



REPOSITIONING NIGERIAN
UNIVERSITIES FOR THE
**DIGITAL
REVOLUTION
OF
THE 21ST
CENTURY**
FESTSCHRIFT

IN HONOUR OF
PROFESSOR ISAAC ROTIMI AJAYI, FNIP

EDITED BY
PROFESSOR GABRIEL LANRE ADEOLA

Professor Isaac Rotimi Ajayi FNIP
Vice Chancellor, Crawford University (2015 - 2020)

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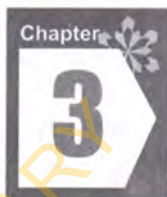
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ASSESSMENT OF PRE-SERVICE TEACHERS' SATISFACTION ON THE FREQUENCY AND MODE OF ICT USE IN TEACHER-TRAINING PROGRAMMES IN NIGERIAN UNIVERSITIES



by

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Abstract

In compliance with the realities of an Information and Communication Technology (ICT)-driven society and global indexes in terms of quality assurance in university education, the use of ICT has been integrated into the Nigerian university system. In Nigeria, university education has received the most attention in terms of funding, technical support and policy re-engineering. With the inevitable rise in ICT-based instruction globally, National Universities Commission (NUC) emphasized the use of ICT in Nigerian universities. Thus, ICT was integrated into teacher-training programmes in most Nigerian

universities with huge investments made in staff training, internet connectivity, interactive smart boards, multimedia projectors and other e-learning channels. In spite of these, the use of ICT resources by university lecturers has been inconsistent or non-existent largely due to lecturer-related variables such as age, gender and exposure. This has dire implications for pre-service teachers' satisfaction on the use of ICT in teacher-training. Therefore, this study examines pre-service teachers' satisfaction on the frequency and mode of ICT use in teacher-training in University of Ibadan. Seven research questions are raised and data were collected with ICT using online survey comprising 140 participants. The results show that pre-service teachers are not satisfied with frequency and mode of ICT use in teacher education. The study also found that younger lecturers make use of ICT-resources more than the older colleagues in Nigerian Universities. Regular training of lecturers on the use of ICT and improved power supply are recommended for optimal gains in the integration of ICT in teacher education.

Key words: Pre-service Teachers, ICT Satisfaction, ICT Utilization, Teacher Education.

Introduction

The use of information and communication technology (ICT) has significantly influenced several aspects of our lives as human beings and across different fields of human endeavours. It has facilitated major breakthroughs in medicine, information management, mass communication and education. The 21st century classroom is becoming increasingly dynamic with limitless possibilities such as virtual teaching/classroom, online and distance learning, e-learning, audio-visual virtual teaching and instruction, and so on. Similarly, the internet evolution and proliferation of smart phones or portable/mobile internet-friendly devices have made the use of ICT in education inevitable. Depending on availability of resources and the teacher's level of

knowledge of ICT, several topics that used to be branded as abstract or difficult can now be taught better using technology-driven platforms that offer unlimited opportunities to access, share and interact with other colleagues or resources all over the world.

The integration of ICT into education has bridged the gap in terms of time and space to make knowledge available to learners from all over the world. This is because with ICT, students can access up-to-date information anytime and anywhere. In spite of these positives, the use of ICT in education, especially in the training of teachers in the different faculties of education across universities in Nigeria has not been optimal. Factors such as lack of genuine software, economic instability, high cost of bandwidths, computer illiteracy, unavailability or inadequacy in the number of computers in the classroom, epileptic or lack of power supply, inadequate training and expert technical staff have been identified as some of the challenges confronting the integration of ICT in education, especially in developing countries (Habibu, Al-Mamun, & Clement, 2012; Olagbaju & Popoola, 2020).

The United Nations Educational, Scientific and Cultural Organisation (UNESCO, 2002) considers the use of ICT in education as complementary, enriching and transformative because it is capable of providing universal access to education, bridging learning divides, supporting the development of teachers and enhancing the quality and relevance of learning. Also, Linways Team (2017) submits that the use of ICT in education can improve the quality of teaching and learning experiences in schools. It is in view of this that Abolade (2019) reported that one of goals of the National University Commission (NUC) is to ensure sufficient deployment and good use of ICT in teaching, learning and research in Nigerian Universities through a robust ICT policy and practical guideline. Therefore, there has been massive investment in personnel training and the provision of ICT resources in Nigerian Universities through the Tertiary Education Trust Fund (TETFUND) and other initiatives.

