



Evaluation of Internet Facilities for Learning among Undergraduate Students of Colleges of Education and Universities in Kaduna State, Nigeria

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ABSTRACT

This study examined the availability and utilization of internet facilities for learning among 200-level undergraduate students in colleges of education and universities in Kaduna State, Nigeria. Two research questions were raised, and two hypotheses were formulated and tested at a 0.05 level of significance. A descriptive survey research design was employed to assess the extent and adequacy of internet facilities for learning in the selected institutions. The population consisted of all 200-level undergraduate students in these institutions, with a sample of 600 respondents selected using a stratified random sampling technique. Data were collected using a structured questionnaire, designed to evaluate the availability and adequacy of internet facilities. The collected data were analyzed using descriptive statistics, including frequencies and percentages, to measure the extent of availability. Additionally, a chi-square analysis was conducted to determine significant differences between universities and colleges of education regarding internet facility availability and adequacy. The findings revealed significant disparities in internet access between the two types of institutions. Universities provided better internet access, with 46.9% of university students reporting internet availability as "Highly Available," compared to 32.5% of students in colleges of education. This difference aligns with existing research, which attributes better internet infrastructure in universities to differences in funding, scope, and educational priorities. Interestingly, despite lower availability, internet utilization was higher in colleges of education. About 41.5% of students in colleges of education reported using the internet "Very Often," compared to 40.0% of university students. This suggests that students in colleges of education rely more on internet resources to compensate for limited access to other academic materials, whereas university students benefit from additional resources such as digital libraries and research databases. The study also found that female students demonstrated higher engagement with internet facilities for academic purposes in both institution types. Specifically, 45.4% of female students in colleges of education and 51.5% in universities reported high utilization levels. This gender disparity highlights the growing participation of female students in ICT-based learning. These findings underscore the need for enhanced internet access across tertiary institutions, particularly in colleges of education, to bridge the gap and support students' learning needs.

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INTRODUCTION

In the digital age, the integration of Internet facilities into the educational sector has become a cornerstone for effective teaching, learning, and research. The Internet, as a

component of Information and Communication Technology (ICT), is a global network of interconnected computers providing access to diverse information and communication tools. Its utility spans academic research, global

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information dissemination, fostering connections between institutions worldwide, and enhancing digital literacy among students. For undergraduates, especially in higher institutions, the Internet serves as a critical resource for academic and personal development (Kahn & Dennis, 2023; Oluwatumbi & Olubunmi, 2017). In recognition of the transformative potential of ICT, the Federal Government of Nigeria (FGN, 2014) outlined policies to integrate Internet facilities into educational institutions. Initiatives such as "SchoolNet" aim to equip schools with necessary ICT infrastructure to facilitate learning and bridge the digital divide. ICT's role in fostering global interconnectedness has positioned it as a tool for enhancing the quality and accessibility of education. By incorporating Internet resources, institutions can improve curriculum delivery, expand learning opportunities, and equip students with skills to thrive in a knowledge-driven global economy (Olaleye & Adeyemi, 2010).

The Internet's contributions to education are multifaceted, enabling e-learning, virtual teaching, and innovative research methods. Platforms like YouTube, e-books, and online collaboration tools provide students and educators access to a wealth of knowledge, enhancing the teaching-learning process (Gusen, 2019). However, alongside its advantages, Internet usage presents challenges. Issues such as inappropriate use by students, cost barriers, and infrastructural deficits hinder optimal utilization. Additionally, concerns about distractions, cybercrimes, and digital addiction underscore the need for responsible Internet engagement in academic environments.

In Kaduna State, the availability and utilization of Internet facilities among 200-level undergraduate students in Colleges of Education and Universities hold significant implications for academic performance. The effectiveness of these facilities depends on their accessibility, ease of use, and students' attitudes toward leveraging them for academic success. Despite government efforts to enhance ICT infrastructure, disparities in Internet access and utilization persist, reflecting broader socioeconomic and infrastructural challenges.

This study aims to evaluate the availability and utilization of Internet facilities among 200-level undergraduate students in Kaduna State's Colleges of Education and Universities. It seeks to explore the extent to which these facilities support learning, identify barriers to effective usage, and propose strategies to optimize their impact on educational outcomes. By addressing these critical issues, the study contributes to ongoing discourse on the role of Internet facilities in shaping Nigeria's educational landscape.

