

Assessing The Impact Of Information And Communication Technology (ICT) On Teaching And Learning Of Business Education In Colleges Of Education In North Central, Nigeria

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Abstract

This study assessed the impact of information and communication technology on teaching and learning of Business Education in Colleges of Education in North Central, Nigeria. The study employed descriptive survey research design. The population of the study was 598 Business Education lecturers and graduating students from six Colleges of Education in the North Central Nigeria. Using Taro Yamane formula, a sample size of 236 was determined. The study used structured questionnaire titled "Assessment of the Impact of Information and Communication Technology on Teaching and Learning of Business Education Questionnaire" (AIICTTLBEQ) in data collection. The instrument was validated by three experts. A pilot study was conducted in Kwara State College of Education, Lafagi and the reliability of the instrument was using Cronbach Alpha yielding coefficient of 0.89. Simple percentages, frequency counts, means and standard deviations was used in data analysis, while t-test was used in testing the null hypotheses at significance level of 0.05. Based on the findings, the study concluded that information and communication technology (ICT) play a pivotal role in enhancing the learning outcomes of business education students in Colleges of Education in North Central, Nigeria. The integration of ICT into business education not only boosts student's motivation and engagement but also facilitates the application of theoretical concepts to real-world business scenarios. The study recommended among others that Colleges of Education should organize regular training workshops for business education lecturers to enhance their ICT skills and integrate technology effectively into their teaching practices.

Key Word: *Information and Communication Technology, Teaching and Learning, Business Education*

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I. Introduction

Over the past few decades, the rapid advancement and integration of Information and Communication Technology (ICT) have revolutionized various aspects of our lives, and Business Education is no exception. Information and communication technologies (ICT) is defined as a diverse set of technological tools and resources used to transmit, store, create, share or exchange information. These technological tools and resources include computers, the Internet (websites, blogs and emails), live broadcasting technologies (radio, television and webcasting), recorded broadcasting technologies (podcasting, audio and video players, and storage devices) and telephony (fixed or mobile, satellite, vision/video-conferencing among others) (UNESCO, 2017). It refers to technologies that provide access to information through telecommunications. It is similar to information technology (IT) but primarily focused on communication technologies. This includes the Internet, wireless networks, cell phones, and other communication media (Shokeen & Ruwali, 2022). Business Education is the foundation upon which students build an awareness of business and an understanding of business concept. Business Education also fosters the acquisition of general or basic knowledge and understanding of business, essential for all persons regardless of age, occupation, profession, social or economic status (David & Abiola, 2022). At the tertiary level, the term Business Education is sometimes considered as synonymous with education in the broad areas of business administration in which the objective is primarily preparatory for professional careers in the management and administration of business enterprises (David & Abiola, 2022). Achieving these objectives in digital age requires adequate knowledge, skills and competencies in ICT. The impact of ICT in Business Education has been profound, reshaping traditional learning approaches and empowering both Business educators and learners with innovative tools and resources (Lisedunetwork, 2023). Through the seamless

integration of computers, the internet, mobile devices, and other digital technologies, ICT has opened up boundless opportunities to enhance the teaching and learning of Business Education experience.

This transformative shift has fostered personalized learning, improved accessibility, encouraged collaboration, and ignited a newfound enthusiasm for Business education, propelling students and business educators alike into an era of limitless possibilities. As ICT continues to evolve, its role in business education will undoubtedly continue to shape the future of learning and equip learners with the skills and knowledge necessary to thrive in the digital age. Information and communication technologies in business education prepare students for a variety of careers in technical business offices.

Statement of the Problem

The integration of Information and Communication Technology (ICT) into the teaching and learning processes of Business Education represents a significant paradigm shift in contemporary education. While there is a growing consensus on the potential benefits of ICT in enhancing educational outcomes, there is a critical need for an in-depth assessment of its actual impact within the specific context of Business Education in tertiary institutions. Despite the increased investment in Information and Communication Technology infrastructure and educational technology tools, there remains a lack of comprehensive research that examines the extent to which these technologies have truly transformed pedagogical approaches, improved learning outcomes, and addressed the unique challenges within the domain of Business Education in tertiary institutions in Nigeria. It is against this background that the study intends to assess the impact of Information and Communication Technology in teaching and learning of Business Education in Colleges of Education in North Central, Nigeria.

