Journal for Lesson and Learning Studies
Volume 7, Number 1, 2024 pp. 184-192
P-ISSN: 2615-6148 E-ISSN: 2615-7330
Open Access: https://doi.org/10.23887/jlls.v7i1.70517

An Evaluation of Graduate Students' Perceptions in ICT Utilization

Yusuf Suleiman[1], Tinuke Bilikis Ibrahim-Raji[2]*

[1,2]Educational Management & Counseling, Faculty of Education, Al-Hikmah University, Ilorin-Nigeria

ARTICLE INFO

Article history:
Received November 22, 2023
Accepted March 06, 2024
Available online April 25, 2024

Kata Kunci:
TIK, Pemanfaatannya, Persepsi Siswa

Keywords:
ICT, Utilization, Students Perception

ABSTRAK

Saat ini terdapat kesenjangan persepsi, penggunaan dan akses terhadap TIK di kalangan mahasiswa pascasarjana di perguruan tinggi swasta. Hal ini disebabkan oleh faktor-faktor yang berkaitan dengan aspek individu, seperti jenis kelamin dan tingkat pendidikan. Oleh karena itu penelitian ini dilakukan untuk menganalisis persepsi mahasiswa pascasarjana tentang penggunaan dan pengaruh TIK dalam upaya penelitian studi yang mereka lakukan. Penelitian ini menggunakan desain survei deskriptif. Peneliti memilih 100 mahasiswa pascasarjana secara acak dari masing-masing fakultas di universitas untuk mengisi kuesioner survei. Untuk mengetahui apakah alat ukur tersebut reliabel dan konsisten maka dilakukan uji reliabilitas. Hasilnya menunjukkan bahwa pemanfaatan TIK di kalangan mahasiswa pascasarjana sangat penting untuk pekerjaan penelitian mereka. Namun masih banyak siswa yang belum sempurna dalam penggunaan perangkat TIK meskipun tersedia di sekolah dan lingkungannya. Oleh karena itu, mahasiswa harus didorong untuk menggunakan perangkat TIK dalam kegiatan penelitiannya. Pemanfaatan TIK akan membantu mahasiswa menjadi lebih efektif dan efisien dalam kegiatan penelitiannya.

ABSTRACT

Currently there is a gap in perception, use and access to ICT among postgraduate students at private universities. This is caused by factors related to aspects of the individual, such as gender and educational attainment. Therefore, this study was conducted to analyze postgraduate students perceived the use of and influence of ICT in their research efforts. The study used a descriptive survey design. The researcher chose 100 postgraduate students at random from each of the faculties at university to complete the survey questionnaire. To find out if the measurement tools were reliable and consistent, a reliability test was done. The results show that ICT utilization among postgraduate students is essential for their research work. However, many students are not perfect in the usage of ICT devices despite their availability in the school and their environment. Therefore, students should be encouraged to use ICT devices in their research activities. The usage of ICT would help the students to be more effective and efficient in their research activities.

1. INTRODUCTION

Information and Communication Technology (ICT) is a set of diverse resources used for creating, storing, managing, and communicating information, and to support teaching, learning and research activities. ICT devices are instruments that are effectively used to create, collect, organize, process, and present data and information regardless of location and distance (Gharti, 2019; Reddy et al., 2022). ICT has already had an influence on many aspects of our lives, including business, entertainment, education, and others, according to this definition (Lampropoulos et al., 2019; Sari et al., 2020; Yu et al., 2021). Due to the rapidly changing environmental dynamics of globalization, the need for ICT lifelong learning, and competition between private and public institutions, the use of ICTs in higher education has burst both locally and globally (Bansa & Asrini, 2020; Robertson & Al-Zahrani, 2012). In education, new learning and research trends have emerged as a result of changing learning techniques and the fast advancement of computer technology (Choi & Mislevy, 2022; McLoughlin, 2011). Because of the potential impact on educational, social, and economic dynamics, higher educational institutions must integrate ICT to keep up

Corresponding author
*E-mail addresses: atinukebilikis259@gmail.com (Tinuke Bilikis Ibrahim-Raji)

with the digital era. The educational advantages of using ICTs in teaching and learning have been thoroughly documented. Their influence on thinking, inspiring learners, improving students' academic achievement, and strengthening tutoring are only a few of the advantages (Başaran, 2013; Kuo et al., 2019).