Similarly, ICT has been integrated into instruction and teacher-training programmes in faculties of education in Nigerian universities. Education remains the mother of all professions and the quality of teacher-training is central to national development in this era of unprecedented technological advancement. Bhattacharjee and Deb (2016) posit that technology plays an important role in the training of pre-service and in-service teachers to cope with the realities of the 21st century classroom. Habibu, Al-Mamun, and Clement (2012) describe ICT as a versatile instrument in education because it is capable of actively engaging students in the process of instruction and improving learning outcomes.

According to Bhattacharjee and Deb (2016), ICT plays the following roles when integrated into the process of teacher education: it helps in the training of pre-service and in-service teachers, builds classroom interaction, helps in the preparation of teaching materials and provision of feedbacks, supports the use of ICT software and hardware for teaching-learning process, improves the quality of instruction through innovative teaching, aids active learning and develops effective classroom management skills. The human society is dynamic and the Nigerian society and classroom has evolved with increase in the use of the internet, technology and other social media channels such as Twitter, Yahoo mail, You Tube, Facebook, Google, WhatsApp and 2go for the purpose of instruction and dissemination of information.

Therefore, teachers without requisite ICT skills are likely to become irrelevant or unable to perform their duties maximally in the technological-driven world that we now live in. However, Bhattacharjee and Deb (2016) lament the technological gap that exists between the realities and knowhow in the society and what happens in instructional delivery in the classroom. The implication of this gap is that classroom instruction has remained predictable and monotonous because teachers either demonstrate general apathy or lack the technical skills to use technology or the

ICT in classroom.

From the foregoing, it is evident that advances in science and technology have made the use of ICT an indispensable variable in education in the 21st century. According to UNESCO, there has been a huge modification to people's lifestyle (learning inclusive) due to several innovations in computer technologies which has evolved into a new digital culture. The impact of these changes has become significant on knowledge generation and dissemination around the globe. Therefore, literacy has gone beyond the ability to read and write because the 21st century graduate is expected to be able to demonstrate an acceptable level of familiarity with the ICT and computer-related discourse in his or her career or field of endeavor.

ICT plays a significant role in instructional delivery by providing a platform that supports and concretizes learning experiences. It is to this end that the Faculty of Education, University of Ibadan in line with the National University Commission's (NUC) guideline has integrated ICT into teacher training programmes in all the Departments through the provision of internet bandwidth for staff and pre-service teachers and other technological devices such as interactive smartboards, projectors, laptops and computers. Lectures, seminar presentations, assignments, exchange of ideas and information as well as other lecturer-students contacts for the pre-service teachers can now be conducted with the aid of ICT and technology-supported channels.

In spite of these interventions and the paradigm shifts in the use of ICT in teacher-training procedures, there are several challenges in the implementation of the NUC agenda on the use of ICT in Nigerian Universities in terms of pre-service teachers' satisfaction with the frequency and mode of ICT use in teacher education. Satisfaction in learning has been described as the aggregate feelings or affective responses to distinguishable factors while interacting with the e-learning system (Goh, Kinshuk & Chen, 2008). Also, Topala and Tomozii (2013) describe learning

satisfaction as a part of the affective aspects of instructional processes because it is emotion-based and defined by the level of joy that individuals experience during the process of learning or when they realize that learning has occurred.

Similarly, Deci, Ryan and William (1996) aver that satisfaction in learning is an intrinsically-motivated spontaneous experience that occurs in the teaching and learning processes. Such experiences of satisfaction or otherwise are not limited or determined by the instructional channel or procedure because they are primarily based on the learners' self-evaluation and appraisal of the process. In relation to this study, pre-service teachers' satisfaction has serious implication for the success and sustainability of ICT in the classroom because unsatisfied student-teachers will likely not encourage the use of ICT in instruction when they become in-service teachers. Therefore, this study examined the satisfaction of the Faculty of Education undergraduates on the frequency and mode of ICT-friendly teacher-training programmes in University of Ibadan, Nigeria.