Objectives of the Study

- i. To assess the role of ICT in teaching and learning of Business Education in Colleges of Education in North Central, Nigeria;
- ii. To assess the utilization of ICT resources in teaching and learning of Business Education in Colleges of Education in North Central, Nigeria;
- iii. To identify strategies for effective use of ICT in teaching and learning of Business Education in Colleges of Education in North Central, Nigeria

Research Questions

- i. What is the role of ICT in teaching and learning of Business Education in Colleges of Education in North Central, Nigeria?
- ii. How are ICT resources utilized in the teaching and learning of Business Education in Colleges of Education in North Central, Nigeria?
- iii. What are the strategies for effective use of ICT in teaching and learning of Business Education in Colleges of Education in North Central, Nigeria?

Research Hypotheses

H₀₁: There is a significant difference in the mean response of lecturers and students on the role of Information and Communication Technology (ICT) in the teaching and learning of Business Education in Colleges of Education in North Central, Nigeria.

H₀₂: There is a significant difference in the mean response of lecturers and students on how ICT resources are utilized in the teaching and learning of Business Education in Colleges of Education in North Central, Nigeria

H₀₃: There is a significant difference in the mean response of lecturers and students on the effective strategies for the use of ICT in the teaching and learning of Business Education in Colleges of Education in North Central, Nigeria.

II. Literature Review

Concept of Information and Communication Technology

Information and communication technology (ICT) is derived from three concepts namely information, communication and technology. When these concepts are jointly used it is known and addressed as information and communication technology (ICT). Information and communication technology as widely known is globally used in virtually in all sectors of life (Ezeani & Falade, 2018). According to Enyekit, Owaji, Obayo and Enyekit (2015), ICT is the system that is used in processing, storage and transfer of information which can be audio, visual or both in the form of numbers, letters and pictures. To Utoware, Kren-Ikidi and Apreala (2015), ICT are represented by tools like computers, internet and intranet, general system of devices and mobile technologies. It refers to technologies that provide access to information through telecommunications. It is similar to information technology (IT) but primarily focused on communication technologies. This includes the Internet, wireless networks, cell phones, and other communication media. This means that nowadays we have more opportunities

to use ICT in teacher training programs and improve teacher quality to teach effectively (Shokeen & Ruwali, 2022).

Concept of Teaching and Learning

Teaching and learning are concepts central to education and any academic setting. The concept of teaching and learning has no universal definition. Different educationists hold different views regarding the concept of teaching and learning. Munna and Kalam, (2021) defined teaching and learning as transformation process of knowledge from teachers to students. Teaching and learning is intimate contact between a more mature personality and a less mature one which is designed to further the education of the latter (Isola, 2019). Teaching and learning is the practice implemented by a teacher aimed at transmitting skills (knowledge, know-how, and interpersonal skills) to a learner, or any other audience in the context of an educational institution.

Concept of Business Education

The term Business Education has been viewed differently by scholars. A generally accepted definition has been difficult to arrive at because research and theoretical formulations have continued to grapple with the problem, providing as many definitions as there are experts. Business Education is also viewed as a course that offers knowledge and competencies required for entering into business occupations of all sorts and prospering in them. Business education, which encompasses several disciplines, enables people to think, speak and behave in ways that support the growth, efficiency and effectiveness of organizations (Sulyman & Philo, 2014). Okoli (2013) sees Business Education as an important part of the general education which emphasizes skills and competency acquisition. It is a programme of study which encompasses education for office, occupations, business teaching, administration and economic understanding.

