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Assessment Of Availability And Utilization Of Information And Communication Technologies (ICTS) For Teaching Business Studies In Junior Secondary Schools In Delta North

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ABSTRACT
This study assessed the availability and utilization of Information and Communication Technologies (ICTs) for teaching business studies in junior secondary schools in Delta North. A descriptive survey research design was adopted for the study. The population comprised 336 business studies teachers from junior secondary schools in the region. A census sampling technique was utilized, meaning the entire population of 336 teachers was used. Data were collected using a validated, structured questionnaire. The data gathered were analyzed using means, standard deviations, and t-tests at a 0.05 level of significance. The results indicated a mixed picture of ICT integration. Specifically, computer, telecommunication, and internet facilities were moderately available and utilized, whereas multimedia facilities were rarely available. The study concluded that the availability and utilization of ICTs for teaching Business studies in Delta North is only at a moderate extent, with a significant deficit in multimedia tools. Consequently, a major recommendation is that the government and stakeholders of both public and private schools must provide multimedia facilities to secondary schools to help boost the students' understanding of abstract concepts.
Keywords: ICTs, Business Studies, Junior Secondary Schools, Facilities Utilization

INTRODUCTION

Information and Communication Technologies (ICTs) have become central to modern education systems worldwide. ICTs encompass a comprehensive range of hardware, software, and network resources that enable the creation, storage, retrieval, transmission, and use of information for teaching and learning. According to the Federal Ministry of Education (2020), ICTs function as a combination of networks, hardware, and software that facilitates communication, collaboration, and the exchange of data and knowledge. The integration of these technologies plays a pivotal role in improving teaching effectiveness and student engagement, particularly in practical subjects like Business Studies (Adepoju & Ogunleye, 2023). Business Studies fundamentally emphasizes real-world applications such as marketing, accounting, office procedures, and business management. Owan and Asuquo (2021) assert that utilizing

ICT tools, such as spreadsheets, accounting software, presentation tools, and internet-based resources, provides learners with hands-on experience and fosters critical 21st-century skills. This technological shift paves the way for a more student-centered learning environment , challenging the traditional "chalk and talk" method of teaching that still heavily relies on chalkboards and textbooks in many Nigerian secondary schools (Owuamanan, 2018). Ultimately, since Business Studies is designed to prepare students for the business world of the information age, instructional delivery is unlikely to be fully effective without the robust integration of modern ICT facilities.

The successful integration of these technologies fundamentally depends on two critical constructs: availability and utilization. Availability connotes the readiness of resources for use and refers to the extent to which ICT materials are readily accessible or obtainable for use by teachers and students within the school environment. However, even when ICT resources are physically present, their mere existence does not guarantee effective educational outcomes; they must be actively and appropriately employed. Utilization, therefore, is the actual employment of these available resources for definite and desirable instructional purposes. In the context of teaching Business Studies, effective utilization is often hindered by systemic factors such as a lack of teacher training, inadequate maintenance of equipment, and insufficient technical support. To comprehensively assess this technological landscape, it is necessary to evaluate four distinct categories of ICT infrastructure: computer, telecommunication, multimedia, and internet facilities. Computer facilities comprise basic hardware, such as desktops, laptops, and uninterruptible power supplies, as well as essential software applications like Microsoft Word, Excel, and PowerPoint that help develop technological literacy and essential workplace skills. Telecommunication facilities encompass communication gadgets and collaborative platforms, including mobile phones, Zoom, and Google Classroom, which effectively expand the learning environment beyond the traditional four walls of a classroom. Furthermore, multimedia facilities, which integrate text, graphics, animation, and video through tools like projectors and interactive whiteboards, offer highly interactive and multi-sensory learning experiences that appeal to diverse learning styles. Finally, internet facilities, such as search engines, electronic mail, and file-sharing platforms, provide access to a vast amount of global data, transforming the learning process and supporting comprehensive research activities.