Research Questions

1. What are the common ICT tools used for instruction in the University?
2. What is the level of students' satisfaction in terms of lecturers' utilization of ICT in instructional delivery?
3. What are the problems associated with utilization of ICT for teaching and in Nigerian Universities?
4. Do lecturers in the Faculty of Education make use of ICT for teaching more their counterparts in the other Faculties within the University?
5. Do the older lecturers utilize ICT more than the younger lecturers in Nigerian Universities?
6. Do you make use of ICT for the purpose of your assignment?

Factors affecting the use of ICT in teacher-training in Nigerian

Universities.

The numerous benefits of making use of Information and Communications Technologies (ICTs) in teacher education has been discussed in this study. Also, the use of ICT has been found to build capacity and improve efficiency (Bhattacharjee & Deb, 2016). Although there are efforts by the Nigerian Educational Research and Development Council (NERDC), Tertiary Education Trust Fund (TETFUND), National Universities Commission (NUC) and other organizations to promote the use of ICT, develop a framework, and finance the integration of ICT into education in Nigeria, the implementation has not been hitch-free. This is because there are several factors within the Nigerian University system that can inhibit the success of interventions.

According to Voogt, Knezek, Cox, Knezek, and ten Brummelhuis (2013), there are technical, human, and organizational-related factors that can facilitate or impede access and effective use of ICT in education. In relation to organization, for example, there is little or no policies on the use of ICT in teacher-training programmes in Nigerian universities. While significant gains have been in the integration of ICT into the teacher education curriculum, the same cannot be said concerning the implementation phase. Information on Brief 4 (2019) suggests that there is need for a legal framework to provide a guide for schools on the minimum acceptable infrastructure for ICT, basic ICT literacy for teachers, including stable and affordable internet connectivity and security measures such as filters and site blockers. There is need for an approved benchmark for the use of ICT in teacher-training instruction in universities.

In addition, electricity or power supply has remained one of the most prominent problems confronting Nigerian Universities. The epileptic nature of power supply has hampered the use of ICT and technological devices in the institutions that have functional platforms. Although the use of alternatives such as power generating plants have been adopted in most universities, the cost of fueling and maintaining the plants has limited the use of ICT in

instructional preparation and delivery. Another factor close to poor power supply is the high cost of maintaining the ICT gadgets and devices. It is not uncommon to see moribund gadgets in the lecture theatres and Departments because the software is obsolete or the technology is outdated. The cost and frequency of buying software and upgrading the gadgets have made the use and maintenance of ICT in education relatively difficult.

Poor utilization of ICT devices is another problem in Nigerian universities. It is not uncommon that some lecturers avoid the use of technology or ICT in the classroom like a plague because they are either not ICT compliant or hindered by the irregularity of power supply. In institutions that have mounted interactive digital (smart) boards and installed the software, there is a general apathy and preference for the traditional marker/chalk boards that are in the classroom. This is because a good number of the lecturers do not have the knowledge or requisite skills to operate the board to deliver their lessons. Coupled with this problem is the vandalization of these ICT gadgets by the students and other people within the University community. Most of the interactive digital smartboards have been defaced by individuals that wrote on them using temporary or permanent markers as if they were the normal marker boards. Also, the sockets, cables and other portable devices are often either vandalized or stolen by miscreants within the University community.

Lack of technical knowhow by some university lecturers to operate the ICT-supported devices in lecture preparation and delivery is another factor. As unbelievable as it may sound, there are lecturers that are still not computer literate or cannot check their email. Therefore, they are unable to set up the ICT devices for classroom instruction or engage with students on ICT-enhanced platforms. Although there have been series of training to build the capacity of such lecturers but general phobia for technology and ICT-supported instruction still exists among certain cadres of lecturers in most Nigerian universities. In cases where there are ICT-support unit in the Faculty or Department,

they are usually understaffed or poorly funded to provide the necessary services that can aid the use of ICT in instruction.

Kopcha (2012) avers that there can be no successful implementation of ICT without its integration into the curriculum. Though ICT has been integrated into the teacher education curriculum of most Nigerian universities, the use of ICT is yet to be developed in certain subject areas, especially teaching methods for indigenous contents such as languages, cultures and sciences. Therefore, even when lecturers make efforts to use ICT in teacher-training programmes, such interventions encounter subject-related challenges in terms of content and resources.