Despite the benefits, research reveals that higher education institutions have been hesitant to capitalize on ICT potential, particularly for teaching and learning reasons, and Nigeria is no different. Education's primary goal is to provide students with the skills and attitudes necessary for success in today's world of knowledge and society. Certain departments, teachers, faculty, or subject matter may exist in many educational institutions that are more conducive to the introduction of ICT (Qodr et al., 2021; Torres-Gastelú & Kiss, 2016). The Internet, in particular, provides members of academia (faculties, students, and researchers) with widespread access to both traditional and non-traditional sources of information. In this approach, the use of ICT devices is projected to improve students' abilities in teamwork, communication, problem-solving, and lifelong learning, transforming them into effective knowledge workers (Nardo et al., 2022; Rahiem, 2020).

In particular, females utilize ICT (such as the internet) for communication and educational objectives, whereas their male counterparts use ICT for entertainment (Bagon et al., 2018; Yildirim, 2017). According to previous study kids now have a better chance of accessing high-quality education that is ICT-compatible (Masoumi, 2021). This research work identifies a deficit in the area of ICT availability, usage, and perception among postgraduate students at private universities. A study on ICT availability and usage among students is interesting in the context of Nigerian private Universities (Har et al., 2019). This study is significant because, as far as we are aware, it is one of the few studies on ICT access and usage among students at Al-Hikmah University. It also examines the relationship between these variables and other personal aspects, such as gender and educational background.

In light of the above-mentioned favorable academic effects of ICT, students are required to obtain ICT literacy skills, as ICT has fundamentally altered the nature of teaching and learning (Ade-Ojo et al., 2022; Boateng & Ameyaw, 2019). As a result, the current study intends to analyze the perspective and use of ICT among Al-Hikmah University Ilorin Nigeria postgraduate students. The novelty of this study that it focuses on gathering data on postgraduate university students' actual ICT usage styles for personal and educational activities, as well as assessing students' perceptions of ICT in terms of perceived advantages and scope of ICT as a resource in their personal and educational activities.

2. METHOD

The study adopted a descriptive survey design in identifying the perception of postgraduate students' usage of ICT and its challenges in private universities in Nigeria, and the impact of such devices on educational development in Nigeria (Seixas et al., 2018). The population of this study comprises all postgraduate students in Al-Hikmah University cutting across all the programs and faculties. A random sampling technique was adopted to select the total number of 100 students from all the faculties in the postgraduate school of Al-Hikmah University Ilorin to fill out the survey questionnaire. The data collection used is a structured questionnaire was aimed at eliciting the respondents' usage and accessibility perceptions of ICT in their research. Part one of the questionnaires sought information on demographic data such as sex, name of faculty, department, and program of study. Part two of the questionnaire required the respondents to supply information on perceptions of the accessibility of ICT, its usage and the device efficiency. To find out if the measurement tools were reliable and consistent, a reliability test was done. The Spearman-Brown equal length values are 0.712, and the Cronbach alpha is 0.754, hence the questionnaires were deemed reliable for the study. For each of the statements in the instrument, participants were requested to choose answers based on the Likert scale of Strongly Agree, Agree, Undecided, Disagree, and Strongly Disagree to garner information on the perception of the ICT device's availability and usage.