To understand the dynamics of how these facilities are adopted in educational settings, it is essential to ground the discussion in established educational and technological adoption theories. The Technological Pedagogical Content Knowledge (TPACK) framework, articulated by Mishra and Koehler (2006), provides a comprehensive lens for this study by emphasizing the complex interplay between technological knowledge, pedagogical knowledge, and content knowledge. According to this theory, the mere availability of ICT facilities is only the initial step; their effective utilization heavily depends on a teacher's proficiency in seamlessly blending technological tools with appropriate pedagogical methods and specific Business Studies curriculum content. Teachers must possess the technological knowledge to configure cross-platform applications to realize instructional objectives, while simultaneously applying pedagogical strategies that engage students in higher-order thinking through authentic, real-world examples. Complementing this educational perspective is the Technology Acceptance Model (TAM) proposed by Davis (1989), which models the cognitive processes dictating how users come to accept and actually use a new technology. TAM posits that a teacher's behavioral intention to utilize ICT tools, such as digital whiteboards, business simulations, or internet resources, is primarily driven by two critical factors: perceived usefulness and perceived ease of use. If a Business Studies teacher perceives a specific ICT facility as a tool that significantly enhances their instructional effectiveness and student engagement, and if the technology is relatively free from excessive operational effort, they are far more likely to integrate it into their daily teaching practices. Therefore, assessing both the physical availability of infrastructure and the extent of its utilization provides a vital reflection of these underlying theoretical dynamics.

Empirical investigations into the integration of these technologies consistently reveal a stark contrast between theoretical expectations and practical realities within Nigerian educational institutions. For instance, Lawrence (2019) investigated the adequacy and utilization of ICT facilities for teaching business

subjects in Osun State, demonstrating that despite government-backed technological interventions, such as the distribution of computer tablets to students, ICT facilities remained barely available, grossly inadequate, and largely unutilized by educators. Similarly, Ademola and John (2022) examined the landscape in Ondo State and found a severe unavailability of basic ICT infrastructure, a problem further compounded by teachers' low levels of ICT proficiency and systemic bottlenecks like irregular power supply. Narrowing the focus to Delta State, Obi and Arhueremu (2020) assessed business teacher education programmes across Colleges of Education and discovered that even at the tertiary level, benchmarked ICT resources were neither available nor actively utilized by business educators. They concluded that this widespread inadequacy cascades down the educational system, ultimately negatively affecting the technological competencies of future graduates attempting to navigate a digitized business world. Furthermore, specific technological domains suffer equally; Oguejiofor and Okeke-Ezeanyanwu (2019) observed that internet technologies, which are crucial for contemporary research and data sharing, are utilized to a very low extent by business subject teachers. Collectively, these empirical studies underscore a pervasive national challenge: while the pedagogical benefits of ICT in Business Studies are widely acknowledged, actual classroom implementation remains severely constrained by infrastructural deficits, poor maintenance cultures, and low user adoption.

To address these systemic challenges, the Federal Government of Nigeria has instituted comprehensive frameworks, such as the National Policy on ICT in Education (2019) and the National Digital Learning Policy (2023), which robustly emphasize the necessity and benefits of integrating ICTs into instructional delivery. Despite these strategic national directives aimed at fostering interactive and technology-driven learning environments, a conspicuous gap remains in the actual availability and effective utilization of these facilities in junior secondary schools. This disconnect is particularly glaring in Delta North Senatorial District, where an unequal distribution of educational resources, exorbitant installation and maintenance costs, limited teacher training, and significant policy implementation gaps continue to hamper the teaching of Business Studies. While previous research has extensively explored ICT adoption at tertiary levels or within other geopolitical zones, there is a distinct paucity of literature specifically assessing the holistic availability and utilization of computer, telecommunication, multimedia, and internet facilities at the foundational junior secondary level in Delta North. Consequently, investigating this waving situation is deeply imperative; without a precise assessment of the current state of ICT infrastructure and usage, stakeholders cannot effectively address the inadequacies that currently prevent students from acquiring the 21st-century skills crucial for global competitiveness and economic participation.

Statement of the Research Problem

The integration of Information and Communication Technologies (ICTs) has significantly transformed global education, particularly in enhancing the delivery of business-related subjects. To align with this global trend, the Federal Government of Nigeria has formulated policies, such as the National Policy on ICT in Education and the National Digital Learning Policy, to mandate the integration of ICTs into instructional delivery. However, a substantial gap exists regarding the actual availability and effective utilization of these facilities in junior secondary schools, especially for teaching Business Studies. In Delta North, junior secondary schools face acute challenges, potentially stemming from insufficient ICT infrastructure (such as computers, multimedia, internet, and telecommunication facilities), unequal resource distribution, high maintenance costs, and a lack of proper teacher training. This persistent gap raises serious concerns about the preparedness of students to acquire the crucial 21st-century practical skills required for global economic participation. Therefore, this study addresses this exact gap by assessing the infrastructural reality in Delta North, speculating that unless these critical ICT facilities are made adequately available and actively utilized, the teaching of Business Studies will remain largely theoretical, thereby fundamentally limiting students' practical competencies and global competitiveness.

