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AN EVALUATION OF INFORMATION AND COMMUNICATION TECHNOLOGY LITERACY SKILLS AMONG UNDERGRADUATES IN SELECTED NIGERIAN POLYTECHNICS

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ABSTRACT

This study investigated an evaluation of Information and Communication Technology (ICT) on literacy skills among undergraduates in selected Nigerian Polytechnics. The study adopted the survey design method, and a population of 200 undergraduates formed the population of the study. The study adopted the total enumeration sampling technique, and a self-designed questionnaire was used as the instrument for data collection. Data generated was analyzed using frequency count distribution, percentages and Relative Important Index (RII). The result of the study showed that internet is the major type of ICT available and used by undergraduates in the selected polytechnics. The major skill required for ICT use is internet literacy skill. Online Courses is the foremost source to acquire ICT utilization skills by the undergraduates, and the major challenges associated with the use of ICT skills is Inadequate supply of electricity, insufficient funding, frequent breakdown of systems, low internet connectivity amongst others. Thus, the study recommended that management of the understudied federal polytechnics should provide regular/alternative supply of power, management should provide necessary support and assistance to the use and practice of ICT facilities within the library. In addition, management should make concerted effort in providing sufficient funding for the purchase and use of ICT facilities by the undergraduates among others.

Keywords: Information and Communication Technology, Literacy, Skills, Undergraduates, Selected Polytechnics.

Introduction

The advent of Information and Communication Technology (ICT) has brought a dramatic change to all spheres of human endeavor. This is owing to the fact that Information and Communication Technologies (ICTs) have landed the world into a new era known as the era of globalization, information society, knowledge economy, and network society. This new technology has accelerated research development which leads to an information explosion that makes an impact in administrative and management activities in higher education. Information and Communication Technology (ICT) can be defined as the Application of computers and other technologies for easy acquisition, organisation, storage, accessibility, retrieval, and dissemination of information. ICT is one of the greatest inventions of mankind which played an unprecedented role in changing the landscape of human and organisational activities around the globe. ICT is also a revolution that provides the platform and technical means of handling information and communication for the benefit of mankind. The impact has been vital in all activities of humans such as banking, health, transportation, education, and libraries. Obotu, Chukwuka, and Gambo (2019) regard ICT as the acquisition, analysis, manipulation, storage, and distribution of information; and the design and provision of equipment and software for these purposes. No doubt, ICT is a catalyst for generating, processing, storing, and disseminating information (Kwofie, Aigbavboa & Thwala, 2020).

Miller et al (2006) submitted that ICTs can be used in schools for administration, planning, lesson delivery, and student assignment in the area of teaching and learning. While various researchers (Louw et al., 2009) have investigated the factors that augment the incorporation of ICTs into the teaching and learning process as well as the constraints to the successful integration, quite a few researches are readily available and accessible on student's perceptions of ICT use and their impact on learning. According to Merriam-Webster Online Dictionary, Polytechnics are institutions of higher learning devoted to instruction in many technical arts and applied sciences. The vision of polytechnic education is to train and develop manpower in quantity and quality to meet societal needs and to contribute to national development.

Its principles and philosophies are such that every of its graduate would live and contribute effectively to the socio-economic development of the individual state. In order to ensure that polytechnic education remains relevant and valuable to the educational system, its programs must continue to be enriched to prepare undergraduates for the workforce and society. It is pertinent that it enriches itself by becoming ICT oriented by integrating Information and Communication Technologies into its programs and curricular in order to boost its teaching, learning and research power. Undergraduate students are students in tertiary institutions seeking after their first-degree programs in different fields Osinade, Philips, and Ojo (as cited in Adeoye & Adeoye, 2017). These students according to Jamogha, Jamogha, and Godwin (2020) constitute a greater percentage of students in any institution of higher learning. For undergraduate students to learn effectively and efficiently, they must be provided with various information resources through their libraries to supplement their classroom learning. Today, these students can only have access to the provided information resources through the use of ICT facilities. Hence, for the undergraduate students to access these information resources to satisfy their varying and changing information needs, they must possess some requisite ICT skills to do so. This is why Madu, Vandi, and Chagwa (2018) posited that it is obvious

that the use of available ICT facilities/tools is preceded by user's skills which empowers them to exploit ICT and fulfill their data needs.

