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IMPACT OF INFORMATION AND COMMUNICATION TECHNOLOGY UTILIZATION ON TEACHING AND LEARNING OF BUSINESS EDUCATION IN TERTIARY INSTITUTIONS OF ANAMBRA STATE

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Abstract
This study investigated the impact of Information and Communication Technology (ICT) utilization by Business Education lecturers and students on the teaching and learning of Business Education in tertiary institutions in Anambra State. A descriptive survey design was employed. The population comprised all Business Education lecturers and students from all the four tertiary institutions - offering Business Education in Anambra State. A sample of 100 respondents (25 lecturers and 75 students) was purposively selected from two public colleges of education in Anambra State. Two validated questionnaires were used for data collection, and their reliability coefficients were established at 0.96 and 0.87 using Cronbach Alpha. Results indicated a significant relationship between ICT utilization and effective teaching and learning processes. The study concludes that enhancing ICT access and integration in teaching and learning can improve Business Education outcomes. Recommendations include increased provision of ICT infrastructure by relevant stakeholders.

Keywords: Information and Communication Technology (ICT), Business Education Utilization, Teaching, Learning

Introduction

Teaching and learning are the twin pillars of education; while teaching delivers knowledge, learning represents its internalization. Within vocational disciplines such as Business Education, instructors act as catalysts-facilitating behavioral change by applying subject expertise in ways that foster active learning and engagement. Effective teaching requires dynamic, two-way communication that leads to observable learning outcomes. Learning validates the teaching process-without it, teaching is incomplete. In

Business Education which combines theory with hands-on skill development, instructional design must foster practical application alongside conceptual understanding (Rao, 2008).

Teaching and learning are interdependent processes fundamental to educational achievement, especially in professional fields like Business Education. Teaching, often defined as a deliberate effort to impart knowledge and skills, goes beyond content delivery – it encompasses classroom management, assessment, mentoring, and instructional innovation (Gagne, 1985). Learning, on the other hand involves the internalization of knowledge and behavioral change resulting from instruction. In vocational education, effective learning is reflected in the development of applicable skills and competencies. Scholars like Vygotsky (1978) and Bruner (196)) emphasize that learning is maximized when instruction is scaffolded and contextual. In the context of Business Education, ICT can serve as a critical enabler of both effective teaching and meaningful learning, providing multimedia content, simulations, feedback tools, and global access to resources. Thus, any meaningful discourse on ICT utilization must directly connect to how it enhances teaching practices and improves learning outcomes. This relationship between teaching, learning, and technology is especially crucial in the Nigerian tertiary education system, where Business Education is designed to equip learners with market-relevant skills.

The Nigerian National Policy on Education (FRN, 2014) defines tertiary education as post-secondary education delivered across universities, colleges, and similar institutions. Its objectives according to FRN (2014), include fostering national development through manpower training, inculcate societal values, and promoting intellectual growth and vocational skills. However, many graduates of Business Education exit with inadequate ICT competencies, which limits their employability which is against the policy's mandate to produce workplace-ready individuals.

Business Education courses – such as Accounting, Office Technology and Management, and Marketing – demand integration of digital tools to facilitate practical training. The availability and utilization of ICT resources (e.g computers, internet, projectors, e-libraries) are fundamental to enhancing instructional quality and learner engagement. Business Education can be viewed as a course of study offered in tertiary institutions which is designed to provide learning situations for skill acquisition among students who could apply such skills in their occupations, in managing personal businesses, for personal living in society, and for nation-building. According to Ajisafe et al. (2015) Business Education is one of the occupational areas that are richly provided by Vocational and Technical Education in Nigeria. Business Education refers to a programme of instruction that offers various skills in Accounting, Marketing and Office Technology and Management (OTM). Major courses include; Office practice, financial accounting, business mathematics, business communication, secretarial duties, word processing, and advertising.

Furthermore, Business Education is the process by which individuals, organizations and society interact to improve their economic well-being through the exchange of products, services and ideas. The ability to make individual decisions based on choice is essential to this process (Robert, 2017). Business Education is increasingly demanded to fill the gap created by unemployment. The gap left by youths graduating from the nation's tertiary institutions must be addressed; otherwise, social vices and youth's restiveness would persist. Therefore, there is an unconditional need to deliver Business Education through a teaching/learning process with optimum utilization of Information and Communication Technology (ICT). This is one of the means by which the programme could achieve its lofty goals.