3. RESULT AND DISCUSSION

Result

Accessibility, utilization and effectiveness are the main factors to determine the perception of students in the usage of ICT devices for their research work. Five–point Likert is considered an internal scale for all the questions statements. However, descriptive analysis techniques were employed to analyze the data obtained. If the mean is from 1 to 1.8 it signifies strongly disagree and for the mean from 1.81 to 2.60, it signifies disagree. Likewise, if the mean is from 2.61 to 3.40 indicates undecided and the mean

from 3.41 to 4.20 signifies agree. Also, from 4.21 to 5 the mean is strongly agreed. The result of accessibility of ICT to learning is show in Table 1.

Table 1. Accessibility of ICT to Learning

S/N	Statements	Response Percentage (N=93)					Mean	Standard Deviation	Remark
		SD	D	U	A	SA			
1	Interested in using smartphone/ ICT device for learning	5.4	9.7	6.5	28.0	50.5	4.09	1.204	Agreed
2	Using smartphone/ICT devices for study would be helpful	0.0	8.6	10.8	39.8	40.9	4.13	0.923	Strongly Agreed
3	Using smartphone/ICT devices to study would help me to utilize my time more productive	7.5	14.0	12.9	37.6	28.0	3.65	1.239	Agreed
4	I am willing to install a learning app on my smartphone/ ICT devices to help me study	4.3	6.5	14.0	46.2	29.0	3.89	1.037	Agreed
5	Using smartphone/ ICT devices to study will help me to collaborate better with my course mates	2.2	5.4	9.7	51.6	31.2	4.04	0.908	Agreed
6	Using my smartphone/ ICT devices in class would be a distraction to my fellow students and myself	6.5	21.5	16.1	34.4	21.5	3.43	1.228	Agreed
	Grand mean						**3.87**		

Table 1 shows the Mean and Standard Deviation of students' responses on their accessibility of ICT for learning. The table reveals the computed mean score of 4.09 with a Standard Deviation of 1.204 for item one, mean score of 4.13 with a Standard Deviation of 0.923 for item two, mean score of 3.65 with a Standard Deviation of 1.239 for item three, mean score of 3.89 with standard Deviation of 1.037 for item four, mean score of 4.04 with standard Deviation of 0.908 for item five and mean score of 3.43 with standard Deviation of 1.228 for item six. The table reveals further that, the grand mean score of responses to the six (6) items was 3.85 which was more than the decision mean score of 3.00. This implies that the majority of participants agreed to have ICT accessibility at Al-Hikmah University. Then the result of usage of ICT for learning is show in Table 2.

Table 2. Usage of ICT for Learning

S/N	Statements	Response Percentage (N=93)					Mean	Standard Deviation	Remark
		SD	D	U	A	SA			
1	Using ICT to learn is important	4.3	0.0	6.5	43.0	46.2	4.27	0.922	Strongly Agreed
2	Using ICT to learn will be beneficial because it will be useful now and in my	3.2	3.2	5.4	46.2	41.9	4.20	0.927	Agreed

S/N	Statements	Response Percentage (N=93)					Mean	Standard Deviation	Remark
		SD	D	U	A	SA			
	future job								
3	Using ICT helps me to better understand what I am learning	1.1	6.5	3.2	53.8	35.5	4.16	0.851	Agreed
4	Using ICT helps me to remember what I am learning	3.2	5.4	9.7	51.6	30.1	4.00	0.956	Agreed
5	Using ICT engages students and creates an enabling atmosphere in the classroom	1.1	7.5	9.7	50.5	31.2	4.03	0.902	Agreed
6	Using ICT motivates me to learn	2.2	7.5	12.9	48.4	29.0	3.95	0.960	Agreed
7	Using ICT to check social media in class during lectures is a distraction	7.5	15.1	10.8	47.3	19.4	3.56	1.184	Agreed
8	Using ICT enhances my academic skills and capabilities	2.2	3.2	11.8	45.2	37.6	4.13	0.900	Agreed
9	Using ICT enhances my capability to solve academic problems	2.2	3.2	12.9	50.5	31.2	4.05	0.877	Agreed
10	Using ICT provides access to sufficient information to fulfil my learning purpose	2.2	4.3	11.8	51.6	30.1	4.03	0.890	Agreed
11	I prefer to use soft copies of documents over hard copies for their ICT compatibility	2.2	8.6	18.3	40.9	30.1	3.88	1.009	Agreed
	Grand Mean						**4.02**		

