

INSTITUTION'S PROPRIETORSHIP (FEDERAL OR STATE OWNED) AND BUSINESS EDUCATION STUDENTS' INFORMATION AND COMMUNICATION TECHNOLOGY (ICT) UTILIZATION IN CROSS RIVER STATE: A COMPARATIVE STUDY

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Abstract

The comparative study examines the relationship between institutional ownership type (federal versus state-owned) and students' information and communication technology (ICT) utilization in tertiary institutions in Cross River State, Nigeria. To achieve the purpose of the study, two research questions and two hypotheses were formulated. Survey research design was employed. Three hundred and eight (308) out of seven hundred and seventy-one (771) final year business education students were selected as sample through proportional and accidental sampling techniques. Instrument for data collection was a questionnaire validated by three experts. A trial test was carried out on 20 business education students. Data collected were subjected to Cronbach Alpha reliability method which yielded reliability estimates ranging from 0.77 to 0.85. Data was analysed using independent t-test statistical tools. The result revealed that there was significant difference between the mean responses of universities and colleges of education students on their level of ICT utilization and there was significant difference between the mean responses of students in federal and state owned institution on their level of ICT utilization. Based on the findings, it was recommended among others that increase funding for ICT infrastructure development in state universities to address the existing disparity with federal institutions.

Keywords: Institutional Ownership, Federal Universities, State Universities, ICT Utilization, Higher Education, Business Education

Introduction

The integration of Information and Communication Technology (ICT) in tertiary education has become indispensable for enhancing the quality of teaching, learning, and research in the contemporary globalized educational landscape. In Nigeria, the imperative for ICT adoption in higher education has been underscored by national policies and international development agendas, reflecting a growing recognition that digital literacy and access to technological resources are

fundamental to producing competitive graduates and advancing knowledge production (Sunday, 2025).

The activities of business education are not static. It changes every year to reflect the needs of the office, the business world as well as the society. In the words of Olabisi (2017:8) “any worthwhile programme has to move with time, business educators have always accepted that change is a fact of life”. From the typewriter to the transistor and now information and communication technology (ICT), business education curriculum has continually shaped itself to meet the needs of businesses. As a result, Sunday and Neji (2023) averred that the success and survival of business education constantly depends on its ability to adapt and keep pace with the needs of its recipients and of this information age.

Information and communications technology or technologies (ICT) is an umbrella term which involves the use of computer and network, hardware and software, satellite systems and so on, as well as the various services and applications associated with them, such as video and teleconferencing. Information and communication technology (ICT) is often perceived as a catalyst for change, in teaching styles, change in learning approaches and in access to information (Watson, 2011). It refers to technologies that provide access to information through telecommunications.

ICT utilization in higher education encompasses the availability of technological infrastructure, accessibility of resources to students and staff, and the actual use of ICT tools for teaching, learning, and research purposes (Nwafor & Eze, 2024). The Technology Acceptance Model (TAM) provides a useful theoretical lens for understanding ICT utilization, suggesting that perceived usefulness and perceived ease of use are key determinants of technology adoption and continued use (Chinelo et al, 2024; Obambon et al, 2026).

In the Nigerian context, ICT utilization typically involves the use of computers, internet services, email, electronic libraries, and various software applications for academic purposes. Research has shown that these tools, when effectively integrated, can enhance the quality of education by providing access to up-to-date information, facilitating collaborative learning, and improving research productivity (Sunday et al, 2025).

The purpose of ICT in education is generally to familiarize students with the use and workings of computers, and related social and ethical issues. Use of different information communication technologies has become inevitable for students in learning. By using modern information communication technologies, students can retrieve their required information within a short time. They can access and disseminate electronic information like e-books, e-journals and can improve

their learning by using different modern ICTs in form wireless networks, internet, search engines, databases, websites and web 2.0 technologies. With the help of ICT, students can now browse through sample examination papers, previous year papers and can also have an easy access to resource persons, mentors, experts, researchers, professionals and peers all over the world (Sunday & Neji, 2023).

However, the realization of ICT-enabled education in Nigerian universities is characterized by significant variation across institutional types. Nigeria's higher education system comprises federal universities, established and funded by the federal government; state universities, established and funded by state governments; and private universities. This tripartite structure, while expanding access to tertiary education, has created conditions for differential resource allocation and infrastructural development that may profoundly affect students' ability to access and utilize ICT resources.