Information and Communication Technology (ICT) has become a transformative force in global education, economic development, and professional training. Defined as the integration of digital tools and resources – such as computers,

internet, broadcasting, and telephony – ICT supports data collection, processing, dissemination, and interactive communication (Mueen et al., 2013; Ufuophy & Ayobami, 2012); Ikwuka, 2013). In education, ICT enhances teaching effectiveness and learning engagement through simulations, online databases, e-mail, and virtual classrooms (Ajuluchukwu & Osakwe, 2019). Similarly, Okolocha and Nwadiani (2012) found that where ICT resources existed in South –south Nigerian tertiary institutions, they were seldom used in instruction. Their study further showed that ICT utilization significantly influences teaching quality, though power outages and resource constraints limit integration. Furthermore, Ojo and Bashir (2020) reported that technology positively impacts both teaching and learning of Business Education in tertiary institutions – with higher technology use correlating with improved lesson preparation and student performance. Despite its benefits, availability and usage levels vary significantly across institutions and countries (Anissimov, 2009). Against this backdrop, this study investigates the impact of ICT availability and utilization bu Business Education lecturers and students learning outcomes in tertiary institutions in Anambra State.

Statement of the Problem

In an ideal educational setting, Business Education in Nigerian tertiary institutions should be driven by the robust integration of Information and Communication Technology (ICT) to enhance practical skill acquisition, facilitate effective teaching, and prepare students for the demands of the modern economy. However, the reality presents a stark contrast: teaching and learning processes still rely heavily on printed textbooks and verbal instruction, with minimal use of multimedia, virtual platforms, or internet-based resources. This situation is worsened by insufficient ICT infrastructure and a lack of enabling support from government and institutional management. While global education systems have moved toward technology-enhanced learning, many Nigerian institutions, including colleges of education have

not received the necessary infrastructure, training, or digital content development. Consequently lecturers and students in Business Education programmes across cilleges of education in Anambra State are yet to fully utilize ICT tools, which undermines the effectiveness of instruction and limits students' technological competencies. This persistent gap necessitates an investigation into the actual impact of ICT utilization on teaching and learning of Business Education by lecturers and students in the State.

Purpose of the Study

The main purpose of this study is to determine the impact of utilization of ICT on teaching and learning of Business Education in tertiary institutions in Anambra State. Specifically, the study seeks to:

1. determine the influence of ICT resources utilization by Business Education lecturers on the teaching of Business Education in colleges of education in Anambra State,
2. assess the impact of ICT resources utilization by Business Education Students on their learning outcome in colleges of education in Anambra State.

Research Questions

The following research questions were raised to guide the study.

1. What is the influence of ICT resources utilization by Business Education lecturers on teaching and learning of Business Education in colleges of education in Anambra State?
2. What is the impact of ICT resources utilization by Business Education Students on the learning of Business Education in colleges of education in Anambra State?

Research Hypotheses

The following hypotheses were formulated for the study,

Ho_1: There is no significant influence of ICT resources utilization by Business Education lecturers on the teaching of Business Education in colleges of education in Anambra State,

Ho_2: There is no significant impact of ICT resources utilization by Business Education Students on their learning of Business Education in colleges of education in Anambra State.

Methods

A descriptive survey research design was adopted in this study. This design allowed the researchers the opportunity of generating data from lecturers and students through their objective opinions obtained through administration of questionnaire. The study was conducted in Anambra State of Nigeria. The state has potentials for business development in the areas of commerce, industry, tourism, agriculture, among others. Of course, education generally and Business Education in particular is the driving force that can ignite these sectors for productivity and national development. The population of the study comprised all Business Education lecturers and all students in four tertiary institutions offering Business Education in Anambra State. These institutions are: Federal College of Education (Technical), Umunze, Nwafor Orizu College of Education, Nsugbe, Nnamdi Azikiwe University, Awka, and Chukwuemeka Odimegwu Ojukwu, University, Uli.

A sample size of 100 comprising 25 Business Education lecturers and 75 Business Education students were purposively drawn from two institutions i.e. Federal College of Education (Technical), Umunze, and Nwafor Orizu College of Education, Nsugbe. The sample unit was determined using stratified random sampling technique. The researchers prepared two sets of structured questionnaires for data generation: one for lecturers titled "ICT Utilization by Lecturers of Business Education Questionnaire (ICTULBEQ)" and another for students titled ICT Utilization by Students of Business Education Questionnaire (ICTUSBEQ). The instruments were validated by three experts, comprising two Business Educators and one expert in Measurement and Evaluation from Imo State University, Owerri. A pilot test was conducted with 30 participants who were not part of the main study. ICTULBEQ and ICTUSBEQ yielded

reliability coefficients of 0.96 and 0.87 respectively using Cronbach Alpha and were deemed to be reliable. The researchers administered the questionnaires personally on-the-spot. The administration yielded 100% return rate. Descriptive statistics such as mean and standard deviation were used to answer the research questions while simple regression analysis was used to test the hypotheses at 0.05 level of significance. The results of the analysis were presented in line with the research questions and hypotheses. Any mean score below a benchmark of 2.5 was considered "not utilize" while mean score of 2.50 and above was considered "utilize".