Objectives of the study

The main purpose of this study was to assess the availability and utilization of ICTs for teaching business studies in junior secondary schools in Delta North. Specifically, the study sought to:

1. Examine the availability of computer facilities for teaching Business studies in junior secondary schools in Delta North.
2. Assess the utilization of telecommunication facilities for teaching Business studies in junior secondary schools in Delta North.
3. Determine the availability of multimedia facilities for teaching Business studies in junior secondary schools in Delta North.
4. Examine the utilization of internet facilities for teaching Business studies in junior secondary schools in Delta North.

Research Questions

The following research questions were raised to guide the study:

1. To what extent are computer facilities available for teaching of Business studies in junior secondary schools in Delta North?
2. To what extent are telecommunication facilities utilized for teaching of Business studies in junior secondary schools in Delta North?
3. To what extent are multimedia facilities available for teaching of Business studies in junior secondary schools in Delta North?
4. To what extent are internet facilities utilized for teaching of Business studies in junior secondary schools in Delta North?

Hypotheses

The following null hypotheses were formulated and tested at a 0.05 level of significance to guide the study:

1. There is no significant difference in the mean ratings of Business studies teachers on the extent to which computer facilities are available for teaching Business studies in junior secondary schools in Delta North based on gender.
2. There is no significant difference in the mean ratings of Business studies teachers on the extent to which telecommunication facilities are utilized for teaching Business studies in junior secondary schools in Delta North based on school ownership.
3. There is no significant difference in the mean ratings of Business studies teachers on the extent to which multimedia facilities are available for teaching of Business studies in junior secondary schools in Delta North based on school ownership.
4. There is no significant difference in the mean ratings of Business studies teachers on the extent to which internet facilities are utilized for teaching of Business studies in junior secondary schools in Delta North based on age.

METHODOLOGY

The research design adopted for this study was a descriptive survey design. This design was considered highly appropriate as it facilitated the systematic collection of quantifiable data from a predefined population to ascertain the views of educators regarding ICT availability and utilization. The population of the study consisted of 336 junior secondary school Business studies teachers drawn from both public (179 teachers) and private (157 teachers) secondary schools across the nine local government areas of Delta North Senatorial District in Delta State, Nigeria. Due to the manageable size of this population, the study adopted a census sampling technique, meaning no sample was drawn and the entire population of 336 teachers was utilized for the study.

The instrument utilized for data collection was a structured, researcher-developed questionnaire titled "Assessment of Availability and Utilization of ICTs for Teaching Business Studies Questionnaire (AAUICTTBSQ)". The instrument was divided into two parts: Part A elicited demographic information, while Part B contained 40 items clustered into four sections corresponding to the research questions. It was structured on a 5-point rating scale ranging from Very High Extent/Very Highly Available (5 points) to Very Low Extent/Not Available (1 point). To ensure validity, the instrument was subjected to face validation by three experts: two from the Department of Business Education at the University of Delta,

Agbor, and one from the Department of Measurement and Evaluation at Delta State University, Abraka. The psychometric reliability of the instrument was established using the test-retest method; the questionnaire was administered to 20 teachers outside the target population with a 14-day interval. A Pearson Product-Moment Correlation Coefficient was utilized to analyze the data, yielding a high reliability index of 0.89.

Data collection was carried out by the researcher with the assistance of nine trained research assistants assigned to the respective local government areas to ensure prompt administration and retrieval of the instrument. For statistical analysis, the data collected to answer the research questions were analyzed using mean and standard deviation. The decision threshold for the research questions interpreted mean scores between 0.50–1.49 as Very Low Extent/Not Available, 1.50–2.49 as Low Extent/Rarely Available, 2.50–3.49 as Moderate Extent/Moderately Available, 3.50–4.49 as High Extent/Highly Available, and 4.50–5.00 as Very High Extent/Very Highly Available. Furthermore, independent samples t-tests and Analysis of Variance (ANOVA) were employed to test the formulated null hypotheses at a 0.05 level of significance (probability/confidence level). The null hypotheses were rejected if the calculated p-value was less than the 0.05 alpha level, and retained if it was greater.