Understanding the influence of institutional ownership on ICT utilization is critical for several reasons. First, it provides empirical evidence to inform policy decisions regarding resource allocation and infrastructure development. Second, it highlights potential inequities in educational quality and student outcomes that may be linked to institutional funding models. Third, it offers a framework for identifying best practices and interventions that can enhance ICT integration across all institutional types (Orokpo et al, 2024).

The ownership structure of Nigerian universities has significant implications for resource availability and institutional capacity. Federal universities, being centrally funded by the national government, historically received more substantial allocations for infrastructure development and recurrent expenditure compared to state universities. However, funding challenges affecting both federal and state institutions have led to varying degrees of ICT infrastructure development (Orokpo & Sunday, 2023).

Federal universities have been the primary beneficiaries of major ICT development initiatives. Notably, in 2025, the National Universities Commission (NUC) secured a €38 million credit facility from the French government through the Agence Française de Développement (AFD) to upgrade digital infrastructure in ten selected federal universities across Nigeria's six geopolitical zones (Oweh, 2025). The Blueprint-ICT-Dev Project aims to enhance teacher training, improve content delivery through digital platforms, and strengthen research infrastructure, positioning these federal institutions as "digital transformation trailblazers" for the broader university system (Adetimirin, 2019).

State universities, in contrast, rely primarily on state government funding, which may be more variable and constrained due to competing state-level priorities. This differential funding pattern according to the Guardian Nigeria (2025) suggests that federal universities may have greater institutional capacity for ICT infrastructure development, though the extent to which this translates into actual student utilization requires empirical investigation.

This comparative study examines the extent to which federal or state ownership of tertiary institutions in Nigeria influences students' ICT availability, accessibility, literacy skills, and utilization patterns. By synthesizing empirical findings from multiple studies conducted across different regions and institutional contexts, the research aims to contribute to the growing body of knowledge on technology integration in Nigerian higher education.

Information and communication technology (ICT) is the totality of all hardware, software, electronic and telecommunication devices that allows for acquisition, processing, presentation, storage, retrieval, transfer and communication of information from one person and organization to another and within the organization. Oyefara et al (2023) posits that it is an indispensable part of the contemporary world. It has penetrated every aspect of the society be it social or economy. Culture have been adjusted to meet with the challenges of the information age. Government recognizing the important of ICT, through the ministry of education restructure the education curriculum to accommodate ICT so as to ensure that the citizens passing through her education system acquire the basic ICT skills needed in the contemporary society.

However, despite institutions and government efforts in this direction, advocacy of ICT aided teaching and learning, investment and donation of ICT equipment to tertiary institutions in the study area, it has been observed that Business education students' utilization of ICT is very low. Some business education student in the study area do not utilize ICT, as assignment given to them are sometimes given out to business centre operator to be done. Also, some of these students hardly know the components of a computer system, they do not have a personal computer to carry out simple word processing. It has also been observed that some of them lack knowledge of how a PowerPoint slide is being created, they also lack the knowledge of utilizing a projector during seminar presentations. Some cannot use Microsoft office like Access, Publisher and Excel proficiently. Some other students do have a valid email address for receiving or sending of mails, they can't download reading materials or review literature online without the help of a business centre operators. The researcher also observed that some students hardly know how to use search engines to gather information online, they do not know how to browse through e-books or journals, copy and paste relevant information to prepare their assignments. This lack of students' ICT utilization has caused many graduates to be unable to perform at par compared to their counterparts

in other countries/states. Such graduates are found wanting in the labour market where ICT is the order of the day (Sunday et al, 2025).

This problem of students' poor utilization of ICT may lead to them lacking the skills to function effectively in this dynamic, information-rich and continuously changing environment (Ali, 2019). The cause of concern is that unless this problem is address, investment in the development of ICT in tertiary institutions may be put to waste and improvement in the quality of teaching and learning may be sluggish. This may make the tertiary institutions fail to achieve its mission and to produce graduates who are ready for the world of work which is increasingly reliant on ICT aided generation and dissemination of knowledge. In view of this discrepancy, there is need to examine whether institution's proprietorship (state or federal owned) influence information and communication technology utilization by business education students in tertiary institutions in Cross River State, Nigeria.