Research Question One: What is the influence of the ICT resources utilization on the teaching of Business Education by lecturers in colleges of education in Anambra State?

Table 1: Means and Standard Deviations for influence of ICT Resources Utilization on Teaching-Learning as Perceived by Business Education Lecturers

S/N	Statements I use:	*X*	SD	Decision
1.	Computer System for my teaching	1.87	0.68	Not utilize
2.	Internet Facilities for concept search	2.54	0.75	Somewhat utilize
3.	Internet Modem to enhance search speed	1.31	0.56	Not utilize
4.	Digital Versatile Discs (DVD) for storage	1.18	0.50	Not utilize
5.	Television Sets for visual display	1.19	0.52	Not utilize
6.	Smart Phones for accessibility of online information	1.98	0.34	Not utilize
7.	Power Supply for optimal function of devices	2.14	0.35	Somewhat utilize
8.	Podcast for lecture delivery	1.07	0.28	Not utilize
9.	Cell phone to make calls for concept clarifications	3.81	0.54	utilize
10.	Projector for presentation of lecture slides	1.74	0.63	Not utilize

Table 1 shows that 6 items out of the 10 listed ICT facilities, six were considered not utilize, two were somewhat utilize, and two were utilize according to lecturers' responses. This concludes that ICT equipment is generally underutilize for the teaching and learning of Business Education courses in tertiary institutions Anambra State. The standard deviation values support this result showing there is consensus on the opinion of the lecturers regarding the effect of ICT tools utilization on the teaching and learning of Business Education programme.

Research Question Two: What is the impact of ICT resources utilization by Business Education students on their learning outcome of Business Education in colleges of education in Anambra State?

Table 2: Mean and Standard Deviation for the impact of ICT resources Utilization on learning outcomes of Business Education Students.

S/N	Statements: I have used	*X*	SD	Decision
11.	Laptop Computer to enhance my keyboarding skill	1.1	0.40	Not utilized
12.	Interactive Board to improve my learning engagement	1.75	0.62	Not Utilized
13.	Satellite Dish for search on abstract concepts	1.03	0.25	Not Utilized
14.	E-library for wider knowledge on relevant courses	2.21	0.47	Somewhat
15.	Desktop Computers for hands-on practices	1.35	0.54	Not Utilized
16.	Digital Unit for storage of practical activities	2.87	0.57	Somewhat
17.	Closed Circuit Television Cameras micro teaching	2.98	0.47	Somewhat
18.	Teleconferencing Devices for online peer-to-peer	1.15	0.45	Not Utilized
19.	Film and Projectors for presentation of projects	1.17	0.37	Not Utilized
20.	Internet Services for online real-time activities	2.24	0.47	Somewhat

Table 2 reveals that 6 out of the 10 ICT tools were regarded by the respondents as not utilized, while 4 were somewhat utilized. None of the items were rated as fully utilized in the learning of Business Education courses by the students. This implies that ICT tools are largely underutilized in the teaching and learning of Busines Education in tertiary institutions in Anambra State.

Research Hypotheses

Null Hypothesis One (HO_1): There is no significant effect of the ICT resources utilization on the teaching of Business Education by lecturers in tertiary institutions in Anambra State. This hypothesis was tested using simple regression analysis. Summary data is presented on table 3.

Table 3: Regression Summary for the Effect of ICT Utilization by Lecturers on Teaching-Learning of Business Education

Variable	SS	df	Ms	fcal	fcri
Regression	.528	1	528	28.99	6.96
Residual	.5430	98	18.22		
	.5958	99			

*N = 100 *significant <.05*

The result presented in Table 3 shows that the calculated F-value (28.99) is greater than the critical value (6.96) at a 0.05 level of significance and degrees of freedom (1, 98). Hence the null hypothesis is rejected, indicating a significant effect of the ICT resources utilization by lecturers on teaching of Business Education. The coefficient of determination (R^2 = 0.5376) suggests that ICT tools utilization explains 53.76% of the variation in teaching and learning outcomes.

Null Hypothesis Two (H_{O2}): There is no significant effect of the ICT utilization by students on their learning outcome of Business Education. Simple regression analysis was used to test this hypothesis and summary data is shown on table 4.