Integration of ICT into Teacher Education in Nigerian Universities: Implications for effective teaching and capacity building

The use of ICT in teacher education in Nigerian universities is commendable because of the numerous benefits and could have serious implications on the quality of training and the capacity building of trained teachers. Kapur (2019) posits that ICT has been used in the teaching and learning process at all levels of education to disseminate knowledge and information to students. New subjects such as computer studies, computer education and Information and Communication Technology (ICT) have been introduced from basic to post-basic (secondary) levels of education in Nigeria. Difficult concepts have become simplified because of the use of ICT in education. Indeed, the internet makes educational resources more accessible to teachers and learners. Therefore, pre-service teachers need to be exposed to the use ICT during their training to be relevant in practice.

Similarly, ICT is increasingly becoming an integral aspect of instruction, learning and administration in higher institutions of learning. The mandate by the National Universities Commission (NUC) has prompted an increase in the use of ICT by lecturers in the preparation and delivery of lectures. This has aided the use of technology and the internet in teacher education in Nigerian universities for undergraduates and postgraduate programmes.

ICT has been integrated into both the administrative and academic aspects of teacher education in Nigerian universities, especially in the payment of fees and registration procedures, preparation and presentation of seminars, lectures, assignments, reports, open and distance learning (ODL), e-learning, projects supervision, examination administration and evaluation processes.

The use of ICT resources in teacher training is motivating and effective than the conventional means of preparation of teachers. Technology and the internet have been found to contribute to teaching effectiveness and learners' satisfaction in instructional procedures (Kapur, 2019). The internet has become a virtual classroom and universal library of resource materials for teachers and learners. The integration of ICT into teacher training programmes in Nigerian universities has promoted the quality of instruction and enhanced the learning environment. Pre-service teachers or teachers-in-training are now able to make use of computers, tablets, smartphones, laptops, and other educational Apps or multimedia resource sin the classroom. The use of technology in classroom instruction is inevitable because ICT has a significant influence on people's lifestyle in the 21st century.

Apart from improvement in achievement, attention span and students' participation when ICT is used in education, ICT in the classroom has been found to contribute to learners' satisfaction (Goh, Kinshuk, & Chen, 2008). Technology, when integrated into teacher education, can develop effectiveness, motivation and satisfaction in the training process. Kapur (2019) posits that when people are able to make use of technology for academic and leisure purposes, it is capable of motivating and stimulating active participation in the teaching-learning processes. Therefore, ICT enhances positive response from learners when engaging with the learning tasks which can improve the satisfaction of learning with the process.

Methodology

The study adopted a descriptive survey research design, in which the researchers did not need to manipulate any variable, to investigate undergraduate pre-service teachers' satisfaction on the use of ICT in teacher-training in terms of the content and procedures. The participants comprised undergraduate education students from the Departments of Adult Education, Arts and Social Sciences Education, Early Childhood and Educational Foundation, Educational Management, Guidance and Counselling Education, Health Education, Kinetic Education, Library, Archival and Information Science Education, Science and Technology Education, Social Work and Special Education at the Faculty of Education, University of Ibadan.

Sampling Techniques

140 (200-400 levels) pre-service teachers across all the Departments in the Faculty of Education of University of Ibadan were selected for the purpose of this study. Data gathering coincided with the industrial action of the Academic Staff Union of Universities (ASUU) as well as COVID-19 pandemic that prompted the closure of the University. Therefore, the researchers leveraged on the trial version of the online survey merchant (Survey Monkey) through the link:<https://www.surveymonkey.com/r/TJ2MFRJ?fbclid=IwAR1tEM1Hwoo2Ns2PHL40IfsdfKzqKikSjkhToaWLEsOmRi401y7wmLRpEqU>.

The data was gathered from participants using a non-proportionate sampling approach. It is a combination of snowballing such that the researchers forwarded the link to students' class representatives and their level adviser who in turn forwarded the same to the class WhatsApp groups. Although this networking did not take care of students without data or smart phone, the researcher ensured that the sample included 140 students from 200 to 400 levels across all the Departments in the Faculty of Education that responded to the online survey.