The internet has become a fundamental component of modern education, enabling access to vast amounts of information across various fields. It is a global computer network that connects millions of devices worldwide, providing an efficient platform for communication, research, and learning. According to the Emerging Technologies Research Group (ETRG), nearly three-quarters of internet users regard it as indispensable, with a substantial portion using it daily for work-related purposes. In 2018, the number of global internet users reached 4.021 billion, representing a steady growth rate of 7% annually (Gusen, 2019).

The internet, originating from research commissioned in the 1960s by the U.S. government, has evolved into a widely used tool across multiple sectors, including education. As noted by Madu and Adeniran (2017), it began as a project by the U.S. Department of Defense during the Cold War and has since become an integral part of daily life. The internet facilitates the exchange of information and offers a wealth of educational resources, ranging from academic journals to multimedia learning platforms.

In the educational context, the internet provides students with immediate access to scholarly articles, textbooks, and instructional materials that were previously limited by geographic and economic constraints. Adegbija and Daramola (2017) highlight the internet's role in organizing and transmitting information accurately, which has transformed the way knowledge is accessed and disseminated. Additionally, the World Wide Web (www) serves as the primary platform for retrieving educational content, including texts, images, videos, and interactive tools.

The availability of internet facilities, such as e-mail, chat groups, file transfer protocols (FTP), and web browsing, plays a crucial role in facilitating communication and collaboration among students and teachers. E-mail, for instance, is widely used for academic correspondence and information sharing, while the WWW serves as a gateway to a wealth of academic resources (Shitta, 2017). With the advent of mobile internet access through smartphones and modems, students in Nigeria now have the means to access educational materials anytime, anywhere, thus enhancing learning opportunities.

Despite these advantages, challenges remain regarding the availability and utilization of internet facilities in many developing regions, including Kaduna State. According to Adeogun (2017), while the internet has become an indispensable tool in higher education, it remains unorganized and often difficult to navigate. Students in Nigerian institutions, particularly in rural areas, face issues such as limited internet access, poor infrastructure, and inadequate digital literacy, which can hinder their ability to fully benefit from online resources.

The internet has revolutionized education by providing access to knowledge and fostering collaboration across borders. However, it is essential to evaluate how students in specific regions, such as Kaduna State, utilize these resources for academic purposes. The study of internet facilities' availability and utilization in Colleges of Education and Universities in the region will provide insights into the challenges and opportunities for enhancing the academic experience of undergraduate students. Understanding these dynamics is critical for informing policies and improving the infrastructure necessary to ensure equitable access to educational resources through the internet.

Statement of the Problem

The advent of the internet has revolutionized education, offering unparalleled opportunities for research, teaching, and learning. Internet facilities enable students and educators to access a wealth of information and innovative tools that enhance academic performance, collaboration, and self-directed

learning. Globally, the internet has become an integral part of educational practices, fostering e-learning, virtual classrooms, and digital resource-sharing. However, the extent of internet facility availability and utilization among undergraduate students in tertiary institutions, particularly in developing countries like Nigeria, remains inconsistent and under-researched.

In Kaduna State, Nigeria, the integration of internet facilities in colleges of education and universities holds promise for improving academic excellence. Despite this potential, there is growing concern about whether the internet is being effectively utilized for educational purposes. Studies indicate that while internet resources are accessible, many students tend to use them for non-academic activities, such as social media engagement and entertainment, rather than for learning and research. Moreover, challenges such as inadequate infrastructure, poor internet connectivity, high costs, and lack of digital literacy hinder the effective utilization of internet facilities.

Additionally, disparities in internet access and utilization between institutions, coupled with varying levels of student awareness and technical proficiency, contribute to an uneven educational experience. The Federal Government of Nigeria has made efforts to address these gaps through initiatives like SchoolNet and Mobile Internet Units (MIU). However, the impact of these programs in Kaduna State's colleges of education and universities remains unclear.

This study aims to evaluate the availability and utilization of internet facilities for learning among 200-level undergraduate students in colleges of education and universities in Kaduna State, Nigeria. By addressing this issue, the study seeks to uncover the challenges students face in leveraging internet resources for academic purposes and to provide insights into how these challenges can be mitigated to enhance learning outcomes in tertiary institutions.