Table 2 shows the Mean and Standard Deviation of students' responses on their usage of ICT for learning. The table reveals the computed mean score of 4.27 with a Standard Deviation of 0.922 for item one, a mean score of 4.20 with a Standard Deviation of 0.927 for item two, a mean score of 4.16 with a Standard Deviation of 0.851 for item three, the mean score of 4.00 with standard Deviation of 0.956 for item four, the mean score of 4.03 with standard Deviation of 0.902 for item five, the mean score of 3.95 with standard Deviation of 0.960 for item six, the mean score of 3.56 with Standard Deviation of 1.184 for item seven, mean score of 4.13 with Standard Deviation of 0.900 for item eight, the mean score of 4.05 with Standard Deviation of 0.877 for item nine, mean score of 4.03 with standard Deviation of 0.890 for item ten and mean score of 3.88 with standard Deviation of 1.009 for item eleven. The table reveals further that, the grand mean score of responses to the eleven (11) items was 4.02 which was more than the decision mean score of 3.00. This implies that the majority of participants agreed to the usage of ICT for learning. Then the result of usage of ICT device is show in Table 3.

Table 3. Usage of ICT Devices

S/N	Statements	Response Percentage (N=93)					Mean	Standard Deviation	Remark
		VE	E	U	I	VI			
1	Effective usage of ICT device CD-ROM	43.0	41.9	5.4	6.5	3.2	1.85	1.010	Effective
2	Effective usage of ICT device Computers	49.5	38.7	5.4	2.2	4.3	1.73	0.980	Very Effective
3	Effective usage of ICT device Internet	51.6	38.7	4.3	2.2	3.2	1.67	0.913	Very Effective
4	Effective usage of	39.8	41.9	12.9	2.2	3.2	1.87	0.947	Effective

S/N	Statements	Response Percentage (N=93)					Mean	Standard Deviation	Remark
		VE	E	U	I	VI			
5	ICT device Printer Effective usage of ICT device Digital Camera	28.0	43.0	12.9	11.8	4.3	2.22	1.112	Effective
6	Effective usage of ICT device Scanner	31.2	40.9	16.1	6.5	5.4	2.14	1.099	Effective
7	Effective usage of ICT device Projector	36.6	38.7	10.8	8.6	5.4	2.08	1.144	Effective
	Grand Mean						**1.94**		

Table 3 shows the Mean and Standard Deviation of students' responses on their effective usage of ICT devices. The table reveals the computed mean score of 1.85 with a Standard Deviation of 1.010 for item one, a mean score of 1.73 with a Standard Deviation of 0.980 for item two, a mean score of 1.67 with a Standard Deviation of 0.913 for item three, mean score of 1.87 with standard Deviation of 0.947 for item four, mean score of 2.22 with standard Deviation of 1.112 for item five, mean score of 2.14 with standard Deviation of 1.099 for item six and mean score of 2.08 with standard Deviation of 1.144 for item seven. The table reveals further that, the grand mean score of responses to the seven (7) items was 1.94 which was more than the decision mean score of 1.80. This implies that the majority of the participants were effective in the usage of ICT devices. The level of the utilization of ICT devices is show in Table 4.