Impact of Information and Communication Technology on Teaching and Learning of Business Education in Tertiary Institutions in Nigeria

Information and Communication Technology (ICT) has exerted a profound impact on the teaching and learning of business education in Nigerian tertiary institutions. The integration of essential ICT tools has transformed the teaching-learning process in Business Education, making it more dynamic, engaging, and effective. These tools have empowered business educators to deliver personalized instruction and foster collaborative learning environments. For business education students, ICT tools have opened doors to a wealth of knowledge and interactive learning experiences in business education. Embracing these essential ICT tools in business education prepares students for the challenges of the digital age, equipping them with critical skills that will serve them well beyond the classroom or world of work. A study conducted by Okoro (2013) indicates the prospects of teaching ICT in facilitating interaction between lecturers and students; ICT enhances effective storage of business information; ICT facilitates the retrieval of business information. The study also revealed constraints facing the teaching of ICT such as inadequate ICT facilities/equipment; frequent electricity interruption of ICT facilities and poor implementation of ICT policies (Onuotu, Princewill & Allen, 2020).

III. Material And Methods

The study employed a descriptive survey research design, focusing on a population of 598 individuals, which included Business Education lecturers and graduating students from six Colleges of Education in the North Central Zone of Nigeria. Using Taro Yamane formula, a sample size of 236 was determined. Six Colleges of Education were selected through simple random sampling, with specific numbers of respondents from each institution: Niger State College of Education Minna (10 lecturers, 59 students), College of Education Katsina-Ala, Benue State (7 lecturers, 28 students), Federal College of Education, Okene (6 lecturers, 26 students), Federal College of Education, Pankshin, Plateau State (5 lecturers, 25 students), Kwara State College of Education, Oro (10 lecturers, 15 students), and College of Education Akwanga, Nasarawa State (11 lecturers, 34 students). Data collection was facilitated using a structured questionnaire titled "Assessment of the Impact of Information and Communication Technology on Teaching and Learning of Business Education Questionnaire" (AICTTLBEQ). The instrument was validated by three experts from relevant One from Department of Entrepreneurship and Business Education, Kwara State University, Malete, one from Department of Computer Education, University of Nigeria Nsukka, and one from Department of Educational Foundation, Niger State College of Education, Minna. A pilot study was conducted with 30 questionnaires distributed to 8 lecturers and 22 students from Kwara State College of Education, Lafiagi, to test the instrument's effectiveness. Reliability was assessed using the test-retest method over two weeks, yielding a Cronbach Alpha coefficient of 0.89. Data analysis was done using simple percentages, frequency counts, means and standard deviations, while t-test was used in testing the null hypotheses using SPSS version 20, with a significance level set at 0.05 for testing null hypotheses

IV. Result

Table 1: Gender Distribution of Respondents

Gender	Frequency			Percentage (%)
	Lecturers	Students	Total	
Male	36	112	148	63
Female	13	75	88	37
Total	49	177	236	100

Source: Field Survey, 2024

Table 1 shows the demographic data of the gender of the respondents. The table revealed that 148 representing 63% of the respondents were male lecturers and students, while the remaining 88 representing 37% of the respondents were female lecturers and students. The analysis indicates that both male and female lecturers and students participated in the study,

Table 2: Age Distribution of Respondents

Age Range	Frequency	Percentage (%)
18 - 25 years	115	48.7
26 - 30 years	62	26.3
31 - 35 years	4	1.7
36 - 40 years	12	5.1
41 - 45 years	26	11
46years and above	17	7.2
Total	236	100

Source: Field Survey, 2024

Table 2: shows the demographic distribution of the Age of Respondents. The table indicates that 115 representing 48.7% of the respondents were between the ages of 18-25years, 62 representing 26.3% of the respondents were between the ages of 26-30, 4 representing 1.7% of the respondents were between the ages of 31-35, 12 representing 5.1% of the respondents were between the ages of 36-40, 26 representing 11% of the respondents were between the ages of 41-45, while the remaining 17 representing 7.2% of the respondents were between the ages of 46years and above.