Nowadays, for undergraduate students to get information to support their learning and research activities, they should have the requisite ability which is alluded to as an ICT literacy skill. ICT literacy proficiencies have been variously defined by many scholars. Anyim (2018), defined ICT literacy skill as the ability to use digital technology, communication tools, and/or networks to define, access, manage, integrate, evaluate, create, and communicate information ethically and legally to function in a knowledge society. Quadri (as cited in Ukaegbu & Wegwu, 2019), described ICT skills as the abilities for the collection, effectively processing, store, transmit, and dissemination of information that enables the utilization of computers and related advances to meet individual, scholarly, and work market objectives. The adoption of ICT in higher institutions was necessitated by the continual review of the curriculum which invariably requires access to a variety of information sources and types by students and teachers (Adetimirin, 2012).

Undergraduates are students in tertiary institutions pursuing their first-degree program in various disciplines (Osunade, Philips and Ojo 2007). Due to their heavy workload, undergraduates usually search for information from various sources to support their learning activities. Depending on the mode of study, an average undergraduate is expected to spend a minimum of two years for National Diploma and another two years for Higher National Diploma in the polytechnic. The academic performance of an undergraduate in this century depends on his/her digital literacy skills to identify credible information on the internet. Students search for information for various reasons, among which are to complement what has been taught in their various courses and lecture notes, complete their assignments and term papers, undertake projects and write up such reports, read and pass examinations etc. Adrian (2022). stated that "the purpose of general education is to provide a common experience in order to ensure that students acquire skills, knowledge, and the ability to think critically and to perceive interdisciplinary relationships". Oliver (2002) also reported that one of the goals of educational institutions is to ensure that graduates are information literate and can identify, locate and evaluate relevant information to satisfy their information needs. This implies that graduates demonstrate not only skills and knowledge in their subject domains but also general attributes and generic skills.

A study conducted in Australia by Deng, (2010) found that there were various purposes for a user to use e-resources including: gathering information on a specific topic, gaining general information, obtaining answers to specific questions, completing assignments, reviewing literature, writing essays and helping decision making. It also found that respondents use e-resources for each of the above purposes. Such an observation reflects the fact that currently users are dependent on the availability of e-resources for meeting many of their academic needs (Dolo Nadlwana, 2013). Therefore, Computers and related electronic database resources have come to play a central role in education (Lang, 2008). For undergraduates to enjoy the benefit provided by electronic database resources, undergraduates need a composite skill which is referred to as digital literacy skills. This skill will help them to acquire information literacy skill, media literacy skill, and ICT literacy. All these skills will enable them to connecting to library database resources. Digital literacy skill is vital to enhance their confidence in use of

electronic databases in the library.

Therefore, digital literacy skill is necessary for retrieval of relevant and up-to-date information for student's work. Kari (2004) explained that skills required to use electronic database resources are higher than the one required for searching printed sources and that students need to master certain skills to exploit and use the growing range of e-resources (Margaret-Mary Ekenna & Mabawonku Iyabo, 2013). ICT has the capability to enhance teaching and learning through improved interaction across cultures, between students, academics and between both, but some factors in developing countries could impact otherwise (Mlitwa 2004). ICT use by undergraduates therefore becomes inevitable for academic excellence in their various disciplines. They use ICT to complement print resources available in their various libraries to retrieve relevant information for their achievement of academic goals. Students' use of technology in education is expected to improve educational outcomes, increase skills in the use of technology and decrease inequalities between groups (Corbett & Williams 2002) as employers expect graduates who will be prospective employees to possess some ICT skills. Therefore, to remain relevant in the current information age, university lecturers and students have to adopt ICT to enhance their teaching, learning and research activities.

Justification of Study

Owing to Information and Communication Technology, the world today is being referred to as a global village. ICTs have permeated into all areas of human endeavors in politics, socials, commerce, sports, religion, education, etc. For undergraduate students to search and retrieve data to support their classroom learning, they must acquire the necessary ICT skills to do so. Unless they possess these requisite ICT skills while at school, they will not be able to compete effectively with their counterparts in the global market force after graduation. The acquisition of necessary skills for use of ICT facilities is even more critical because the effective use of ICTs helps in producing high-level manpower in all fields of human endeavor. It was observed that undergraduate students in polytechnics are underutilizing the available ICT facilities in their institutions to aid their learning and research activities. This might be attributed to the absence of possession of essential skills for ICT usage. It appears that there is a paucity of documented empirical evidence on ICT skills usage amongst undergraduate students in Nigerian polytechnics. Therefore, empirical studies on ICT utilization skills amongst undergraduate students in Nigerian polytechnics need to be carried out from time to time. Such studies will provide useful empirical knowledge on skills needed for ICT use by students in polytechnics.