Table 4. Level of the Utilization of ICT Devices

S/N	Statements	Response Percentage (N=93)					Mean	Standard Deviation	Remark
		N	R	U	O	A			
1	Often usage of ICT devices to send and read emails	34.4	19.4	4.3	5.4	36.6	1.85	1.010	Always
2	Often usage of ICT devices for social media	25.8	23.7	8.6	7.5	34.4	1.73	0.980	Always
3	Often usage of ICT devices for watching the news and reading blogs	29.0	19.4	9.7	10.8	31.2	1.67	0.913	Always
4	Often usage of ICT devices for daily life information and shopping	26.9	23.7	6.5	15.1	28.0	1.87	0.947	Always
5	Often usage of ICT devices for playing games	20.4	16.1	16.1	30.1	17.2	2.22	1.112	Undecided
6	Often usage of ICT devices to watch YouTube videos	18.3	15.1	17.2	28.0	21.5	2.14	1.099	Undecided
7	Often usage of ICT devices for downloading apps	19.4	17.2	11.8	28.0	23.7	2.08	1.144	Often
	Grand Mean						**1.94**		

Table 4 shows the Mean and Standard Deviation of students' responses to their effective usage of ICT devices. The table reveals the computed mean score of 1.85 with Standard Deviation of 1.010 for item one, mean score of 1.73 with Standard Deviation of 0.980 for item two, mean score of 1.67 with Standard Deviation of 0.913 for item three, mean score of 1.87 with standard Deviation of 0.947 for item four, mean score of 2.22 with standard Deviation of 1.112 for item five, mean score of 2.14 with standard Deviation of 1.099 for item six and mean score of 2.08 with standard Deviation of 1.144 for item seven. The table reveals further that, the grand mean score of responses to the seven (7) items was 1.94 which was more than the decision mean score of 1.80. This implies that the level of the majority of participants were always utilizing ICT devices. Challenges in the utilization of ICT for effective learning is show in Table 5.

Table 5. Challenges in the Utilization of ICT for Effective Learning

S/N	Statements	Response Percentage (N=93)					Mean	Standard Deviation	Remark
		N	R	U	O	A			
1	Lack of electricity supply	16.1	24.7	33.3	17.2	8.6	2.77	1.171	Undecided
2	Inadequate internet services	5.4	34.4	43.0	10.8	6.5	2.78	0.942	Undecided
3	Inadequate data	11.8	40.9	30.1	11.8	5.4	2.58	1.025	Rear
4	Lack of limited time	7.5	37.6	33.3	14.0	7.5	2.76	1.036	Rear
	Grand mean						**2.72**		

Table 5 shows the Mean and Standard Deviation of challenges in the utilization of ICT for effective learning. The table reveals the computed mean score of 2.77 with a Standard Deviation of 1.171 for item one, a mean score of 2.78 with a Standard Deviation of 0.942 for item two, a mean score of 2.58 with a Standard Deviation of 1.025 for item three and the mean score of 2.76 with standard Deviation of 1.036 for item four. The table reveals further that, the grand mean score of responses to the four (4) items was 2.72 which was more than the decision mean score of 1.80. This implies that the majority of participants were not facing the aforementioned challenges in the utilization of ICT for effective learning.

Discussion

The first research question of the study was based on students' perception of the accessibility of ICT at Al-Hikmah University. The findings of the study revealed further that, the grand mean score of responses to the six (6) items was 3.85 which was more than the decision mean score of 3.00. This implies that the majority of participants agreed to have ICT accessibility at Al-Hikmah University. This is in line with the work of study who found that students have a better chance of accessing high-quality education that is ICT-compatible (Qodr et al., 2021). Also, other study concluded that using technology tends to extend learners' horizons and have an effect on the characteristics of both the learning process and the subject under study (Griffiths, 2002; Hashim, 2018).