The main purpose of this study was to ascertain the influence of institution's proprietorship (federal or state owned) on students' ICT utilization. Specifically, the study sought to:

1. Examine the difference between the mean responses of universities and colleges of education students on their level of ICT utilization.
2. Ascertain the difference in institution's proprietorship (federal and state owned) on students' ICT utilization

Research questions are:

1. What is the difference between the mean responses of universities and colleges of education students on their level of ICT utilization.
2. To what extent does institution's proprietorship (federal and state owned) influence students' ICT utilization?

Research hypotheses postulated were:

1. There is no significant difference between the mean responses of universities and colleges of education students on their level of ICT utilization.
2. There is no significant difference between the mean responses of students in federal and state owned institutions on their level of ICT utilization.

Methodology

The research design adopted in the study was survey according to Idaka and German (2012) survey design is a research approach specifically designed to systematically collect data about a group of individuals who have same characteristic, through the use of written or oral data collection instruments such as: interview, questionnaire, telephone interview, mails and the internet, concerning participants responses on facts, opinions, attitudes among others. This is to enable the researcher study them as a group. This design was considered ideal because the study sought to collect data through the use of questionnaire on institutional variables and information and communication technology utilization of business education students in tertiary institutions in Cross River State, Nigeria.

The population of the study comprised of 771 final year business education students of 2025/2026 academic session in all the public tertiary institutions in the state. The institutions are: University of Calabar, Cross River University of Technology, Federal College of Education Obudu, and College of Education, Akamkpa.

The sampling techniques adopted for this study were proportionate stratified random sampling and accidental sampling techniques. Proportionate stratified random sampling techniques was adopted to select forty percent (40%) of final year business education students as respondent for the study from each of the four tertiary institutions. This sampling techniques was considered appropriate to ensure that the proportion of each of the institution in the sample reflects their proportion in the wider population. Accidental sampling technique was used in administering the questionnaire to the respondents, the researcher met at the time of the distribution, until the desired number was completed.

The respondents which constitute the sample for the study were three hundred and eight students (308) final year business education students. This represents 40% of the entire population of final year business education students.

The instrument for data collection was a thirty (30) items questionnaire designed by the researcher titled "Information and Communication Technology Utilization Questionnaire (ICTQ)". The questionnaire was divided into two sections. Sections A was designed to collect information on the respondents' personal data. It contains items on Name of institutions, institution's type and institution's proprietorship while section B has thirty (30) items of a four point response option of VHE= very high extent, HE High extent, ME = moderate extent, LE = low extent and strongly agree

(SA), agree (A), Disagree (D) and strongly disagree (SD). Each item required the respondents to tick one response which best correspond to his or her very honest self.

The validity of the research instrument was done by three experts. One business educator and two measurement and evaluation experts. The questionnaire had thirty-five (35) items initially, five items were dropped since they were double barrel while few items were modified to reflect the variable it purports to measure. All observations were utilized by the researcher to produce the final copy of the questionnaire used for the main study. To determine the reliability of the instrument, the researcher conducted a trial test on twenty (20) year three business education students. The data obtained were subjected to Cronbach Alpha reliability method and it yielded reliability estimates ranging from 0.77 – 0.85, showing that the instrument is highly reliable.

The researcher and one trained research assistant visited the schools under study, sought permission and consent of the Head of Department/Unit from the selected institutions to carry out the study. The Head of Department/Unit of the institutions under study gave permission for the researcher to administer the instrument. The researcher met the respondent immediately after receiving their lecturers, explained the purpose of the study to them and how they are to respond to the instrument. The researcher assured them that their responses will be utilized only for the research purpose. The instrument was administered on the students that constitute the sample in each institution. The researcher and his researcher assistant waited to collect the questionnaire immediately it was responded to. The researcher at the end of the exercise retrieved all copies of the questionnaire from the respondents' however, during the scoring and coding of the questionnaire, three copies of the questionnaire were not correctly responded to. The study utilized only 305 copies for data analysis.