Instrument for Data Collection

Pre-service Teachers' Satisfaction of Lecturers' Utilization of Information Communication Technology Scale (PTSLUIS) was used for the collection of data. The instrument was administered online through the Survey Monkey website. Three items were used to collect demographic data such as gender, Department and academic levels. Four items were used to determine respondents' level of satisfaction of ICT utilization by lecturers as well as other rating/assessment of lecturers' utilization of ICT for teaching the cases, responses range from always, sometimes to never.

Three other items were designed to allow the respondents identify problems of lecturers ICT utilization and one of them is open ended. Although the trial version did not permit the researchers to assess the responses of the open ended item. The responses vary from true, false, no difference and always through sometimes. The last item sought to find out the students' utilization of ICT for assignment and home work.

Results and Discussions

Research Question 1: What are the common ICT tools used for instruction in the University?

Figure 1 shows that 30% of the students indicated that the teacher in the university use the interactive board as a projector screen but not as a real interactive board. None of the lecturers uses the touch screen board and interactive board the way it is expected. 45% of the students stated that the lecturer uses multimedia projector for instruction and 25% of the respondent use laptop for instruction without projecting but just as their note.

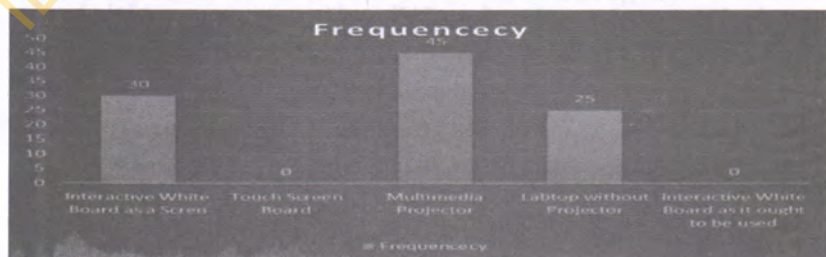


Figure 1: Bar Chart of ICT tools used for instructional Purposes in University as indicated by students.

Research Question 2: What is the level of students' satisfaction in terms of lecturers' utilization of ICT in instructional delivery?

From Figure 2, the responses indicated that 8% of the respondents are satisfied with the level of ICT utilization for teaching in the university. 35% rated their satisfaction as good, 42% rated it as fair, 7.07% poor and 7.07% very poor. Majority (55.3%) of the students rated their level of satisfaction among fair, poor and very poor.

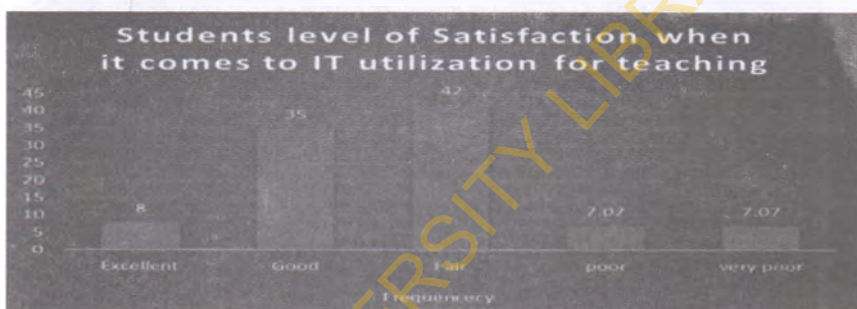


Figure 2: Bar Chart showing students' level of satisfaction on the use of ICT tools for instructional Purposes in the University.

Research Question 3: What are the problems associated with the utilization of ICT for teaching and in Nigerian Universities?

The students were equally asked if there are problems associated with the utilization for teaching. From Figure 3, 79.17% affirmed that there is a problem with the utilization of ICT teaching, 10.42% indicated that there is no problem, while 10.42% were not sure if there were problems.