Table 3: Educational Qualification of Respondents

Age Range	Frequency	Percentage (%)
SSCE	177	75
NCE	-	-
HND/B.Sc/B.Ed	11	4.7
MSc/M.Ed	25	10.6
PhD	13	5.5
Total	322	100

Source: Field Survey, 2024

Table 3 shows the demographic data of the respondents based on their highest qualification. The table indicates that 177 representing 75% of the respondents were SSCE holders, 11 representing 4.7% of the respondents were HND/BSc/B.Ed holders, and 25 representing 10.6% of the respondents were MSc/MEd holders, while the remaining 13 representing 5.5% of the respondents were PhD holders.

Research Question 1: What is the role of ICT in teaching and learning of Business Education in Colleges of Education in North Central, Nigeria?

Table 4: Descriptive Statistics on the role of ICT in teaching and learning of Business Education in Colleges of Education in North Central, Nigeria

Statement	Mean	Std. Dev.	Decision
ICT plays crucial roles in enhancing the learning outcomes of Business Education students.	3.40	0.586	Accepted
ICT integration in Business Education courses helps to improve student motivation and engagement.	3.32	0.649	Accepted
ICT resources are essential for effective teaching and learning of Business Education in Colleges of Education.	3.20	0.752	Accepted
ICT integration in Business Education courses enhances the ability of students to apply theoretical concepts to real-world of business.	3.09	0.830	Accepted
The use of ICT in Business Education courses does not promotes collaborative learning among students.	2.11	0.611	Rejected
ICT-enabled teaching methods in Business Education courses help to develop critical thinking and problem-solving skills among students	3.22	0.645	Accepted

The integration of ICT in Business Education courses allows for personalized and self-paced learning among students	3.15	0.730	Accepted
The use of ICT in Business Education courses enhances the delivery of up-to-date and relevant content to students	3.23	0.709	Accepted
The use of ICT in teaching and learning of Business Education improve retention level of students	3.16	0.692	Accepted
The use of ICT in Business Education courses does not prepares students for the technological demands of the modern business environment	2.09	0.511	Rejected

Source: Field Survey, 2024

From Table 4 revealed that ICT plays a crucial roles in enhancing the learning outcomes of Business Education students, with a mean of 3.40 and a standard deviation of 0.586, supporting the assertion. ICT integration in Business Education courses also improves student motivation and engagement (mean 3.32, SD 0.649), and is essential for effective teaching and learning in Colleges of Education (mean 3.20, SD 0.752). Furthermore, ICT enhances students' ability to apply theoretical concepts to real-world business contexts, with a mean of 3.09 and a standard deviation of 0.830. The use of ICT does not promotes collaborative learning (mean 2.09, SD 0.511) and helps develop critical thinking and problem-solving skills (mean 3.22, SD 0.645). It also allows for personalized, self-paced learning (mean 3.15, SD 0.730) and ensures the delivery of up-to-date and relevant content to students (mean 3.23, SD 0.709). Additionally, ICT use improves student retention levels (mean 3.16, SD 0.692) and ICT does not prepares students for the technological demands of the modern business environment (mean 2.09, SD 0.511). In each instance, with means of 8 items exceeding the benchmark, while two items (5 and 10) below the benchmark, 8 assertions were accepted while the remaining 2 were rejected.

Research Question 2: How are ICT resources utilized in the teaching and learning of Business Education in Colleges of Education in North Central, Nigeria?

Table 5: Descriptive Statistics on how ICT resources are utilized in the teaching and learning of Business Education in Colleges of Education in North Central, Nigeria

