accepted when the observed probability value was greater than or equal to 0.05 level of significance. Where the calculated probability value was less than 0.05 level of significance, the null hypothesis was rejected.



Results

Table 1: Mean and standard deviation of responses on the extent to which digital technology skills are required for teaching and learning business education courses

S/ N	Item Statements	\bar{X}	SD	Remark
1.	Ability to use different internet connection options to connect to the web.	3.89	0.37	High Extent
2.	Ability to use interactive multimedia digital technologies for teaching and learning.	3.65	0.70	High Extent
3.	Ability to use the electronic mail (e-mail) or list server to mail teaching contents.	3.87	0.48	High Extent
4.	Ability to use the search engine such as yahoo, google, MSN to access teaching and learning contents.	3.63	0.78	High Extent
5.	Ability to use digital survey tools (SurveyMonkey, Zoomerang, etc.) for online survey and research.	3.20	0.83	Moderate Extent
6.	Ability to upload and download teaching and learning contents through file transfer service.	3.79	0.41	High Extent
7.	Ability to use digital student response systems for instant feedback during teaching and learning.	3.24	0.78	Moderate Extent
8.	Ability to use interactive e-books for educational purposes.	3.26	0.73	Moderate Extent
9.	Ability to use web applications such as web 2.0 tools for interactive teaching and learning.	3.72	0.56	High Extent
10.	Ability to use cloud computing for storing and sharing files.	3.63	0.71	High Extent
11.	Ability to select and guide students on selecting mobile educational apps for teaching and learning.	3.91	0.35	High Extent
12.	Ability to use social networking service to post teaching contents.	3.43	0.77	Moderate Extent
13.	Ability to use the wireless fidelity (Wi-Fi) to gain access to teaching resources via internet.	3.79	0.53	High Extent
14.	Ability to use collaborative services to post teaching contents.	3.31	0.64	Moderate Extent



15.	Ability to organize online conferences and discussion groups with students on the web.	3.59	0.77	High Extent
16.	Ability to use accessibility features of mobile devices such as voiceover, speak selection, zoom etc to view or listen to teaching contents.	3.48	0.61	Moderate Extent
17.	Knowledge of file systems, data security and cryptography in databases.	3.80	0.56	High Extent
18.	Ability to create hypertext and hypermedia pages for education use.	3.06	0.86	Moderate Extent
19.	Ability to use web database programming using PHP.	3.26	0.78	Moderate Extent
20.	Ability to use web components such as plug-ins, applets or add-on for teaching and learning.	3.02	0.96	Moderate Extent
Weighted average		3.53	0.66	High Extent

Table 1 above shows the responses of lecturers on the digital technology skills required for teaching and learning business education courses in tertiary institutions. The result revealed that all the digital technology skills items outlined were required to a high extent for teaching and learning of business education courses in tertiary institutions in Plateau State with a weighted average mean of 3.53. Items 5, 7, 8, 12, 14, 16, 18, 19 and 20 were however required to a moderate extent with mean scores of between 3.02 to 3.48. All the 20 items have standard deviation scores ranging from 0.37 to 0.96. This means that the responses of the respondents are not wide spread as they are close to the mean. This implies that digital technology skills are required to a high extent for teaching and learning of business education courses in tertiary institutions in Plateau State.

Test of Hypothesis

There is no significant difference between the mean ratings of highly experienced and less experienced respondents on the digital technology skills required for teaching and learning business education courses in tertiary institutions in Plateau State.

Table 2: Summary of t-test of the difference between the mean responses of highly experienced and less experienced lecturers on the digital technology skills required for teaching and learning business education courses

Group	N	Mean	SD	t-cal	Df	p-value	Decision
Highly experienced	37	3.65	0.47	0.764	52	0.447	NS
Less	17	3.58	0.20				



experienced
Source: Field survey, 2020
P>0.05

The data in Table 2 reveals that there are 37 highly experienced lecturers and 17 less experienced lecturers. The response of highly experienced and less experienced lecturers indicated that digital technology skills are required to a high extent for teaching and learning business education courses in tertiary institutions ($\bar{x} = 3.65$; SD = 0.47) and ($\bar{x} = 3.58$; SD = 0.20). Their responses are close to the mean as the standard deviations are very low. The table reveals that there was no significant difference between the mean ratings of highly experienced and less experienced lecturers on the digital technology skills required for teaching and learning business education courses in tertiary institutions ($t_{52} = 0.764$, $P > 0.05$). Therefore, the null hypothesis that states that there is no significant difference between the mean ratings of highly experienced and less experienced respondents on the digital technology skills required for teaching and learning business education courses in tertiary institutions in Plateau State was not rejected. This implies that highly experienced and less experienced lecturers did not differ in their responses regarding the digital technology skills required for teaching and learning business education courses in tertiary institutions.

Discussion of Findings

The study sought to determine the extent to which digital technology skills are required for teaching and learning business education courses in tertiary institutions in Plateau State. The null hypothesis stated that there is no significant difference between the mean ratings of highly experienced and less experienced respondents on the digital technology skills required for teaching and learning business education courses in tertiary institutions in Plateau State. The result showed that ability to use different internet connection options, interactive multimedia digital technologies, electronic mail (e-mail) or list server, search engines and file transfer services were required to a high extent. Other digital skills required to a high extent are ability to use web applications, cloud computing, mobile educational apps, wireless fidelity (Wi-Fi), ability to organize online conferences and knowledge of file systems and data security. Also the finding revealed that ability to use digital survey tools, digital student response systems, interactive e-books, social networking services, collaborative services, accessibility features of mobile devices, ability to create hypertext and hypermedia pages, ability to use web database programming and ability to use web components were required to a moderate extent for teaching and learning business education courses in tertiary institutions. The findings further revealed that there was no significant difference between the mean ratings of highly experienced and less experienced lecturers on the digital technology skills required for teaching and learning business education courses in tertiary institutions ($t_{52} = 0.764$, $P > 0.05$).



This finding corroborates that of Zakka, Bewaran and Moris (2021) who maintain that the knowledge and skills which business education lecturers require at present must reflect the growing use of digital technologies. This will aid in imparting the needed skills to students who can function effectively in a knowledge-driven economy. Heinz (2016) expresses a similar view and maintains that digital competence involves the confident, critical and creative use of digital technologies to achieve goals related to work, employability, learning, leisure, inclusion and/or participation in society. This means that the teacher must make decisions about what kind of digital tools should be used in each teaching situation, how they should be used and why.

Conclusion

Based on the findings of this study, it is concluded that the design of effective learning environments and embedding digital technologies are critical. This can serve as catalysts for teachers to experiment new things, explore creative alternatives and reflect on their own practices.

Recommendations

1. The implementation of policies that will propel the adoption, development and deployment of digital technologies for teaching and learning is critical. This can be achieved through regular review of the curriculum, improved funding for the provision of adequate teaching and learning equipment and the necessary infrastructure for teaching using digital technologies.
2. There is need for the systematic re-training of teachers to cope with the trend of digital technologies. Individual teachers should also make efforts towards self-analysis for personal skill development in the use of digital technologies. This can be done through job related re-skilling and up-skilling programmes, so as to help teachers acquire the necessary digital technology skills.
3. Management and heads of departments should ensure that technicians are always at hand to assist students and teachers who may encounter technical difficulties that may hinder and slow-down the teaching and learning process. Similarly, technologists will help the teachers with some difficult applications where necessary, as it may not be possible for an individual lecturer to be an expert in all aspects of digital technology applications.

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