Research Questions

1. What are the types of ICT available and used by undergraduates in the selected polytechnics in South-West Nigeria?
2. What are the skills required for ICT use by undergraduates of the selected polytechnics in South-West Nigeria?

3. What are the sources of acquisition of ICT utilization skills by undergraduates in the selected polytechnics in South-West Nigeria?
4. What are the challenges associated with the use of ICT skills by undergraduates in the selected polytechnics in South-West Nigeria?

Review of Related Literature

Information and Communication Technology (ICT) is referred to by Hashmi, Dahar, and Sharif (2019), as an ordering of special equipment used to share ideas and information among everyone. It may be used to store, process, and organize information. This all-encompassing definition of ICT includes a variety of technology like recordings, DVDs, phones, satellites, radios, TV, PCs, gear and programming framework, advancement, hardware, specific managements, and practical services. It is important to say that these technologies mentioned above only emphasize a new mechanism for handling an already existing information resource which is: information. Presently, the quick presentation and significance of information and communication technology (ICT) have caught the consideration of individuals from all works of life, most especially in many aspects of our daily lives—at home, in school, and at work. In other words, ICTs utilization is practically unavoidable in our everyday lives. Its effect is felt much in every part of society by its common expanding request in the school environment. This is the reason it has become clear that the utilization of the ICT framework in all areas of life is currently known and generally adequate (Madu, Vandi & Chagwa, 2018).

The use of ICT has increased and broadened the impact and skills of polytechnic students on how to seek information electronically. The ICT skills that have become increasingly important in the pursuance of a degree-level education will affect both how students manipulate these e-learning resources and the way they are used for learning. ICT skills deal with the application of ICT to specific purposes. It is not just about using software package or using operating systems, neither is it concerned with keyboarding skills and student ability to copy type or follow instructions. Rather, ICT skills among undergraduates is about student ability to use their knowledge about ICT to find, develop and present information; whether it is text, image, or number, or all of these integrated tasks.

Literacy Skills Required for ICT Use by Undergraduates

Computer education has been perceived to be accessible for undergraduates as it not just guides the learning interaction, it gives undergraduates mentalities that will be needed in their future work life (Tewri, Mtose & Ilesanmi, 2018). Reitz (cited in Ogbuiyi, 2015) defined computer education as the skills necessary to effectively recover data and impart using computer hardware and programming, in light of applied understanding of computer innovation and how it tends to be utilized to achieve specific undertakings, including a consciousness of its inherent limitations as well as its benefits. Several studies have been conducted on the computer literacy of undergraduate students. According to Odede (2018), the majority of participants 197 (98.5%) could use an internet browser, while 194 (97%) and 190 (95%) could use word processing and email, respectively. According to research by Brar, Brar, and Kaur (2017), among undergraduates of diverse courses, 76% have proficiency in Microsoft Office, 68% have proficiency in email, and 39.2% have proficiency in Multimedia Application, in addition to 80.4% of LIS

undergraduates having these skills. In Siddiquah and Salim (2017) study, most of the undergraduates had a few abilities, for example, information on Microsoft word, Microsoft Word, Microsoft PowerPoint, search and browsing on the Internet, social networking, email, uploading files, and video games. Ogbuiyi (2015) study showed that 240 (84.2%) of the respondents are capable in the utilization of Microsoft Word.

The skill that one has or needs to use the Internet is known as “Internet Literacy Skill”. Obasuyi and Otabor (2012), depicted the Internet proficiency ability of university undergraduates as an overall proportion of their ability to utilize the Internet for instructive and learning purposes. Lou, Shih, Liu, Guo, and Tseng (2010) posited that Internet education is a piece of data proficiency including essential computer proficiency. The authors further posited that Internet proficiency isn’t just about site examination. It incorporates the abilities it takes to peruse, disperse and assess online sources to mingle, arrange, and work together with individuals. Odede and Enakerakpo (2014) revealed that college freshmen can effectively use the Internet and have enough ICT skills.