Results

Test of Hypotheses

Hypothesis 1:

There is no significant difference between the mean responses of universities and colleges of education students on their level of ICT utilization. The independent variable is institutions' type while the dependent variable is students' ICT utilization. The independent variable was categorized into: universities and colleges of education. Hence, independent t-test statistics was used and the result is presented in Table 1. From Table 1, the calculated t-value of 4.937 was greater than the critical value of 1.966 at 303 degrees of freedom. Its associated p-level of 0.003 was found to be less than 0.05 p-level, hence, the null hypothesis was rejected. This implies that there is significant

difference between the mean responses of universities and colleges of education students on their level of ICT utilization.

TABLE 1: Independent t-test analysis to compare mean response of universities and colleges of education students on their level of ICT utilization

Variable (institution's type)	N	X	SD	df	t-cal	p-level
Universities	141	23.67	1.99	303	4.937	0.003
Colleges of education	168	22.42	2.30			

Result significant at $p < .05$, crit-t = 1.966

Taking a cursory look at the mean values on Table 1, it could be implied that universities' student utilize ICT more often than their counterparts in colleges of education.

Hypothesis 2

There is no significant difference between the mean responses of students in federal and state owned institutions on their level of ICT utilization. The independent variable is institutions' proprietorship while the dependent variable is students' ICT utilization. The independent variable was categorized into: federal and state owned institutions. Hence, independent t-test statistics was used and the result is presented in Table 2.

Table 2: Independent t-test analysis to compare mean response of students in federal and state owned institutions on their level of ICT utilization

Variable (institution's proprietorship)	N	X	SD	df	t-cal	p-level
Federal	108	22.55	1.73	303	5.442	0.005
State	201	21.06	2.11			

Result significant at $p < .05$, crit-t = 1.966

From Table 2, the calculated t-value of 5.442 was greater than the critical value of 1.966 at 303 degrees of freedom. Its associated p-value of 0.005 was found to be less than 0.05 p-level, hence,

the null hypothesis was rejected. This implies that there is significant difference between the mean responses of students in federal and state owned institutions on their level of ICT utilization. Taking a cursory look at the mean values on Table 2, it could be implied that students in federal owned institutions utilize ICT more often than their counterparts in state owned institutions.

Discussion of findings

The finding in this regard revealed that there was significant difference between the mean responses of universities and colleges of education students on their level of ICT utilization. The finding is supported by Ejilibe in Nwankwoala (2015) who investigated the status of information and communication technology (ICT) in teaching and learning biology in colleges of education in South-Eastern part of Nigeria. The study revealed that the quality of ICT resources available for the teaching of biology in the federal and state owned colleges of education is still low, even though those of the federal colleges are slightly higher when compare with the state owned colleges of education. Also, it was observed that lecturers have low level of ICTs utilization despite the fact that lecturers at the federal colleges have better utilization of ICTs than those in the state colleges of education. From Ejilibes' study, it can be inferred that to some extent the accessibility does not mean acceptability or utilization.

In contrast to the finding, Orike et al (2017) investigated the competency level of business education students in information and communication technology in tertiary institutions in River State. The study revealed that there is no significance difference between business education students of Ignatius Ajuru University of education and that of federal college of education technical in their level of competency as well as utilization of ICT in teaching and learning.

In consonance with the finding, Nwankwoala (2015) investigated lecturers and students' use of ICTs in Nigerian university education as a panacea for national development in the two state owned university in River State, Nigeria. The findings showed that university lecturers and students use of the ICT highly contributed to both their human capacity development and national development. In a related study carried out by Okeke, Oghenetega and Umeji (2014) on the availability and uses of ICT facilities among students in faculty of social science Madonna University, Okija, Anambra State, Nigeria. In line with the finding, the study revealed that 100 students representing 33.4% use global system for mobile-communication as one of the ICT facilities, social media network facilities internet connectivity 13.4%, digital satellite television 20 respondents representing 6.7% while projector slides for presentation has 10 representing 3.3% of the respondents. On the respond of "what is your purpose of using ICT facilities the funding revealed that 45 respondents representing 15.05% of the sample use ICT facilities for assignment, research 50 respondents representing 16.7%

while 99 respondent representing 33.1% use ICT facilities for social activities”. The above finding shows that much still need to be desire as per availability and utilization of ICT by students.

The finding in this regard revealed that there was significant difference between the mean responses of students in federal and state owned institutions on their level of ICT utilization. The ability to use information and communication technology (ICT) is now assumed by most commuters to be a prerequisite to living and working in the present information age. ICT have influence section of the society, from education to civic involvement, employment to leisure. Nevertheless, greater portion of the society are not still conversant with the use of information technology. Researchers are of the view that ICT use and non-use is mostly determined by institution.