RESULTS

Research Question 1 *To what extent are computer facilities available for teaching of Business studies in junior secondary schools in Delta North?*

Table 1: Summary of descriptive statistics on the extent to which computer facilities are available for teaching Business studies

S/N	Extent of availability of computer facilities	X	SD	Remark
1.	Computer (Desk tops, laptops,etc)	2.92	1.31	MA
2.	Computer Tablets	1.39	0.69	NA
3.	Interactive Whiteboards	1.20	0.55	NA
4.	Printers & Scanners	2.05	0.98	RA
5.	Word Processors	1.38	0.74	NA
6.	Microsoft Word	3.89	1.37	HA
7.	Microsoft Excel	3.87	1.34	HA
8.	PowerPoint	3.56	1.38	HA
9.	Keyboarding tutor	3.87	1.23	HA
10.	Uninterruptible Power Supply (UPS)	3.49	1.40	MA
	Grand Mean/SD	**2.76**	**1.10**	**MA**

***Source**: Field Survey, 2025*

Data presented in Table 1 provides the descriptive statistics used to answer the first research question. The analysis shows that four items in the scale (Microsoft Word, Microsoft Excel, Keyboarding tutor, and PowerPoint) recorded high availability with mean values ranging from 3.56 to 3.89. Conversely, hardware such as Computer Tablets (1.39), Interactive Whiteboards (1.20), and Word Processors (1.38) fell within the range of non-availability. The standard deviations for all items clustered between 0.55 and 1.40, signifying that the respondents' views were relatively close to one another. Ultimately, the analysis adequately answers the research question, as the overall grand mean score of 2.76 (SD = 1.10) falls within the decision threshold of 2.50 to 3.49, indicating that computer facilities are only moderately available for the teaching of Business studies in junior secondary schools in Delta North.

Research Question 2 *To What Extent Are Telecommunication Facilities Utilized For Teaching Of Business Studies In Junior Secondary Schools In Delta North?*

Table 2: Summary of descriptive statistics on the extent to which telecommunication facilities are utilized for teaching Business studies

S/N	Extent of utilization of telecommunication	X	SD	Remark
11.	Internet and Broadband	2.48	1.20	LE
12.	Zoom	2.69	1.40	ME
13.	Microsoft Teams	2.23	1.30	LE
14.	Internal Telephone System	2.74	1.50	ME
15.	Google Workspace	2.75	1.40	ME
16.	Google Classroom	2.81	1.43	ME
17.	Canvas	2.67	1.39	ME
18.	Slack	2.15	1.30	LE
19.	Interactive Smartboards	2.06	0.97	LE
20.	Teleconferencing Suites	2.73	1.40	ME
	Grand Mean/SD	**2.53**	**1.33**	**ME**

***Source**: Field Survey, 2025*

Data presented in Table 2 provides the descriptive statistics used to answer the second research question. The analysis showed that six items in the scale, Google Classroom (2.81), Google Workspace (2.75), Internal Telephone System (2.74), Teleconferencing Suites (2.73), Zoom (2.69), and Canvas (2.67), represented a moderate extent of utilization. Conversely, the mean for four items ranged from 2.06 to 2.48, showing a low extent of utilization for tools like Interactive Smartboards, Slack, Microsoft Teams, and Internet and Broadband. The standard deviation for all the items in the scale ranged from 0.97 to 1.50, which implied that the respondents' responses were close to one another. Ultimately, this analysis effectively answers the research question: with an overall grand mean score of 2.53 and a standard deviation of 1.33, the data specifies that telecommunication facilities are utilized for teaching Business studies in junior secondary schools in Delta North to a moderate extent.