According to Baro and Keboh (2012), the rapid advancement in Information and Communication Technologies (ICTs) has prompted the rise of data proficiency abilities throughout the planet as fundamental expertise for the 21st century. As a result, many authors have described the term “information literacy” in so many ways. Krubu, Idhalama, and Omigie (2017), described data proficiency as the capacity to perceive a data need, proficiently access data assets, and assess data in a closing attempt to the information gap. In their study, Nwankwo, Obiadazie, and Ofordile (2019) discovered that undergraduate library users at the two universities that were sampled possess data education skills. This is so they know when data is needed, where to find it, how to evaluate it, and how to apply it. Researchers Kunakornsakul and Pinit (2012) found that University of Technology undergraduates had a low degree of data proficiency. The data education levels of Nigerian students are insufficient, according to studies (Adetimirin, 2012; Ukpebor and Emojorho, 2012; Krubu, 2015), even though a few undergraduates have attained a certain level of data proficiency, including technological skills.

Media proficiency has been characterized in different manners by numerous researchers. Buckingham (as referred to in Aduloju, 2019) alluded to media proficiency as a bunch of abilities that empowers people to work adequately in data recovery task in the innovation situated climate. Gallagher and Magid (2017), portrayed it as the capacity to ponder urgently around the data you use and make. The author further sets that it includes the capacity to recognize certainty from assessment and to see how media can be utilized to convince individuals. Aduloju (2019) thought that media proficiency targets expanding crowd information and comprehension of the mass correspondence measure and the broad communications enterprises; raising students’ familiarity with how they can cooperate to make media substance and significance; assisting them with turning out to be talented and proficient media customers. In other words, media proficiency is important as it arms the students with the required abilities for turning out to be educated and basic scholars in our current reality where innovation and media are omnipresent, assisting with vaccinating youngsters against the unnecessary influence and Bogus data (Gallagher and Magid, 2017)

Reviewed literatures have shown that undergraduate students pick up ICT usage abilities in a variety of methods and from different sources. According to Israel and Edesiri’s (2014) study, it was discovered that

undergraduate students 158 (66.4%) acquire skills for ICT Usage through the incorporation of ICT into their course of study in the university. In addition, Siddiquah and Salim (2017) reported that most undergraduates (53.6%) concentrated on a few courses identified with a computer in their degree program at the university. Isreal (2018), showed that the majority 189 (94.5%) of the participants acquired computer literacy skills through guidance from colleagues and friends. The least method of acquiring computer literacy was through courses offered by the university as indicated by 121 (60.5%) of the participants. Bhatti and Qureshi (2016) showed that the dominant part of the respondents learned computer literacy skills through guidance from colleagues and friends and also through trial and error. Bank, Jena, and Sethy's (2015) study showed that about 63 (52.5%) students access the internet from a cybercafe.

Anyim, (2018) mentioned lack of funding, failure of the curriculum to include ICT, poor attitudes toward acquiring ICT skills, unavailability of training opportunities, poor ICT facilities, high cost of ICT literacy training, and lack of interest in digital information as some of the challenges of acquiring ICT skills by students. Moreover, Ogbuiyi (2015) showed that frequent breakdown of the system, lack of information literacy, and sponsorship to computers/IT training program in the University Library are the major problems encountered in the use of the computer as indicated by 242 (84.9%) and 280 (98.2%) of the respondents. Challenges of ICT Skills among Polytechnic Students According to Quadri (2012), there are a number of challenges facing polytechnic students on the use of ICT in information utilization for academic and research activities particularly in libraries in Nigeria. Firstly, (Manda, 2006). Noted that inadequate technological infrastructure to support the integration of ICTs in the curricula is a major challenge. This refers to issues as poor or lack of national ICT policy, low internet connectivity, inadequate supply of electricity, inadequate number of PCs, etc. There is need for policies that deregulate satellite communication and other telecommunication links, regulate ISPs, regulate government and cross-border data flows, etc. ICT policies can assist in addressing strict tax regimes that continue to classify computers, communication devices, and other accessories as luxury goods, resulting in high import levies that make these things exceedingly expensive.