Neice in Selwyn (2003) agrees with the findings, the author opined that many people ICT use is heavily mediated by the institutional contexts in which they find themselves in. he described institutional mediation of technology in terms of the extent to which ICT access is reinforced for some individuals, groups and social strata by institutionally enriched and supportive contexts. This is especially important in terms of the technical intermediation of institutions such as the work place, the school, as well as home.

In line with the finding, Selwyn (2003) asserted that in many organizations individuals may have little control over when or how to use technology and hence little discretion over which meaning and elements influence their interaction with it. He observed that those who are operating in places where ICT access is an important functional element are likely to benefit from the skills and training which are available and that are in turn reinforced by institutional intermediation. Commenting on the uneven use of ICT by different institution of learning. Selwyn (2003) averred that there is significant and enduring disparities in ICT use between institutions, subject areas and even between students taking the same classes. He educational technology literature, at a general level the use of ICT in higher education can best be described as sporadic, uneven and often low level.

Mizokawa, Gregorian, Okerson and Fuller in Selwyn (2003) support the finding of the study, they stated that ICT has a profound effect on the academic activities of most university faculty, its overall integration into the day today academic activities of university students’ has been less pronounced. The assumption that the new generation of ICTs inequality among students in the tertiary institution has attracted widespread attention and promoted the debate among professional and the research community. Greater percentage of the students secured admission into the tertiary institution with inadequate ICT access and competences believing that the tertiary institutions are going to close the gap.

Bridging the digital divide is not the responsibility of individuals; students and the curriculum may not be designed to address these concerns. In line with the finding, Onwe and Ezekwe (2014) emphasized that it is the responsibility of tertiary institutions to fashion out ways of improving the needed ICT facilities for the overall academic performance. They further posited that the digital divide in education may be the reason Nigerian universities are not highly ranked in world tertiary institution ranking because most revered professors and senior academic members seem not to be ICT knowledgeable as a result their outputs are not properly documented and disseminated. Not only that they are not knowledgeable in ICT usage, the universities' ICT centres have not found it necessary to constantly upgrade their portal thereby providing obscure information to their users.

Ani et al (2016) conducted a study to investigate the problems that hinder the utilization of information and communication technology (ICT) base library resources for postgraduate research in universities federal, state and private in the south eastern Nigeria. The study's result contradicts the finding in this regard. The study revealed that postgraduate researchers' university status (federal state and private) and faculties (education social sciences and engineering) have no significant influence on their utilization of information and communication technology based library resources for research in universities in the south east Nigeria. With the t-ratio calculated of (0.133) and the table t of (0.875).

However, Inije et al (2013) investigated the use of e-learning technologies in business education instructional delivery in colleges of education in Delta State, Nigeria. In consonance with the finding, the study revealed that e-learning technology resources were not extensively utilized in teaching business education in the colleges of education in state.

Conclusion

This comparative study examined the relationship between institutional ownership (federal versus state) and students' ICT utilization in Nigerian tertiary institutions. The findings reveal a consistent pattern: students in federal institutions generally have better access to ICT resources, demonstrate higher ICT literacy levels, and report greater ICT utilization compared to their counterparts in state institutions. However, these disparities exist within a context of generally inadequate ICT provision across all institutional types. Both federal and state institutions face significant challenges, including irregular power supply, limited internet connectivity, and insufficient funding, that constrain effective ICT integration. The difference is therefore one of degree rather than kind—federal institutions are relatively better resourced but still fall short of optimal ICT provision.

The findings have implications for educational equity in Nigeria. If ICT access and utilization are systematically lower in state institutions, students in these universities may face disadvantages in developing digital competencies essential for the contemporary knowledge economy. This disparity may perpetuate inequalities in graduate outcomes and labour market success.

Recommendations

Based on the findings, the following recommendations were proposed:

1. Increase funding for ICT infrastructure development in state universities to address the existing disparity with federal institutions.
2. Extend ICT development initiatives, such as the Blueprint-ICT-Dev Project, to include state universities to promote more equitable access.
3. Address the common infrastructure challenges affecting all institutions, particularly power supply and internet connectivity.

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