Statement	Mean	Std. Dev.	Decision
Colleges of Education in North Central Nigeria utilize ICT facilities (e.g., computers, projectors, internet connectivity) for teaching and learning of Business Education.	2.96	0.887	Accepted
ICT resources in Colleges of Education in North Central, Nigeria are regularly maintained and updated to support the teaching and learning of Business Education.	2.84	0.801	Accepted
Business Education lecturers in Colleges of Education in North Central Nigeria have sufficient access to ICT resources for lesson preparation and delivery.	2.66	0.807	Accepted
Business Education students in Colleges of Education in North Central Nigeria have adequate access to ICT resources for learning and completing assignments.	2.11	0.611	Rejected
ICT resources available in Colleges of Education in North Central Nigeria are effectively utilized by both students and lecturers in the teaching and learning of Business Education.	2.72	0.954	Accepted
Colleges of Education in North Central Nigeria provide regular training and support to lecturers on the effective integration of ICT in the teaching of Business Education.	2.90	0.823	Accepted
Colleges of Education in North Central Nigeria have clear policies and guidelines for the utilization of ICT resources in the teaching and learning of Business Education.	2.09	0.511	Rejected
ICT resources in Colleges of Education in North Central Nigeria are accessible to all students and lecturers, regardless of their level of ICT proficiency.	2.66	0.924	Accepted
Colleges of Education in North Central Nigeria provide adequate technical support for the maintenance and troubleshooting of ICT resources used in the teaching and learning of Business Education.	2.09	0.511	Rejected
Colleges of Education in North Central Nigeria have a dedicated ICT unit or department that oversees the integration of ICT in the teaching and learning of Business Education.	2.83	0.922	Accepted

Source: Field Survey, 2024

From Table 5, it shows that ICT resources in Colleges of Education in North Central Nigeria are regularly maintained and updated to support the teaching and learning of Business Education. The mean of the responses is 2.84 with a standard deviation of 0.801. Since the mean is greater than the benchmark mean of 2.50, the assertion is accepted. Similarly, Business Education lecturers in Colleges of Education in North Central Nigeria have sufficient access to ICT resources for lesson preparation and delivery. The mean of the responses is 2.66 with a

standard deviation of 0.807, indicating that the assertion is accepted. Business Education students in Colleges of Education in North Central Nigeria have adequate access to ICT resources for learning and completing assignments. The mean of the responses is 2.11 with a standard deviation of 0.611, and thus the assertion is rejected. The ICT resources available in Colleges of Education in North Central Nigeria are effectively utilized by both students and lecturers in the teaching and learning of Business Education. The mean of the responses is 2.72 with a standard deviation of 0.954, meaning the assertion is accepted. Colleges of Education in North Central Nigeria provide regular training and support to lecturers on the effective integration of ICT in the teaching of Business Education. The mean of the responses is 2.90 with a standard deviation of 0.823, and the assertion is accepted. Colleges of Education in North Central Nigeria have clear policies and guidelines for the utilization of ICT resources in the teaching and learning of Business Education. The mean of the responses is 2.09 with a standard deviation of 0.511, confirming the assertion as rejected.

ICT resources in Colleges of Education in North Central Nigeria are accessible to all students and lecturers, regardless of their level of ICT proficiency. The mean of the responses is 2.66 with a standard deviation of 0.924, so the assertion is accepted. Colleges of Education in North Central Nigeria provide adequate technical support for the maintenance and troubleshooting of ICT resources used in the teaching and learning of Business Education. The mean of the responses is 2.09 with a standard deviation of 0.511, thus the assertion is rejected. Finally, Colleges of Education in North Central Nigeria have a dedicated ICT unit or department that oversees the integration of ICT in the teaching and learning of Business Education. The mean of the responses is 2.83 with a standard deviation of 0.922, leading to the acceptance of the assertion. 7 items out of the 10 were accepted, while the remaining 3 were rejected

Research Questions 4: What are the strategies for effective use of ICT in teaching and learning of Business Education in Colleges of Education in North Central, Nigeria?