Internet access is now widely available, but the efficiency is poor as many libraries in African countries experience downtime, several times a week (Gunjal, et al, 2013). The telecommunication services are the root cause of these downtimes in terms of, either, low bandwidth, technical faults and other network configuration problems. As Jensen (as cited by Quadri 2016) puts it, there are also “many external systemic factors such as electricity, transport networks, import duties” etc. which impact internet service delivery on the African continent. In some institutions, access is limited, not only by the number of internet service points but also by the time that access is available or permitted, leave alone the difficulty of bandwidth. However, access to the internet and thus to the world's stocks of knowledge is no longer a luxury or privilege reserved for a select few because it is a must in academic circles. In Nwankwo, Obiadazie, and Ofordile (2019) study, the respondents scored a lack of understanding of the concept of information literacy (3.66) as the highest impediment to ICT skill acquisition.

The findings of Wogu, Chukwu, Ugwuoke, Ugwulor-Onyinyechi, and Nwankiti (2019) showed the deficiencies in media literacy among mass communication students to include poor funding and lack of appropriate

facilities for teaching and learning media techniques and skills, inadequate curriculum, incessant academic staff strike that limit both thematic scope and period for covering curriculum and poor quality of media technology skill of lecturers and teaching methods. Likewise, Anyim, (2018) mentioned lack of funding, failure of the curriculum to include ICT, poor attitudes toward acquiring ICT skills, unavailability of training opportunities, poor ICT facilities, high cost of ICT literacy training, and lack of interest in digital information as some of the challenges of acquiring ICT skills by students.

Siddiquah and Salim (2017) noticed that low processor speed of computers, weak or signal problems in using the Internet, a virus threat, poor working conditions of computers, load shedding, and lack of internet access are the problems faced by the majority of the students. Also, Lwoga, Sife, Busagala, and Chilimo (2016) attributed the challenges to the acquisition of ICT literacy skills to material and human factors. Therefore, polytechnics in Nigeria urgently need to upgrade their ICT policies and infrastructure. As a requirement for networking e-library services and resource sharing, ICT skills are crucial. Additionally, it allows for the development of electronic institutional repositories, the promotion of e-learning, and the use of e-Journals and e-Books. The operations in a library require ICT skills in order to achieve and utilize more efficient and effective excellent library and information services ICT infrastructure would involve hardware, software, and other telecommunication facilities.

Sufficient ICT skill is very essential for the successful accessibility and maximum utilization of ICT in libraries in obtaining the needed information. Possession of ICT skills to access and process vast amount of information coupled with the ability of students and information users to transmit this information from one location to another has tremendous impact on the sending, storing, retrieving, and disseminating of information in libraries. The value of electronic resources and services are much appreciated if the information users are equipped with the necessary literate skills to easily share, distribute, update, manipulate, and rapidly searched and use it to answer their information needs. Lastly, the usage of all e-resources is becoming high and well appreciated. The impact of ICT literacy skills of the students of polytechnic has promoted the usage of electronic resources in terms of e-journals, e-books, and to as well performs other academic and research activities. There is no doubt that ICT can be a major source of sharing knowledge and information and they have come to complement physical library resources. Their availability and adoption in teaching, study and learning especially in developed countries have increasingly improved students' information seeking and retrieval. There is thus a general belief that Federal polytechnic students will make effective use of these facilities to address their information needs but research has it that in spite of all these benefits derived from the usage of ICT facilities that some students do not make extensive and effective use of it. (Quadri 2016).

Methodology

The research adopted survey design method to evaluate information and communication technology literacy skills among undergraduates in selected Nigerian polytechnics. The research design was used because the researcher was interested in collecting original data for describing a population too large to observe directly. One thousand, nine hundred and sixty-seven (1,967) undergraduates of Mass Communication department from the selected federal

polytechnics were used as study population. The federal polytechnics are namely: Federal Polytechnic Ede, Osun State; Federal Polytechnic Ilaro, Ogun State; Yaba College of Technology, Lagos State; and Federal Polytechnic Ile-Oluji, Ondo State. Stratified random sampling technique was used to sample 197 respondents of the sampled population, and 188 were returned which accounted for 94% of the population. Questionnaire was used as the instrument to collect data and analyzed using SPSS for descriptive statistics of frequency count, percentages and Relative Important Index (RII).

Results and Findings of the Study

Table 1: Response Rate

Questionnaire	Frequency	Percentage
No. of Questionnaire Administered	197	100%
No. of Questionnaire Returned	188	95.4%
No. of Questionnaire not Returned	9	4.5%

A total of 197 questionnaire were distributed. In all, 188 (95.4%) were completed, returned and found useful for analysis making it a total of 95.4% of the response rate.