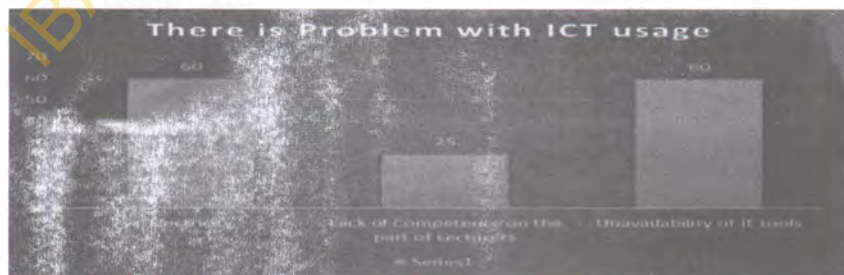


Figure 3: Bar Chart showing the problems associated with the use of ICT in the University as indicated by students.

In addition, the online survey allowed respondents to choose more than an option for this item. From Figure 4, the result shows that 60% of the respondent indicated that electricity and availability of tools are the main problems of utilization of ICT for teaching while 25% of the students opined the lack of competence on the part of the lecturers is responsible. Only 4% of the respondent stated that the readiness of student is a problem.

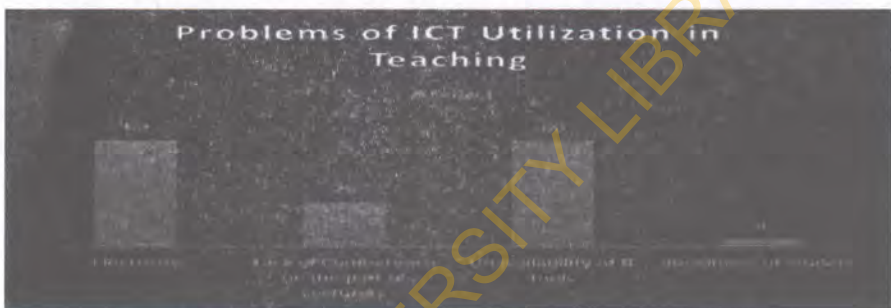


Figure 4: Bar Chart showing the problems associated with the use of ICT tools for instruction in the University as indicated by students. Research Question4: Do lecturers in the Faculty of Education make use of ICT for teaching more their counterparts in the other faculties within the University?

The 25% of the respondents equally agreed that that lecturers in the Faculty of Education utilize ICT more for teaching compared with those in other faculties in the University. On the other hand 42.7% of the respondents disagreed while those who were not sure are 30%. These are shown in Figure 5.

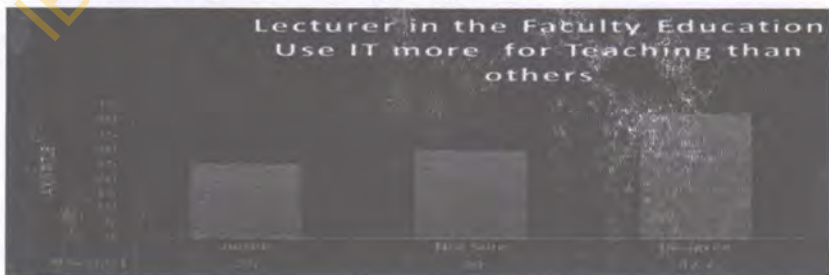
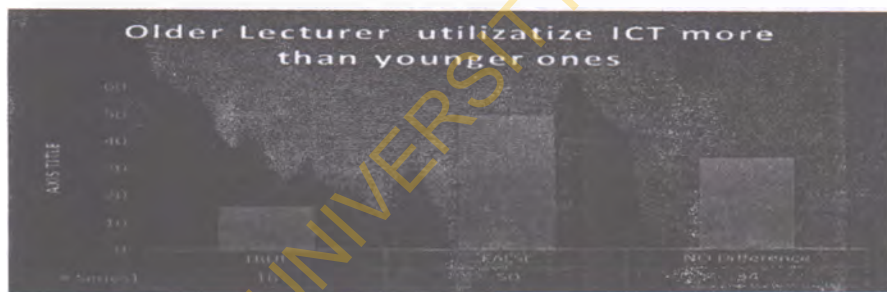


Figure 5: Bar Chart showing comparison in the level of ICT utilization between lecturers in the Faculty of Education and their colleagues in other faculties within the University as indicated by students.

Research Question5: Do the older lecturers utilize ICT more than the younger lecturers in Nigerian universities?