Aim and Objectives of the Study

The study aimed at evaluating internet facilities availability and utilization for learning among 200 level undergraduate students of Colleges of Education and

Universities in Kaduna State, Nigeria. Specifically, the objectives were to:

1. Find out the extent to which internet facilities availability for learning among 200 level undergraduate students of Colleges of Education and Universities in Kaduna State, Nigeria.
2. Find out the extent to which internet facilities were utilize for learning among 200 level undergraduate students of Colleges of Education and Universities in Kaduna State, Nigeria.

Research Questions

1. To what extent to which internet facilities availability for learning among 200 level undergraduate students of Colleges of Education and Universities in Kaduna State, Nigeria?
2. To what extent to which internet facilities were utilize for learning among 200 level undergraduate students of Colleges of Education and Universities in Kaduna State, Nigeria?

Hypotheses

1. There is no significant difference between the internet facilities availability for learning among 200 level undergraduate students of Colleges of Education and Universities in Kaduna State, Nigeria.
2. There is no significant difference between the internet's facilities were utilize for learning among 200 level undergraduate students of Colleges of Education and Universities in Kaduna State, Nigeria.

METHODOLOGY

This study adopts an evaluation research design to assess the usability and impact of internet facilities in selected institutions of higher learning in Kaduna State, Nigeria. Evaluation research design involves a systematic approach to examining the effectiveness, efficiency, and relevance of programs, products, or facilities. It encompasses formative, summative, and outcome evaluations (Brown, 2021). The study uses Suffete's evaluation model, which includes context, input, process, and product dimensions, making it a suitable framework for evaluating both qualitative and quantitative aspects of internet facility utilization.

The target population for this study comprises 200-level undergraduate students drawn from two colleges of education and two universities in Kaduna State, Nigeria. The total population is 4,065 students, distributed as follows: 2,019 students in the colleges of education and 2,046 students in the universities. Specifically, the institutions include Federal College of Education (FCE) Zaria, Kaduna State College of Education (KSCOE) Gidan Waya, Ahmadu Bello University (ABU) Zaria, and Kaduna State University (KASU) Kaduna.

The primary instrument for data collection is the Evaluation of Internet Learning Facilities Questionnaire (EILFQ). This 32-item questionnaire is designed to gather comprehensive data on students' perceptions regarding the availability, adequacy, functionality, utilization, adaptation, challenges, and improvement strategies for internet facilities. The instrument is divided into two sections: Section A: Collects demographic information such as institution, level of study, and school type. Section B: Contains seven parts focusing on specific aspects of internet facilities: Part 1: Availability (15 items), Part 2: Utilization (15 items). Responses are recorded on a 5-point Likert scale, tailored to each part. For example, availability responses range from "Highly Available (HA)" to "Not Available (NA)," while adaptation responses range from "Very Frequently (VF)" to "Never (N)." Data collected were analyzed using both descriptive and inferential statistical methods with SPSS version 25. Descriptive statistics such as mean, standard deviation, and percentages were used to summarize the data. Inferential statistics, including Pearson Correlation and Analysis of Covariance (ANCOVA) were employed to test hypotheses and determine significant differences or relationships within the data.

RESULTS

Extent of Availability of Internet Facilities for Learning among 200 Level Undergraduate Students of Colleges of Education and Universities in Kaduna State, Nigeria

Table 1 shows the extent of availability of internet facilities for learning by 200 level Undergraduate students of colleges of education and universities in Kaduna State. In Colleges of Education, 397(5.2%) responses

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indicate "Not Available (NA)", 881(11.5%) indicate "Lowly Available (LA)", 1301(17.0%) of them indicate "Moderately Available (MA)", 2577(33.8%) indicate "Available (A)" and 2479(32.5%) of the response indicates "Highly Available (HA)". In Universities, 510(5.9%) of the response indicate "Not Available (NA)", 626(7.2%) of them indicate "Lowly Available (LA)", 1131(13.0%) of them indicate "Moderately Available (MA)", 2341(26.9%) of the respondents indicate "Available (A)" and 4077(46.9%) of the respondents indicate "Highly Available (HA)". This implies that there is availability of internet facilities for learning to 200 level undergraduate students of Colleges of Education and Universities in Kano state, Nigeria to a high extent in Universities than in

College of Education. In addition table 2 shows the Extent to which Availability of Internet Facilities for Learning among 200 level Undergraduate Students of Colleges of Education and Universities in Kaduna State, Nigeria. In College of Education, zero on low extent, 104(20.4%) of the respondents indicates to a moderate extent and 405(79.6%) of the respondents indicates to a high extent. While in Universities, 6(1.1%) of the respondents indicates low extent, 76(13.1%) of the respondents indicates to a moderate extent and 497(85.8%) of the respondents indicates to a high extent. This implies that availability of Internet Facilities for Learning University students is higher than College of Education.