Table 2: Demographic Information of Respondent

Demographic Information	Frequency	Percentage
Name of Institution		
Fed. Poly. Ede	34	20.8
Fed. Poly. Ilaro	13	28.8
Yaba Technology	20	28.8
Fed. Poly. Ile-Oluji	27	15.6
Gender		
Male	62	32.2
Female	126	67.8
Age		
20-25	43	53.1
26-31	28	26.4
32-37	19	13.8
38 and above	4	6.7
Level		
ND	39	26.8
HND	149	73.2

Marital status

Single	152	85.0
Married	36	15.0

Table 2 provides the demographic details of the respondents. The result indicate that the respondents were sourced from four different federal polytechnics in south-west Nigeria namely: Fed. Poly. Ede (20.8%); Fed. Poly Ilaro (28.8%); Yaba Coll. of Tech. (28.8%); Fed. Poly. Ile-Oluji (15.6%). On gender, the table shows that 126 (67.8%) of the respondents are female while 62 (32.2%) are male. On the respondents age, more than half of the respondents 43 (53.1%) are within age group of 20-25 years and 28 (26.4%) aged 26-31 years respectively. The level of respondents revealed that majority of them are HND students with 149 (73.2%) while 39 (26.8%) are ND students. 152 (85.0%) of the respondents are single while 36 (15.0%) are married.

Table 3: Types of ICT Available and Used by Undergraduates in Selected Polytechnics

S/N	Items	SA	A	D	SD	Total	RII	Ranking
1.	Laptops	85	49	32	22	188	0.7619	3 rd
		340	147	64	22	573		
2.	Projectors	43	39	79	27	188	0.6303	5 th
		172	117	158	27	474		
3.	Desktops	65	56	37	30	188	0.7074	4 th
		260	168	74	30	532		
4.	Smartphones	90	50	28	20	188	0.7925	2 nd
		360	150	56	30	596		
5.	Television	59	62	43	24	188	0.7074	4 th
		236	186	86	24	532		
6.	Internet	99	57	23	9	188	0.8271	1 st
		396	171	46	9	622		

Table 3 shows the comparison and Relative Important Index (RII) for types of ICT available and used by undergraduates of selected Federal Polytechnics in South-west Nigeria. The result revealed that “Internet” has a very high relative important index of 0.8271 and thus ranked first, “Smartphones” also ranked high with a RII of 0.7925 hence ranked second. “Laptops” ranked third with a RII of 0.7619, while “Projectors” ranked least with RII of 0.6303. Consequently, the study revealed that respondents give preference to Smartphones.

Table 4: Skills Required for ICT Use by Undergraduates

S/N	Items	SA	A	D	SD	Total	RII	Ranking
1.	Computer literacy skills	68	77	31	12	188	0.7672	3 rd
		272	231	62	12	577		
2.	Internet literacy skills	87	62	29	10	188	0.8005	1 st
		348	186	58	10	602		
3.	Information literacy skills	69	65	30	24	188	0.7792	2 nd
		276	195	90	24	586		
4.	Media literacy skills	50	59	65	14	188	0.7061	6 th
		200	177	130	24	531		
5.	Electronic communication skills	47	56	62	23	188	0.6688	7 th
		188	168	124	23	503		
6.	Online communication and collaboration skills	76	50	43	19	188	0.7433	4 th
		304	150	86	19	559		
7.	Word processing skills	69	59	39	11	188	0.72074	5 th
		276	177	78	11	542		

Analysis in Table 4 shows the comparison and relative important index of skills required for ICT use by undergraduates of the selected federal polytechnics. The result revealed that “Internet Literacy Skills” with a RII of 0.8005 ranked first, followed by “Information Literacy Skills” with a RII of 0.7792 while the least skill required for ICT use is “Electronic Communication Skills” with a RII of 0.6688. Thus, the predominant skill required for ICT use by undergraduates of the selected federal polytechnics in South-West is Internet Literacy Skill.