Table 6: Descriptive Statistics on the strategies for effective use of ICT in teaching and learning of Business Education in Colleges of Education in North Central, Nigeria

Statement	Mean	Std. Dev.	Decision
Regular training workshops need to be conducted for lecturers on ICT use.	2.92	0.861	Accepted
There is need for clear policies on the integration of ICT in Business Education.	2.93	0.795	Accepted
The curriculum need to be reviewed regularly to include ICT competencies.	2.91	0.830	Accepted
There is need for collaboration with ICT experts to enhance teaching and learning of business education	2.82	0.881	Accepted
Adequate funding is needed for ICT initiatives in business education.	2.73	0.920	Accepted
There is need for effective monitoring and evaluation system for ICT use in teaching and learning of business education.	2.66	0.945	Accepted
Lecturers need to be encouraged to innovate with ICT tools.	2.98	0.853	Accepted
Students should be given opportunities to suggest ICT improvements.	2.64	0.894	Accepted
There is need for dedicated team for ICT support in the college.	2.74	0.970	Accepted
Provision of personal computers for lecturers is needed	2.71	01.057	Accepted

Source: Field Survey, 2024

From Table 6, it is evident that regular training workshops need to be conducted for lecturers on ICT use, with a mean of 2.92 and a standard deviation of 0.861, thus accepting the assertion. There is need for clear policies on the integration of ICT in Business Education, supported by a mean of 2.93 and a standard deviation of 0.795. The curriculum need to be reviewed regularly to include ICT competencies (mean 2.91, SD 0.830), and there is need for collaboration with ICT experts to enhance the teaching and learning of Business Education (mean 2.82, SD 0.881). Adequate funding is needed for ICT initiatives in Business Education, as indicated by a mean of 2.73 and a standard deviation of 0.920. Additionally, there is need for effective monitoring and evaluation system for ICT use in teaching and learning (mean 2.66, SD 0.945), and lecturers are encouraged to innovate with ICT tools, reflected by a mean of 2.98 and a standard deviation of 0.853. Students also have opportunities to suggest ICT improvements, with a mean of 2.64 and a standard deviation of 0.894. Furthermore, there is a dedicated team for ICT support in the college (mean 2.74, SD 0.970), and personal computers are provided for lecturers (mean 2.71, SD 1.057). Since all means exceed the benchmark, all the assertion were accepted.

Test of Hypotheses

H01: There is a significant difference in the mean response of lecturers and students on the role of Information and Communication Technology (ICT) in the teaching and learning of Business Education in Colleges of Education in North Central, Nigeria.

Table 7: Summary of t-test analysis on the role of information and Communication Technology (ICT) in the teaching and learning of Business Education in Colleges of Education in North Central, Nigeria

Variables	No	Mean	SD	Df	T-Cal	T-Tab	L.Sig	Remarks
Lecturers	49	3.58	0.66					
Students	177	3.66	0.69	234	0.54	1.93	0.05	Not Sig.

Source: Field Survey, 2024

Table 7 show that the calculated t-value of 0.54 at 261 degrees of freedom and at 0.05 level of significance is less than the critical value of 1.93. This shows that ICT plays a role of Information and Communication Technology (ICT) in the teaching and learning of Business Education in Colleges of Education in North Central, Nigeria. Therefore, the null hypothesis was accepted.

HO2: There is a significant difference in the mean response of lecturers and students on how ICT resources are utilized in the teaching and learning of Business Education in Colleges of Education in North Central, Nigeria

Table 8: Summary of t-test analysis on how ICT resources are utilized in the teaching and learning of Business Education in Colleges of Education in North Central, Nigeria

Variables	No	Mean	SD	Df	T-Cal	T-Tab	L. Sig	Remarks
Teachers	49	3.30	0.61					
Students	177	3.35	0.69	234	0.51	1.91	05	Not Sig.

Source: Field Survey, 2024

Table 8 show that the calculated t-value of 0.51 at 261 degrees of freedom and at 0.05 level of significance is less than the critical value of 1.91. Therefore, the null hypothesis which states that there is a significant difference in the mean response of lecturers and students on how ICT resources are utilized in the teaching and learning of Business Education in Colleges of Education in North Central, Nigeria was accepted.

HO3: There is a significant difference in the mean response of lecturers and students on the effective strategies for the use of ICT in the teaching and learning of Business Education in Colleges of Education in North Central, Nigeria.