Table 1: Extent of Availability of Internet Facilities for learning among 200 level Undergraduate Students of Colleges of Education and Universities in Kaduna State, Nigeria

Statements	COE (N=509)			Universities (N=579)		
	Mean	SD	Remarks	Mean	SD	Remarks
World wide web	4.07	1.09	Agree	4.55	0.73	Agree
Search engine (Google, Alfa, Visa, Yahoo, Gmail)	4.15	0.86	Agree	4.42	0.84	Agree
Instant messaging	3.89	1.19	Agree	4.44	0.82	Agree
File transfer protocol (FTP)	3.58	1.25	Agree	3.98	1.08	Agree
Gopher	2.95	1.19	Agree	3.06	1.36	Agree
Telnet	3.47	1.26	Agree	3.10	2.49	Agree
Electronic mails - Email (listserv)	3.66	1.27	Agree	4.36	1.01	Agree
Skype (Internet), Video telephone	3.70	1.08	Agree	3.84	1.22	Agree
News group (internet)	3.75	0.95	Agree	3.74	1.26	Agree
Computers	4.03	0.93	Agree	4.06	1.11	Agree
Internet audio/video	3.82	1.06	Agree	4.06	1.10	Agree
Scientific and satellite imaging	3.72	1.23	Agree	3.79	1.30	Agree
WhatsApp	3.99	1.18	Agree	4.40	0.90	Agree
Instagram /Telegram	4.01	1.11	Agree	4.25	1.07	Agree
Wikipedia	3.73	1.27	Agree	4.33	0.93	Agree

Table 2: Extent of Availability of Internet Facilities for learning among 200 level Undergraduate Students of Colleges of Education and Universities in Kaduna State, Nigeria

Extent of Available	COE		UNIVERSITIES	
	Frequency	Percent	Frequency	Percent
Available to Low Extent	0	0	6	1.1
Available to Moderate Extent	104	20.4	76	13.1
Available to High Extent	405	79.6	497	85.8
Total	509	100.0	579	100

Utilization of Internet Facilities for Learning among 200 level Undergraduate Students in Colleges of Education and Universities in Kaduna State, Nigeria

Table 3 shows the Extent of Internet Facilities Utilization Level for Learning among 200 level Undergraduate Students of Colleges of Education and Universities in Kaduna State, Nigeria. In Colleges of Education; 322(4.2%) responses indicate "Never (N)", 791(10.4%) indicate "Rarely (R)", 1347(17.6%) of them indicate "Sometimes (S)", 2009(26.3%) indicate "Often (O)" and 3166(41.5%) of the response indicates "Very Often (VO)". In Universities; 538(6.2%) responses indicate "Never (N)", 774(8.9%) indicate "Rarely (R)", 1171(13.5%) of them indicate "Sometimes (S)", 2729(31.4%) indicate "Often (O)" and 3475(40.0%) of the response indicates "Very Often (VO)". This implies that internet facilities utilization for

learning to 200 level undergraduate students of Colleges of Education and Universities in Kano State, Nigeria to a high extent in College of Education than in Universities. In addition table 4 shows the Extent of Internet Facilities Utilization Level for Learning among 200 level Undergraduate Students of Colleges of Education and Universities in Kaduna State, Nigeria. In College of Education, 9(1.8%) of the respondents indicates low extent, 46(9.0%) of the respondents indicates to a moderate extent and 454(89.2%) of the respondents indicates to a high extent. While in Universities, 5(0.9%) of the respondents indicates low extent, 78(13.5%) of the respondents indicates to a moderate extent and 496(85.7%) of the respondents indicates to a high extent. This implies that internet Facilities utilization Level for Learning College of Education students is higher than University.