Research Question 3 *To what extent are multimedia facilities available for teaching of Business studies in junior secondary schools in Delta North?*

Table 3: Summary of descriptive statistics on the extent to which multimedia facilities are available for teaching Business studies

S/N	Extent of availability of multimedia facilities	X	SD	Remark
21.	Interactive Whiteboard	1.77	1.00	RA
22.	Visual Compact Disc	2.34	1.17	RA
23.	Multimedia Projector	1.77	1.07	RA
24.	Digital Camera and Microphone	1.84	0.96	RA
25.	E-learning Platforms (blackboard, moodle, etc)	2.72	1.36	MA
26.	Video Conferencing	2.74	1.50	MA
27.	YouTube (Video)	2.82	1.26	MA
28.	Podcast (Audio)	2.77	1.27	MA
29.	Slide Projector	2.34	1.37	RA
30.	Digital Versatile Disc/Video disc	2.79	1.49	MA
	Grand Mean/SD	**2.39**	**1.25**	**RA**

(Source: Field Survey, 2025)

Data presented in Table 3 provides the descriptive statistics used to answer the third research question. The analysis displayed that the mean for five items in the scale ranged from 2.72 to 2.82, signifying moderate availability for facilities such as YouTube (Video), Digital Versatile Disc/Video disc, Podcast (Audio), Video Conferencing, and E-learning Platforms. Conversely, the mean for another five items in the scale varied from 1.77 to 2.34, disclosing low or rare availability for tools like Visual Compact Discs, Slide Projectors, Digital Cameras and Microphones, Interactive Whiteboards, and Multimedia Projectors. The standard deviation for all the items in the scale varied from 0.96 to 1.50, which suggested that the respondents' responses were not far from one another. Ultimately, the data effectively answers the research question by demonstrating that, with an overall grand mean score of 2.39 and a standard deviation of 1.25, multimedia facilities are rarely available for the teaching of Business studies in junior secondary schools in Delta North.

Research Question 4 *To what extent are internet facilities utilized for teaching of Business studies in junior secondary schools in Delta North?*

Table 4: Summary of descriptive statistics on the extent to which internet facilities are utilized for teaching Business studies

S/N	Extent of utilization of internet facilities	X	SD	Remark
31.	Google Classroom	1.87	1.15	LE
32.	Zoom	1.95	1.16	LE
33.	Canvas	2.01	1.18	LE
34.	E-mail	3.09	1.25	ME
35.	Moodle	2.86	1.26	ME
36.	Microsoft Teams	3.02	1.17	ME
37.	X (former Twitter)	2.44	1.12	LE
38.	Facebook	2.39	1.09	LE
39.	Search Engines: Google	3.44	1.23	ME
40.	Multimedia and Files Sharing	2.37	1.37	LE
	Grand Mean/SD	**2.54**	**1.20**	**ME**

(Source: Field Survey, 2025)

Data presented in Table 4 provides the descriptive statistics used to answer the fourth research question. The analysis showed that the mean for four items in the scale, Search Engines: Google (3.44), E-mail (3.09), Microsoft Teams (3.02), and Moodle (2.86), suggested a moderate extent of utilization of internet facilities. Conversely, the mean for six items in the scale varied from 1.87 to 2.44, indicating a low extent of utilization for tools like Google Classroom, Zoom, Canvas, X (former Twitter), Facebook, and Multimedia and Files Sharing. All items in the scale have standard deviations that varied from 1.09 to 1.37, which inferred that the respondents' responses were close to one another. Ultimately, the analysis effectively answers the research question, as the overall grand mean score of 2.54 and standard deviation of 1.20 indicate that internet facilities are utilized for teaching Business studies in junior secondary schools in Delta North to a moderate extent.

Hypothesis 1

There is no significant difference in the mean ratings of Business studies teachers on the extent to which computer facilities are available for teaching Business studies in junior secondary schools in Delta North based on gender.

Table 5: Summary of t-test analysis on the extent to which computer facilities are available based on gender

Variable	N	Mean	SD	df	α	t	p-value	Decision
Male	125	3.00	1.25					
				334	0.05	.831	.407	NS
Female	211	2.88	1.35					

(Source: Field Survey, 2025)

Data presented in Table 5 details the statistical analysis used to test the first null hypothesis. The descriptive portion of the analysis shows a mean rating of 3.00 (SD = 1.25) for male teachers and 2.88 (SD = 1.35) for female teachers. The independent samples t-test yielded a t-value of 0.831 with a corresponding p-value of 0.407 at 334 degrees of freedom. Because the calculated p-value (0.407) is greater than the 0.05 level of significance, the analysis effectively tests the hypothesis. Consequently, the null hypothesis of no significant difference is retained. This indicates that male and female business studies teachers do not significantly differ in their perception regarding the availability of computer facilities in their schools.