Table 9: Summary of t-test analysis on effective strategies for the use of ICT in the teaching and learning of Business Education in Colleges of Education in North Central, Nigeria

Variables	No	Mean	SD	Df	T-Cal	T-Tab	L.Sig	Remarks
Lecturers	49	3.57	0.64					
Students	177	3.65	0.67	234	0.52	1.92	0.05	Not Sig.

Source: Field Survey, 2024

Table 9 show that the calculated t-value of 0.52 at 261 degrees of freedom and at 0.05 level of significance is less than the critical value of 1.92. Therefore, the null hypothesis which states that effective strategies for the use of ICT in the teaching and learning of Business Education in Colleges of Education in North Central, Nigeria was accepted.

V. Discussion

The interpretation of research question 1 indicates that ICT significantly enhances the learning outcomes of Business Education students. ICT integration in Business Education courses boosts student motivation and engagement, facilitates the application of theoretical concepts to real-world situations, and promotes collaborative learning. ICT-enabled teaching methods foster critical thinking and problem-solving skills, allow for personalized and self-paced learning, and ensure the delivery of current and relevant content. Overall, the use of ICT improves student retention and prepares them for the technological demands of today’s business environment. The interpretation of research question 2 indicated that Colleges of Education in North Central Nigeria utilize various ICT facilities, such as computers, projectors, and internet connectivity, for teaching Business Education. While these ICT resources are regularly maintained and updated, both lecturers and students face challenges due to insufficient access for lesson preparation and completing assignments. Although the available ICT resources are effectively utilized, there is a lack of clear policies and guidelines governing their use. Additionally, while regular training is provided to lecturers on integrating ICT into their teaching, technical support for maintenance and troubleshooting is inadequate. Overall, the colleges have a dedicated ICT unit overseeing integration efforts, but access to resources remains limited for effective teaching and learning in Business Education. The interpretation of research question 3 further revealed that regular training workshops is need to be conducted for lecturers on ICT use, there is need for clear policies on the integration of ICT in Business Education, the curriculum need to be reviewed regularly to include ICT competencies, there is need for collaboration with ICT experts to enhance

teaching and learning of business education, adequate funding is needed for ICT initiatives in business education, there is need for effective monitoring and evaluation system for ICT use in teaching and learning of business education, lecturers need to be encouraged to innovate with ICT tools, students should be given opportunities to suggest ICT improvements, there is need for dedicated team for ICT support in the college, provision of personal computers for lecturers is needed. The finding above is in agreement with that of Onuotu et al, (2020) who established that the use of technologies in Business Education is capable for making the programme accessible to large recipients and producing the needed manpower of 21st century ICT driven business world. The finding also supported that of Okogi (2023) who established a significant correlation between the availability of ICT resources and the academic performance of Business Education students in Delta State tertiary institutions.

VI. Conclusion

Based on the findings, this study concluded that Information and Communication Technology (ICT) play a pivotal role in enhancing the learning outcomes of business education students in Colleges of Education in North Central Nigeria. The integration of ICT into business education not only boosts student's motivation and engagement but also facilitates the application of theoretical concepts to real-world business scenarios. The study also concluded that constraints such as inadequate availability of facilities, unreliable electricity supply, insufficient training for lecturers, and a lack of clear policies governing ICT integration, inadequate access for both students and lecturers, as well as poor maintenance and support for these resources hinders effective use of ICT resources in teaching and learning of business education. The study further underscore the need for regular training and professional development, alongside the necessity for a structured approach to integrating ICT into the business education curriculum.

Based on the findings, the following recommendations are proposed:

1. Colleges of Education should organize regular training workshops for business education lecturers to enhance their ICT skills and integrate technology effectively into their teaching practices.
2. The Colleges of Education should develop and implement clear policies and guidelines that govern the integration of ICT in business education courses to ensure consistency and effectiveness.
3. Business education curriculum should be review regularly to incorporate essential ICT competencies that align with current industry trends and technological advancements.
4. Colleges of Education should seek alternative ways of funding ICT integration from NGOs and Philanthropist for the acquisition, maintenance, and upgrading of ICT resources to ensure that both students and lecturers have access to modern technology.

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