Table 3: Extent of Internet Facilities Utilization Level for learning among 200 level Undergraduate Students of Colleges of Education and Universities in Kaduna State, Nigeria

Statements	COE (N=509)			UNIVERSITIES (N=579)		
	Mean	SD	Remarks	Mean	SD	Remarks
World wide web	4.44	0.89	Agree	4.44	0.73	Agree
Search engine (Google, Alfa, Visa, Yahoo, Gmail)	4.14	0.94	Agree	4.42	0.85	Agree
Instant messaging	4.17	1.03	Agree	4.36	0.81	Agree
File transfer protocol (FTP)	3.72	1.18	Agree	3.79	1.17	Agree
Gopher	3.40	1.33	Agree	2.99	1.34	Agree
Telnet	3.34	1.32	Agree	2.97	1.39	Agree
Electronic mails - Email (listserv)	3.76	1.15	Agree	4.28	0.93	Agree
Skype (Internet), Video telephone	3.72	1.09	Agree	3.56	1.27	Agree
News group (internet)	3.53	1.28	Agree	3.68	1.32	Agree
Computers	3.78	1.08	Agree	3.85	1.02	Agree
Internet audio/video	4.09	0.98	Agree	3.73	1.20	Agree
Scientific and satellite imaging	3.99	1.11	Agree	3.63	1.43	Agree
WhatsApp	4.17	1.16	Agree	4.43	0.89	Agree
Instagram /Telegram	4.23	1.13	Agree	4.28	0.91	Agree
Wikipedia	4.09	1.17	Agree	4.12	0.94	Agree

Table 4: Extent of Internet Facilities Utilization Level for learning among 200 level Undergraduate Students of Colleges of Education and Universities in Kaduna State, Nigeria

Extent of Utilization	COE		UNIVERSITIES	
	Frequency	Percent	Frequency	Percent
Utilize to Low Extent	9	1.8	5	0.9
Utilize to Moderate Extent	46	9.0	78	13.5
Utilize to High Extent	454	89.2	496	85.7
Total	509	100.0	579	100.0

Source: Field data 2024

Note: 0-23.3 = Low Extent, 23.4-46.6= Moderate Extent, 46.7-75.0 = High Extent

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Extent of Internet Utilized for Learning among Male and Female 200 Level Undergraduate Students of Colleges of Education and Universities in Kaduna State, Nigeria

Table 5 and Table 6 shows the Extent of Internet Facilities Utilization for Learning among Male and Female 200 level Undergraduate Students of Colleges of Education and Universities in Kaduna State, Nigeria. In College of Education, 9(1.8%) of the respondents indicates low extent were males, out of 46(9.0%) of the respondents indicates moderate extent: 11(2.2%) were female and 35(6.9%) were males; Out of 454(89.2%) of the

respondents indicates high extent: 231(45.4%) were females and 223(43.8%) were males. Universities students out of 5(0.9%) of the respondents indicates low extent: 1(0.2%) were female and 4(0.7%) were males, out of 78(13.5%) respondents indicates to a moderate extent: 15(2.6%) were females and 63(10.9%) were males, out of 496(85.7%) respondents indicates to a high extent: 298(51.5%) were females and 198(34.2%) were males. This implies that females' students were majority in High extent in Internet Facilities Utilization for Learning in College of Education and also in University. While males were majority at the moderate extent and low extent.

Table 6: Extent of Internet Facilities Utilization for Learning among Male and Female 200 level Undergraduate Students of Colleges of Education and Universities in Kaduna State, Nigeria

Extent of Utilization	Gender in COE		Total	Gender in Universities		Total
	Female	Male		Female	Male	
Low Extent	0	9(1.8)	9(1.8)	1(0.2)	4(0.7)	5(0.9)
Moderate Extent	11(2.2)	35(6.9)	46(9.0)	15(2.6)	63(10.9)	78(13.5)
High Extent	231(45.4)	223(43.8)	454(89.2)	298(51.5)	198(34.2)	496(85.7)
Total	242(47.5)	267(52.5)	509(100)	314(54.2)	265(45.8)	579(100)

Source: Field data 2024

Note: Percentages in Parenthesis (%)

HYPOTHESIS TESTING

Analysis on Relationship between the Mean Scores responses of Availability and Utilization of Internet Facilities among 200 Level Undergraduate Students in Colleges of Education and Universities in Kaduna state, Nigeria