The respondents were asked if older lecturers utilize information technology more than the younger ones. The result in figure showed that 50% of the respondent disagreed and 34% of the respondent are of the opinion that there is no difference between the utilization of IT to teach among older and younger academics. 16% of the respondent agreed that older academics use ICT for teaching more than the younger ones. These are shown in Figure 6.



Research Question6: Do you make use of ICT for the purpose of your assignment?

Figure 7 reveals that 50% of the respondent to the survey always deployed information technology when doing their assignment while 50% deploy ICT occasionally.

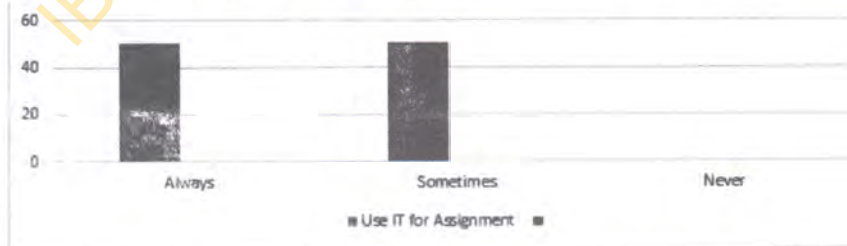


Figure 7: Bar Chart showing students' utilization of ICT tools for assignments.

Discussion of the Findings

The result indicates that most pre-service teachers utilized ICT tools such as multimedia projectors and interactive smartboards for teaching and learning. Although some students indicated that some lecturers use laptops for instructional purpose but that cannot be considered as ICT tools because it is the only the lecturers that interacts with the content. Also, the interactive smart boards are not used for the main purpose for which they were designed rather many respondent indicated that the boards were used as a screen for the projector. This could be traced to the fact that users might not have acquired requisite skills. This result supports the findings of Kopcha (2012) and Habibu, Al-Mamun and Clement (2012) that the use of ICT in school is still very poor because of several technical and human-related factors.

About 40% of the respondents considered their level of satisfaction ICT utilization as excellent or good while, the 60% of the respondents rated their level of satisfaction as fair or poor or very poor. This implies that many of the pre-service teachers are not satisfied with the way ICT is used for instructional delivery in the University. The result agrees with Goh, Kinshuk and Chen (2008) that the use of ICT and other e-learning channels in instructional delivery enhanced learners' satisfaction with the process. However, the result does not support the findings of Olagbaju and Popoola (2020) on the use of ICT-supported instruction and students' learning outcomes.

The response to the question of who makes use of ICT more for teaching between older and younger lecturers was also key. 50 % of the pre-service teachers disagreed that older lecturers use ICT more for teaching compared to the young lecturers. Although less than 20 % of the respondents agreed while another 20% indicated that there is no difference between ICT usage of older lecturer. Hence, the usage is poor. It is important to state that 88% of the

respondent are finalist hence their judgement can be trusted because they have seen it all. This result agrees with the findings of Voogt, Knezek, Cox, Knezek, and ten Brummelhuis (2013) that the conditions must be right for optimal effect in the use ICT-supported instruction.

Education students usually take courses in the cognate Departments where they are usually trained in the content area. The findings reveal that majority of students (43%) disagreed that education lecturers utilize ICT for teaching purposes more than academics in their cognate Departments. 30% of the pre-service teachers expressed uncertainty while 25% of the respondents agreed that the lecturers in the Faculty of Education utilize ICT more than those in their cognate Departments. This means the experience of majority of the respondents is that ICT utilization is not better. This supports the views of Bhattacharjee, and Deb (2016) and Lindsay (2017) on the role of ICT in education, especially in the 21st century.

Conclusion and Recommendations

The study investigated pre-service teachers' level of satisfaction on the content, procedure and use of ICT in teacher training programmes in Nigerian Universities using 140 undergraduates from 200 to 400 levels across all the Departments in the Faculty of Education, University of Ibadan. The study adopted ICT using the Survey Monkey link to collect the data for this study and the results showed that the participants' are not satisfied with the use of ICT in their training programme in terms of utilization and the procedure. Some of the problems identified in the use of ICT by the participants include poor power supply, underutilization of the interactive smart boards, and poor quality of internet connection among others. In view of these findings, it was recommended that power supply should be improved upon and lecturers in the Faculty of Education should be trained and retrained at regular intervals on the use of ICT tools for instructional delivery.

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