Hypothesis 2

There is no significant difference in the mean ratings of Business studies teachers on the extent to which telecommunication facilities are utilized for teaching Business studies in junior secondary schools in Delta North based on school ownership.

Table 6: Summary of t-test analysis on the extent to which telecommunication facilities are utilized based on school ownership

Variable	N	Mean	SD	df	α	t	p-value	Decision
Public	179	2.30	1.01					
				334	0.05	-2.044	.000	S
Private	157	2.58	1.28					

(Source: Field Survey, 2025)

Data presented in Table 6 details the statistical analysis used to test the second null hypothesis. The descriptive portion of the analysis shows a mean rating of 2.30 (SD = 1.01) for public school teachers and 2.58 (SD = 1.28) for private school teachers. The independent samples t-test yielded a t-value of -2.044. This value is greater in magnitude than the critical t-value at 334 degrees of freedom, and the corresponding p-value is 0.000, which is less than the 0.05 level of significance. Consequently, the null hypothesis of no significant difference is rejected. This establishes that school ownership plays a significant role in the extent to which telecommunication facilities are utilized by business studies teachers in junior secondary schools in Delta North.

Hypothesis 3

There is no significant difference in the mean ratings of Business studies teachers on the extent to which multimedia facilities are available for teaching of Business studies in junior secondary schools in Delta North based on school ownership.

Table 7: Summary of t-test analysis on the extent to which multimedia facilities are available based on school ownership

Variable	N	Mean	SD	df	α	t	p-value	Decision
Public	179	1.00	0.00					
				334	0.05	-13.099	.000	S
Private	157	2.21	1.02					

(Source: Field Survey, 2025)

Data presented in Table 7 details the statistical analysis used to test the third null hypothesis. The descriptive portion of the analysis shows a mean rating of 1.00 (SD = 0.00) for public school teachers and 2.21 (SD = 1.02) for private school teachers. The independent samples t-test yielded a t-value of -13.099. This value is greater in magnitude than the critical t-value at 334 degrees of freedom, and the corresponding p-value is 0.000, which is less than the 0.05 level of significance. Consequently, the null hypothesis of no significant difference is rejected. This establishes that there is a significant difference in the availability of multimedia facilities for teaching Business studies in junior secondary schools in Delta North based on school ownership, with private schools reporting relatively higher, albeit still low, availability.

Hypothesis 4

There is no significant difference in the mean ratings of Business studies teachers on the extent to which internet facilities are utilized for teaching of Business studies in junior secondary schools in Delta North based on age.

Table 8: Summary of descriptive statistics on the extent to which internet facilities are utilized based on age

AGE	N	Mean	Std. Deviation
20-30 Years	78	2.22	1.224
31-40 Years	128	1.80	1.159
41-50 Years	82	1.85	1.090
51 Years and above	48	1.54	.967
Total	336	1.87	1.148

Table 4.9: ANOVA summary on extent to which internet facilities are utilized for teaching of Business studies

Source of Variance		**Sum of Squares**	**Df**	**Mean Square**	**F**	**Sig.**	**Decision**
Extent of utilization of internet facilities in teaching Business studies	Between Groups	15.323	3	5.108	3.979	.008	**S**
	Within Groups	426.174	332	1.284			
	Total	441.497	335				

P = 0.05

Data presented in Table 8 details the statistical analysis used to test the fourth null hypothesis. The descriptive portion of the analysis shows the mean ratings for the utilization of internet facilities across different age groups: 2.22 (SD = 1.22) for ages 20-30, 1.80 (SD = 1.16) for ages 31-40, 1.85 (SD = 1.09) for ages 41-50, and 1.54 (SD = 0.97) for ages 51 and above. The Analysis of Variance (ANOVA) yielded an F-value of 3.979. The corresponding p-value is 0.008, which is less than the 0.05 level of significance. Consequently, the null hypothesis of no significant difference is rejected. This establishes that the age of the teachers significantly influences the extent to which they utilize internet facilities for teaching Business studies in junior secondary schools in Delta North.