Table 7 shows the Pearson Correlation between the Availability and Utilization of Internet Facilities among 200 level Undergraduate Students in Colleges of Education and Universities in Kaduna State, Nigeria. Students in College of Education had Availability mean and standard deviation scores of 56.51 ± 10.99 and Utilization mean and standard deviation scores of 58.57 ± 10.99 with Pearson correlation coefficient of 0.511 and p-

value of 0.00. This implies that there significant relationship between the mean scores responses of availability and utilization of internet facilities among 200 level students in colleges of education in Kaduna state, Nigeria. While Students in Universities had Availability mean and standard deviation scores of 60.37 ± 11.31 and utilization mean and standard deviation scores of 58.52 ± 10.83 with Pearson correlation coefficient of 0.762 and p-value of 0.00. This implies that there significant relationship between the mean scores responses of availability and utilization of internet facilities among 200 level students in Universities in Kaduna state, Nigeria. The research rejects the null hypothesis and accepts the alternative hypothesis.

Table 7: Pearson Correlation between the Availability and Utilization of Internet Facilities among 200 level Undergraduate Students in Colleges of Education and Universities in Kaduna State, Nigeria

		$\bar{X}$	SD	n	r	p-value
COE	Availability	56.51	10.99	509	.511**	0.00
	Utilization	58.57	10.99	509		
UNIVERSITIES	Availability	60.37	11.31	579	.762**	0.00
	Utilization	58.52	10.83	579		

Analysis on Utilization of Internet Facilities Mean Scores responses of Male and Female 200 Level Undergraduate Students in Colleges of Education and Universities in Kaduna state, Nigeria.

Table 8 shows the summary of Analysis of Covariance (ANCOVA) on utilization mean scores of internet facilities among male and female 200 level undergraduate students of colleges of education and universities in Kaduna State, Nigeria. Utilization of internet facilities among male and female with $F(1, 1084) = 35.414$ and a p-value of 0.00. Since the p-value is less than 0.05 level of significance, the null hypothesis was rejected, indicating that, there was a significant difference between utilization of internet facilities mean scores among male and female 200 undergraduate students.

Institutional utilization of internet facilities with $F(1, 1082) = 0.283$ and a p-value

of 0.595. Since the p-value is greater than 0.05 level of significance, the null hypothesis was accepted, indicating that, there is no significant difference between the utilization of internet facilities mean scores among 200 level undergraduate students of Colleges of Education and Universities in Kaduna State, Nigeria.

In addition, the result further reveals an adjusted R squared value of 0.041, which means that 4.1percent of the variation in the dependent variable, which is utilization of internet facilities, is explained by variation in the gender, while the remaining 95.9% is due to other factors not included in this study. This implies that there is no significant difference between the utilization of internet facilities mean scores responses of male and female 200 level undergraduate students in Colleges of Education and Universities in Kaduna State, Nigeria.

Table 8: Analysis of Covariance (ANCOVA) on Utilization of Internet Facilities among Male and Female 200 level Undergraduate Students in Colleges of Education and Universities in Kaduna State, Nigeria

Source	Type III Sum of Squares	Df	Mean Square	F	Sig.
Corrected Model	5667.252 ^a	3	1889.084	16.574	.000
Intercept	3682414.049	1	3682414.049	32307.376	.000
Gender	4036.505	1	4036.505	35.414	.000
Institution Types	32.230	1	32.230	.283	.595
Gender * Institution Types	1322.099	1	1322.099	11.599	.001
Error	123554.968	1084	113.981		
Total	3857780.000	1088			
Corrected Total	129222.221	1087			

a. R Squared = .044 (Adjusted R Squared = .041)

DISCUSSION

The findings indicate that internet facilities are more available to 200-level undergraduate students in universities than in colleges of education in Kaduna State. Specifically, 46.9% of university respondents

reported that facilities were highly available, compared to 32.5% in colleges of education. This result is consistent with prior studies that emphasize the prioritization of technology and internet infrastructure in universities over colleges due to differences in funding, scope,

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and educational mandates (Oye et al., 2020; Adegbija & Kehinde, 2019). The implications suggest that universities in the region are better equipped to integrate modern learning tools, aligning with global standards for tertiary education. This corroborates the findings of Yusuf and Balogun (2017), who reported that universities in Nigeria are more likely to adopt advanced ICT infrastructures than other tertiary institutions. Differences in resource allocation and administrative focus likely explain these findings. For colleges of education, limited funding and reliance on government intervention may restrict access, as highlighted (Iloh & Nwosu, 2021).