Table 5: Sources of Acquiring ICT Utilization Skills

S/N	Items	SA	A	D	SD	Total	RII	Ranking
1.	Online courses	76	62	31	19	188	0.7606	1 st
		304	186	63	19	572		
2.	Courses offered in school	49	35	53	51	188	0.6090	5 th
		196	105	106	51	458		
3.	Through colleagues	54	73	29	32	188	0.6981	2 nd
		216	219	58	32	525		
4.	Through friends and family	68	59	38	23	188	0.6489	4 th
		272	117	76	23	488		
5.	Courses outside the school	34	46	69	39	188	0.4308	7 th
		136	138	138	39	324		
6.	Business centers and	29	32	67	60	188	0.5398	6 th

	cybercafe	116	96	134	60	406		
7.	Practical self-teaching	54	66	38	30	188	0.6914	3 rd
		216	198	76	30	520		

Analysis in Table 5 presents the comparison and relative important index of sources of acquiring ICT utilization skills. The result revealed that “Online Courses” with a RII of 0.7606 ranked first, followed by “Through Colleagues” with a RII of 0.6981 thus ranked second, the third ranked source of acquiring ICT utilization skill is “Practical Self-Teaching, while the least is “Courses Outside the School” with a RII of 0.4308. Therefore, the major source of acquiring ICT utilization skill is through Online Courses.

Table 6: Challenges Associated with the Use of ICT Skills by Undergraduates

S/N	Items	SA	A	D	SD	Total	RII	Ranking
1.	Insufficient funding	75	61	33	19	188	0.7553	2 nd
		300	183	66	19	568		
2.	Lack of appropriate facilities for teaching and learning ICT skills	69	57	39	23	188	0.7287	5 th
		276	171	78	23	548		
3.	Poor attitude towards acquiring ICT skills	34	48	59	47	188	0.5917	11 th
		136	144	118	47	445		
4.	Failure to include ICT in curriculum	53	35	67	33	188	0.6436	8 th
		212	105	134	33	484		
5.	Limited duration for the use of available ICT	48	64	52	24	188	0.6808	6 th
		192	192	104	24	512		
6.	Inadequate ICT training	43	68	39	38	188	0.6542	7 th
		172	204	78	38	492		
7.	Lack of information policy	41	54	55	38	188	0.6303	9 th
		164	162	110	38	474		
8.	Frequent breakdown of system	66	61	49	12	188	0.7406	3 rd
		264	183	98	12	557		
9.	Inadequate supply of electricity	82	55	33	18	188	0.7672	1 st
		328	165	66	18	577		
10.	Lack of national ICT policy	43	39	56	50	188	0.5997	10 th
		172	117	112	50	451		

Analysis in Table 6 shows the comparison and relative important index of challenges associated with the use of ICT skills by undergraduates in the selected federal polytechnics in South-West Nigeria. The result revealed that “Inadequate Supply of Electricity” has a high relative important index of 0.7672 thus ranked first. “Insufficient

Funding” ranked second with a RII of 0.7553, followed by “Frequent Breakdown of System” which ranked third with a RII of 0.7406, while the least challenge associated with the use of ICT skills by undergraduates is “Poor Attitude Towards Acquiring ICT Skills” with a RII of 0.5917. Thus, the most common challenge that can be attributed to the use of ICT skills by undergraduates of selected federal polytechnics in South-West Nigeria is Inadequate Supply of Electricity.

Discussion of Findings

The findings revealed that majority of the respondents that “Internet” has a very high relative important index of 0.8271 and thus ranked first, “Smartphones” also ranked high with a RII of 0.7925 hence ranked second. “Laptops” ranked third with a RII of 0.7619, while “Projectors” ranked least with RII of 0.6303. Consequently, the study revealed that respondents give preference to Smartphones. The result of finding corroborates the assertion of Ibegwam (2004) who carried out a study on use of the Internet by students of the College of Medicine, University of Lagos, Nigeria and found out all the 200 respondents used the Internet and majority used it for searching academic materials and visiting other university websites. More than half of the respondents had less than six months duration of access while only a minority had used the Internet for over two years. Use of the Internet by these medical students was however faced with some problems: few computers with Internet access, unstable connectivity to the Internet and insufficient training in the use of the Internet facilities. Moreover, Oblinger and Oblinger (2005) reported that college students who grew up with the Internet might be impressively technologically literate, more accepting of new technology than their parents and instructors. The level of ICT skills a student possess may affect use of ICT and some studies have been carried out to investigate the relationship skill has on ICT use.