DISCUSSION OF FINDINGS

The findings of this study provide a nuanced understanding of the current state of ICT integration in junior secondary schools in Delta North, beginning with the foundational domain of computer facilities. The analysis established that computer facilities are only moderately available for the teaching of Business studies, and crucially, the gender of the teachers does not significantly influence their perception of this availability. This moderate level of availability, where basic applications like Microsoft Word and Excel are present but more comprehensive hardware tools might be lacking, presents a slight progression from the severe infrastructural deficits previously highlighted in the literature. For instance, this contrasts somewhat with the findings of Ademola and John (2022), who reported a near-total unavailability of basic ICT infrastructure in public secondary schools in Ondo State. It also represents a marginal improvement over the systemic inadequacies observed by Obi and Arhueremu (2020), who discovered that even at the tertiary level in Delta State, benchmarked ICT resources were neither available nor utilized. The retention of the null hypothesis regarding gender further confirms that the challenge of accessing these computer facilities is a universal, systemic infrastructural issue affecting all educators equally, rather than a demographic disparity. However, when evaluating this moderate availability through the lens of the Technological Pedagogical Content Knowledge (TPACK) framework by Mishra and Koehler (2006), a critical caveat emerges. TPACK posits that the mere physical presence or moderate availability of hardware and software is only the initial step in educational technology integration. For Business studies instruction to be truly transformative and equip students with 21st-century skills, having a moderate supply of computers is insufficient. Teachers must be able to seamlessly blend this technology with appropriate pedagogical strategies and specific curriculum content. Thus, while the moderate availability of computer facilities in Delta North is a positive baseline, the TPACK model underscores that without full, robust availability and corresponding pedagogical mastery, the practical objectives of Business studies cannot be fully realized.

Moving to the utilization of telecommunication facilities, the findings revealed a moderate extent of utilization among Business studies teachers, with platforms such as Google Classroom, Zoom, and internal telephone systems being the most frequently employed. However, the test of the corresponding hypothesis introduced a critical structural dimension, establishing a significant difference based on school ownership. Specifically, the data confirmed that private secondary schools demonstrate a statistically higher utilization rate of these telecommunication tools than their public counterparts. This stark disparity aligns seamlessly with the systemic bottlenecks previously identified by Ademola and John (2022) and the infrastructural deficits highlighted by Lawrence (2019). Their research emphasized that while government-backed interventions exist, public schools often fail to translate these policies into active classroom utilization due to poor maintenance cultures, inadequate funding, and a lack of auxiliary infrastructure, such as reliable power supply. Conversely, private institutions are frequently better funded and driven by competitive educational standards, allowing them to provide a more stable technological environment. This dynamic is perfectly elucidated by the Technology Acceptance Model (TAM) formulated by Davis (1989). According to TAM, a teacher's actual utilization of technology is heavily contingent upon their "perceived ease of use." Because private schools typically offer superior technical support, consistent internet access, and institutional mandates that encourage digital communication, teachers in these environments naturally experience a significantly higher perceived ease of use. Consequently, their behavioral intention to integrate telecommunication tools into their instructional delivery is actualized far more frequently than that of public school educators, who are often left to navigate formidable technological hurdles without adequate administrative or technical support.

Perhaps the most critical infrastructural deficit identified in this study pertains to the availability of multimedia facilities. The descriptive analysis glaringly revealed that essential multimedia tools, such as interactive whiteboards, multimedia projectors, visual compact discs, and digital cameras, are rarely available for teaching Business studies in Delta North. Furthermore, the test of the corresponding hypothesis exposed a profound divide based on school ownership; while private schools reported a marginally better (though still inadequate) presence of these tools, public schools recorded an absolute

minimum mean score, indicating near-total non-availability. This acute shortage strongly corroborates the earlier assertions of Lawrence (2019), who found that despite various government-backed technological interventions, advanced educational technologies remain barely available and largely unutilized, particularly within the public school system. The pedagogical implications of this deficit are severe. As established in the literature, multimedia facilities are uniquely capable of integrating text, graphics, animation, and video to provide highly interactive, multi-sensory learning experiences. Without access to these visual and auditory stimuli, Business studies teachers are inevitably forced to revert to the traditional, teacher-centered "chalk and talk" methods that heavily rely on textbooks and chalkboards, a limitation previously lamented by Owuamanan (2018). Consequently, the fundamental objective of the National Digital Learning Policy (2023), to foster interactive and technology-driven learning environments, is severely compromised at the junior secondary level. This lack of multimedia integration means students are being deprived of the dynamic, hands-on instructional delivery necessary to grasp abstract business concepts, ultimately widening the technological gap between them and their global peers.