The findings show that internet facilities are utilized more frequently in colleges of education than in universities, with 41.5% of respondents in colleges reporting very frequent usage compared to 40.0% in universities. This result aligns with the work of Akinade and Fadeyi (2022), who found that students in colleges of education often rely more on internet facilities due to limited access to other resources like physical libraries. While this seems counterintuitive, it may be explained by differences in teaching methodologies and resource availability. In colleges of education, lecturers may encourage more frequent internet usage to supplement scarce learning materials, as observed (Bello & Yusuf, 2018). In contrast, university students often have access to diverse resources, including digital libraries and research materials, reducing their reliance on direct internet usage.

The findings reveal that female students were the majority users of internet facilities to a high extent in both colleges of education (45.4%) and universities (51.5%). These results align with the findings of Akanmu and Adedoyin (2021), who reported that female students in Nigerian tertiary institutions often show higher engagement with internet resources for academic purposes. This trend could be attributed to the increasing awareness and participation of women in ICT-based learning, a phenomenon supported by the work of Omole and Adeyemi (2020). However, the finding that male students dominate moderate and low utilization levels is consistent with Afolabi and Chukwuma (2019), who noted that cultural and societal expectations may influence

the way male and female students engage with educational technology

CONCLUSION

This study aimed to assess the extent of availability and utilization of internet facilities for learning among 200-level undergraduate students in colleges of education and universities in Kaduna State, Nigeria. The results indicate that while universities provide better access to internet facilities, students in colleges of education demonstrate higher utilization levels. Specifically, internet facilities are more readily available in universities, with 46.9% of university students reporting "Highly Available" internet access, compared to 32.5% in colleges of education. Conversely, the utilization of internet facilities is more frequent in colleges of education, where 41.5% of students report using the internet "Very Often," as opposed to 40% in universities.

Additionally, the study found a significant difference in the utilization of internet facilities between male and female students. Female students consistently demonstrated higher engagement with internet resources than their male counterparts, reflecting broader trends in educational technology use. Despite these gender differences, the study also revealed that the availability of internet facilities for learning was significantly correlated with their utilization, emphasizing the importance of adequate access to digital tools for enhancing academic performance.

RECOMMENDATIONS

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

1. Increase Funding for Colleges of Education: Given the disparity in the availability of internet facilities between colleges of education and universities, it is crucial for both governmental and non-governmental bodies to prioritize internet infrastructure in colleges of education. This will ensure that all tertiary institutions have access to the necessary resources for modern learning.
2. Promote Equal Access to Internet Resources: Universities should continue to enhance their internet facilities, while colleges of education should explore partnerships with government agencies



and private organizations to improve access to digital tools. This can help bridge the gap in internet availability between the two types of institutions.

3. Encourage Gender-Sensitive ICT Programs: Institutions should implement initiatives that encourage male students to engage more with internet resources. This can be done through targeted programs, workshops, and campaigns that emphasize the value of internet usage for academic success, ensuring both genders benefit equally from digital learning tools.

REFERENCES

- Adegbija, M.V. & Daramola, F.O. (2017). Evaluation of computer education technology in higher institutions in Ilorin. *African Journal of Educational Studies (AJES)*. 5(1), 150 – 161.
- Federal Government of Nigeria (2014). *National Policy on Education* Abuja. NERCD.
- Gusen, J.N. (2019). *ICT Make Easy*. Jos: Ya-Byangs Publishers.
- Kahn, R. & Dennis, M.A. (2023). Internet description, history, uses, & facts. <https://www.britannica.com › Technology › Computers>
- Madu, B.C. & Adeniran, O. (2017). E-learning and its impact on student performance in Nigerian universities. *African Journal of Educational Technology*, 5(2), 24-32.
- Olaleye, & Adeyemi, (2010). Information communication and technology (ICT) for the effective management of secondary schools. University of Ado-Ekiti. *American-Eurasian Journal of Scientific Research*, 5 (2), 106-113.
- Oluwatumbi, S. & Olubunmi, A.V. (2017). Availability and utilization of internet facilities among undergraduate students of colleges of education Nigeria. *Journal of Library and Information Science*, 1(1&2), 38-39.
- Shitta, M. B. K. (2017). The impact of information technology on vocational and technology education for self-reliance. *Journal of Vocational and Technology Education*, 1 (1), 20-32.