Table 4: Regression Summary for the Effect of ICT Utilization by Students on the Learning Outcome of Business Education

Regression coefficient (R) = 0.5985
R^2 = 0.3375
Standard Error = 4.9537

Variable	SS	df	Ms	fcal	fcri
Regression	487	1	487		
Residual	7730	98	25.94	18.77	6.96
Total	8217	99			

*N = 100 *significant <.05*

The data in Table 4 show that the calculated F-value (18.77) is greater than the critical F-value (6.96) at 0.05 level of significance and degrees of freedom (1, 98). Hence, the null hypothesis is rejected. This implies that there is a statistically significant effect of the utilization of ICT resources by students and learning outcome of Business Education in tertiary institutions in Anambra State. The R^2 value of 0.3375 indicates that approximately 33.75% of the variation in students' learning outcomes can be explained by the utilization of ICT resources. This suggests that enhanced usage of ICT facilities has a positive influence on student learning in Business Education.

Discussion of Findings

The findings of this study are discussed in relation to the results presented in Tables 1 to 4 and relevant existing literature. Table 1 examined the utilization of ICT resources as reported by Business Education lecturers, the data revealed that out of ten listed ICT items, six were rated as not utilize, two as somewhat utilize and only two have been used. Notably, essential tools like internet facilities, modems, podcasts, and digital media were largely not in use in the institutions perhaps due to non-availability of these resources. Despite this, the regression analysis in Table 3 revealed a significant effect of ICT resources utilization on the teaching of Business Education, with an F-value of 28.99 exceeding the critical value of 6.96 at the 0.05 level of significance. The R^2 value of 0.5376 indicates that approximately 53.76% of the variation in teaching effectiveness is attributable to the utilization of ICT resources. This finding suggests that where ICT resources are in use, lecturers are better positioned to deliver effective instruction. This aligns with Ojo and Bashir (2020), who noted that technology positively impact both teaching and learning of Business Education in tertiary institutions-with higher technology use correlating with improved lesson preparation and student performance. However, earlier study reports that lecturers underutilize ICT (Usang et al., 2007), the present study support the assertion perhaps due to minimal availability of ICT resources in teaching. This suggests that when institutions prioritize ICT access, lecturers are more likely to integrate digital tools into their teaching processes, thereby enhancing delivery and student comprehension.

Table 2 assessed ICT utilization from the perspective of students. The responses indicated that 7 out of the 10 items were not utilized, while 3 were somewhat utilized. No ICT tool was reported as fully utilized. Items like laptops, internet services, teleconferencing devices, and digital projectors had particularly low availability and usage levels. Table 4 presents a significant regression result, the computed F-value of 18.77 is greater than the critical value of 6.96 at a 0.05 level of significance. This led to

the rejection of the null hypothesis and indicates a statistically significant effect of ICT usage on students' learning outcome. The R^2 value of 0.3375 shows that ICT usage accounts for 33.75% of the variation in students' learning outcomes in Business Education. This implies that increased utilization of ICT tools can directly enhance the learning experiences of students. These results confirm findings by Tarus et al. (2015), who emphasized the impact of expanding ICT infrastructure and e-learning resources on improving educational outcomes in tertiary institutions. Furthermore, the findings resonate with Adewoye and Salau (2023), who found a positive and statistically significant relationship between ICT adoption and teaching-learning effectiveness. Similarly, Umoren et al. (2007) found that most Nigerian students in tertiary institutions had limited access to ICT resources, which could undermine their learning capacity due to poor utilization.

Overall, the regression analyses in Table 3 and 4 confirm that the utilization of ICT resources plays a significant role in shaping the teaching and learning of Business Education in Anambra State's tertiary institutions. However, the findings from Table 1 and 2 highlight a critical gap – the overall low utilization of ICT tools.

Conclusions

Based on the findings of this study, it is concluded that the usage of ICT resources have a significant positive impact on the teaching and learning of Business Education in tertiary institutions in Anambra State. Improved access to ICT tools enhances instructional effectiveness for lecturers and improves learning outcomes for students. This underscores the importance of ensuring adequate ICT infrastructure in institutions offering Business Education programmes.

Recommendations

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

1. ICT facilities should be made available by departments and institutions offering Business Education to enhance teaching and learning.

2. Both lecturers and students should be encouraged and supported to acquire personal computers.
3. Government and stakeholders should invest in additional ICT – infrastructure- such as broadband internet, projectors, and digital classrooms – to address the current inadequacies in ICT availability in tertiary institutions.

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