The second research question of the study was based on students' perception of ICT usage at Al-Hikmah University. The table reveals further that, the grand mean score of responses to the eleven (11) items was 4.02 which was more than the decision mean score of 3.00. This implies that the majority of participants agreed to the usage of ICT for learning. The third research question of the study was based on students' perception of ICT devices and the level of utilization at Al-Hikmah University. The table reveals further that, the grand mean score of responses to the seven (7) items was 1.94 which was more than the decision mean score of 1.80. This implies that the majority of the participants were effective in the usage of ICT devices. The fourth research question of the study was based on students' perception challenges of ICT at Al-Hikmah University. The table reveals further that, the grand mean score of responses to the four (4) items was 2.72 which was more than the decision mean score of 1.80. This implies that the majority of participants were not facing the aforementioned challenges in the utilization of ICT for effective learning (Nee et al., 2019; Oliveira et al., 2021; Suraweera et al., 2018).

In line with study that examine the patterns of ICT use among business students, the researcher's key results are as follows; 35% of students use the internet daily, 32% use it twice or three times per week, 10.9% use it three or more times per month, 4.4% use it once per month, 10.2% use it sometimes, and 7.5% use it very infrequently. In addition, the study found that 56.2% of students use ICTs for instructional purposes (Osadebe & Osadebe, 2020). Similarly, other study noted that many students utilize ICT tools (such as the internet and others) for academic purposes (such as to access their textbooks, reference materials, and read daily newspapers) and that most students use smartphones to access the internet (Asad et al., 2020; Islam et al., 2022). According to a recent study on the effects of ICT on medical students' academic performance in India, the majority of students had smartphones and utilized ICT for up to three hours every day (Chatterjee & Chakraborty, 2021). The results of this study also showed that 77.33 per cent of students use ICT tools for both educational and non-educational purposes, with 13.33 per cent of students using ICT tools for educational purposes (such as their phones and laptops) (Normadhi et al., 2019; Papadakis et al., 2020).

In light of the aforementioned findings, we may therefore conclude that students globally are becoming more and more accustomed to using ICT for both personal and educational objectives, depending on their viewpoints. According to one definition of perception, it is the process of interpreting or identifying the things that are perceived as a person's response to stimuli after using their senses to respond to them (Normadhi et al., 2019). However, it might be challenging to pinpoint the precise relationship between perception and learning performance. Everyone agrees that they are related to one

another indirectly, especially given their favourable effects on educational practices (Sarmiento-Márquez et al., 2023; Simanjuntak, 2019). Most people concur that information can be accessed through ICT in quicker, more effective, and more efficient ways. The variety of ICT devices and the abundance of resources provide students with more opportunities to learn about the globe. Therefore, if the learning process is effectively guided by individuals skilled in using ICT, it may very well be optimized.

According to previous study found the effects of ICT usage patterns on the learning process among students at the American University's Department of Computer and Instructional Teaching Technologies and discovered that ICT-based education motivates students, this motivation ultimately improves their academic performance (Anggraini et al., 2020; Qodr et al., 2021). These findings are supported by previous study illustration of how students can execute various academic-related tasks using ICT tools and strategies (such as the internet) (e.g., conducting research, doing multiple homework, broadening the scope of learning, and uplifting peer learning, and examination preparation) (Damyanov & Tsankov, 2018). According to a recent study students' internet usage habits have an impact on their academic achievement (Lampropoulos et al., 2019; Taufan, 2022). Other academics empirically evaluated the link between student academic achievement and ICT usage patterns (such as internet use). For instance, the study conducted discovered that students' academic performance is inversely correlated with having ICT gadgets, such as a laptop and a smartphone (Maria Josephine Arokia Marie, 2021). Additionally, there is little negative association between the amount of time pupils spend using ICT tools and their academic performance. However, there is a strong positive association between gender and academic achievement. An earlier study on gender variations in internet usage patterns among Texas Tech University's introductory psychology students concluded that there were gender disparities in ICT usage patterns.

4. CONCLUSION

This study has revealed that ICT utilization among postgraduate students is essential for their research work. However, many students are not perfect in the usage of ICT devices despite their availability in the school and their environment. Therefore, students should be encouraged to use ICT devices in their research activities. The usage of ICT would help the students to be more effective and efficient in their research activities.

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