On the skills required for ICT use by undergraduates, the study identified “Internet Literacy Skills” with a RII of 0.8005 ranked first, followed by “Information Literacy Skills” with a RII of 0.7792 while the least skill required for ICT use is “Electronic Communication Skills” with a RII of 0.6688. Thus, the predominant skill required for ICT use by undergraduates of the selected federal polytechnics in South-West is Internet Literacy Skill. Obasuyi and Otabor (2012), depicted the Internet proficiency ability of university undergraduates as an overall proportion of their ability to utilize the Internet for instructive and learning purposes. Lou, Shih, Liu, Guo, and Tseng (2010) posited that Internet education is a piece of data proficiency including essential computer proficiency. The authors further posited that Internet proficiency isn’t just about site examination. It incorporates the abilities it takes to peruse, disperse and assess online sources to mingle, arrange, and work together with individuals. Odede and Enakerakpo (2014) revealed that college freshmen can effectively use the Internet and have enough ICT skills.

The result of findings on sources of acquisition of ICT utilization revealed that “Online Courses” with a RII of 0.7606 ranked first, followed by “Through Colleagues” with a RII of 0.6981 thus ranked second, the third ranked source of acquiring ICT utilization skill is “Practical Self-Teaching, while the least is “Courses Outside the School” with a RII of 0.4308. Therefore, the major source of acquiring ICT utilization skill is through Online Courses. According to Israel and Edesiri’s (2014) study, it was discovered that undergraduate students 158 (66.4%) acquire

skills for ICT Usage through the incorporation of ICT into their course of study in the university. In addition, Siddiquah and Salim (2017) reported that most undergraduates (53.6%) concentrated on a few courses identified with a computer in their degree program at the university.

Result for challenges associated with the use of ICT skills by undergraduates revealed that “Inadequate Supply of Electricity” has a high relative important index of 0.7672 thus ranked first. “Insufficient Funding” ranked second with a RII of 0.7553, followed by “Frequent Breakdown of System” which ranked third with a RII of 0.7406, while the least challenge associated with the use of ICT skills by undergraduates is “Poor Attitude Towards Acquiring ICT Skills” with a RII of 0.5917. Thus, the most common challenge that can be attributed to the use of ICT skills by undergraduates of selected federal polytechnics in South-West Nigeria is Inadequate Supply of Electricity. Ogbuiyi (2015) showed that frequent breakdown of the system, lack of information literacy, and sponsorship to computers/IT training program in the University Library are the major problems encountered in the use of the computer as indicated by 242 (84.9%) and 280 (98.2%) of the respondents. Challenges of ICT Skills among Polytechnic Students According to Quadri (2012), there are a number of challenges facing polytechnic students on the use of ICT in information utilization for academic and research activates particularly in libraries in Nigeria. Firstly, (Manda, 2006). Noted that inadequate technological infrastructure to support the integration of ICTs in the curricula is a major challenge. This refers to issues as poor or lack of national ICT policy, low internet connectivity, inadequate supply of electricity, inadequate number of PCs, etc.

Conclusion

In this digital age, the use of ICT is of great important in education for the processing, accessing and communication of information by undergraduates in Nigerian polytechnics. Nigerian Polytechnics are providing ICT to complement the available print resources in the library to meet the information needs of its users. The polytechnic libraries due to their underfunding could not provide all the relevant information to meet the information needs of their undergraduates. The alternative adopted has been the introduction of ICT to provide the needed information to its users which are made up of students (undergraduates), staff and the community. The federal polytechnics were found to possess more ICT for the use of their undergraduates. The ICT available in the selected federal polytechnics were inadequate and this constituted a limitation to their effective use and literacy skills. The challenges faced by the undergraduates in their zeal to use the available ICT were inadequate supply of power, insufficient funding, frequent breakdown of the system, low internet connectivity among others.

Recommendations

Using the results of the finding as backdrops, the following recommendations were made:

1. Management of the researched federal polytechnics should provide adequate and/or alternative power supply.
2. Sufficient funding should be made available by the management of the selected federal polytechnics for the purchase and use of ICT facilities by undergraduates.

3. Management of federal polytechnic libraries should provide necessary support and assistance to the use and practice of ICT facilities within the library.
4. Polytechnic management should introduce courses for ICT competency especially to all first-year undergraduates and encourage lecturers to use ICT for teaching and learning. This will further enhance the use of ICT by the undergraduates and ultimately increase their ICT literacy.
5. Uninterrupted and regular supply of internet should be encouraged in the library.
6. The e-library Administrator should always ensure easy access and use to the electronic information resources.

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