Finally, the investigation into internet facilities revealed a moderate overall extent of utilization among Business studies teachers. While fundamental tools such as Google search engines, electronic mail, and Microsoft Teams see regular application, more interactive collaborative platforms like Google Classroom, Zoom, and Canvas remain notably underutilized. This moderate level of utilization marks a noticeable progression from the findings of Oguejiofor and Okeke-Ezeanyanwu (2019), who previously observed that internet technologies were utilized to a very low extent by business educators. This upward shift suggests a gradual, albeit slow, integration of web-based resources into everyday instructional delivery within the region. However, the most revealing insight from this domain emerged from testing the final hypothesis, which confirmed that a teacher's age significantly dictates their utilization of these internet facilities. The data demonstrated a clear, statistically significant generational divide: younger educators (aged 20–30 years) reported the highest utilization rates, with usage steadily declining across successive age brackets, culminating in the lowest utilization among teachers aged 51 and above. This age-based disparity is perfectly elucidated by Davis's (1989) Technology Acceptance Model (TAM). Younger teachers, having grown up in a more digitized era, inherently possess a higher "perceived ease of use" and significantly lower anxiety regarding internet-based applications. Consequently, their behavioral intention to explore and embed digital search engines, file-sharing platforms, and e-learning tools into their instructional routines is much stronger. Conversely, older educators, who may not have received foundational digital training during their formative academic years, often experience a lower perceived ease of use, leading to unintentional technology avoidance. Therefore, while internet facilities are moderately utilized overall, this utilization is highly fragmented along generational lines, indicating that achieving a uniformly technology-driven learning environment will require targeted, age-sensitive capacity-building initiatives.

CONCLUSION

Based on the empirical evidence gathered and analyzed in this study, it is concluded that the integration of Information and Communication Technologies (ICTs) for teaching Business studies in junior secondary schools in Delta North remains sub-optimal. While basic computer hardware and standard internet facilities are moderately available and utilized, there is a pronounced and critical deficit in advanced educational technologies, particularly multimedia and telecommunication facilities. This infrastructural inadequacy is further compounded by systemic disparities, where public schools significantly lag behind private institutions in both the availability and active utilization of these modern instructional tools. Furthermore, a digital divide exists among the educators themselves, with older teachers exhibiting lower utilization rates of internet resources compared to their younger counterparts. Ultimately, the transition from traditional, teacher-centered instruction to a dynamic, interactive, and technology-driven learning environment has not been fully realized. Until the government and educational stakeholders comprehensively address these infrastructural gaps, equalize resources across school types, and provide

targeted capacity-building for all teachers, junior secondary school students in the region will continue to be deprived of the robust, 21st-century practical skills necessary to thrive in the modern global business landscape.

RECOMMENDATIONS

Based on the specific findings of this study, the following recommendations are made:

1. The Ministry of Education and private school proprietors should aggressively invest in the procurement and equitable distribution of modern computer facilities, including requisite software and uninterrupted power supplies, to ensure that basic technological hardware is highly available to all Business studies teachers regardless of their gender.
2. Educational administrators, particularly within the public school system, must prioritize the provision of stable internet broadband and dedicated internal telecommunication infrastructure to encourage teachers to routinely utilize collaborative platforms like Google Classroom, Zoom, and Canvas for instructional delivery.
3. Stakeholders in the education sector, including non-governmental organizations and community leaders, should urgently intervene to supply specialized multimedia facilities, such as interactive whiteboards, digital projectors, and digital cameras, to public schools to bridge the stark infrastructural gap and facilitate multi-sensory learning experiences.
4. The Post Primary Education Board (PPEB) should organize mandatory, age-sensitive digital literacy workshops and continuous professional development programmes specifically tailored to improve older educators' perceived ease of use, thereby boosting the uniform utilization of internet facilities across all generational demographics.

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