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Use of information and communication technology facilities on the improvement of quality of instruction in higher education in Rivers State

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Abstract
This study examined the impact of information and communication technology (ICT) facilities in the improvement of quality of Instruction in higher education in Rivers State. Specifically, four objectives were stated, four research questions raised and four hypotheses formulated and tested at 0.05 level of significance. The descriptive survey research design was adopted in this study. The population of the study consisted of 189 post graduate students out of which 91 were from Ignatius Ajuru University of Education (IAUE) and 80 from Rivers State University (RSU) of the Department of Educational Management of 2021/2022 academic session in Rivers State, Nigeria. The entire population was used as census study. The instrument used for data collection was researchers constructed questionnaire.The instrument was face and content validated by two experts in the Computer Science and Educational Management in Rivers State University. The reliability of the instrument was determined using Cronbach Alpha reliability statistics which yielded an average reliability coefficient index of 0.73 for the four clusters in the instrument. The instrument was administered, with the assistant of their Head of Department, to the participants in their various institutions. Descriptive statistics of mean and standard deviation were used to analyze the research questions, while the inferential statistic of z-test was used to test the formulated null hypotheses at 0.05 alpha level. The study found that there was no significant difference in the mean rating of the two groups of participants on the extent to which overhead projectors, teleconferencing, electronic notice boards and optical fibers enhanced the improvement of quality of instruction in higher education in Rivers State. Based on the findings, the study among others recommended that the various ICT facilities should be made available in tertiary institutions to enhance the improvement of quality of Instruction in higher education in Rivers State, Nigeria.

Keywords: Information and communication technology, facilities, quality of Instruction, higher education

Introduction

Education is a strategic investment in national development. It is the acquisition of knowledge, the aggregate of all the processes by which an individual develops the abilities, attitudes, and other forms of behaviour that are of positive value to the society in which he/she lives (Jameel & Ahmad, 2021) [11]. It is a process of transmitting culture in terms of continuity and growth or disseminating knowledge either to guarantee the rational direction of the society or both (Adu, Emunemu, & Oshati, 2014) [2]. The place of education in development cannot be overemphasized, because education gives development the impetus required to harness human capital and material resources. In this regard, education is congruous to national development. The transformative potentials of sustainable education increase national development. This strengthens the position that education is instrumental to the national development process. Nigeria has continued to demonstrate its commitment to the Sustainable Development Goals (SDGs) promise. There have been considerable efforts in Nigeria to play more prominent devotion to the improvement of education, particularly tertiary institutions, in the pursuit of Sustainable development goal number four SDG 4. One of the means of achieving this entails the adoption of ICT in Nigeria's tertiary education (Oluwole, & Loto, 2013) [16] The Internet of Things (IoT) is a priceless modern-day intervention. Its inherent characteristics, such as accuracy, high-speed performance, reliability, and the ability to store extremely large amounts of data, have enabled it to be applied to all human endeavours, including education.

Information and Communication Technologies (ICTs) are broadly defined as technologies used to convey, manipulate and store data by electronic means. These include e-mail, SMS, text messaging, video chat that carry out a wide range of communication and information functions (Mathevula & Uwizeyimana, 2014) [14]. ICT is an acronym for computers, software, networks, satellite links, and related systems that enable people to access, analyze, create, exchange, and use data, information, and knowledge in previously unimaginable ways. It refers to technologies that provide access to information through telecommunication. This includes the internet, wireless networks, cell phones, and other communication media. ICT has, in the last few decades, provided society with a vast array of communication capabilities and transformed society into a global village. It has effectively and efficiently managed information through a diverse set of technological tools and resources and is silentlycontributing to the overall growth and development of society. ICT has globally been recognized as a catalyst of change. It is an essential element in the development of every area of any nation, in this era of globalization.

It is serving as a change agent in the method and quality of teaching and learning in educational institutions all over the world in this 21st century. It has become, within a very short time, one of the basic building blocks of modern society. Information and communication technologies (ICT) have become key tools and have had a revolution impact on how we see the world and how we live. Today, modern day

businesses are conducted and facilitated through the use of telephones, fax machines and computer communication networks through the internet. This phenomenon has given birth to the contemporary education, e-government, e-medicine, e-commerce and e-banking among others. According to Bandele (2006), ICT is a revolution that involves the use of computers, internet and other telecommunication technology in every aspect of human endeavour. The field of education has certainly been affected by the penetrating influence of ICT worldwide and in particular, developed countries; ICT has made a very profound and remarkable impact on the quality and quantity of teaching, learning and research in the educational organizations. It has the potentials to accelerate, enrich deepen skill to motivate and engage students in learning to help relate school experiences to work practices; Wheeler in Wordu, Ugbari and Duba (2022) [20] discovered that the use of ICT improves efficiency, in the educational process and effects changes in teaching methodology, assessment of learning, student tracking, communication and evaluation.

According to Aribisala (2006) [6], ICT facilitiesare increasingly playing an important role in educational organizations and in society's ability to produce access, adopt and apply information. They are however being heralded as the tools for the post-industrial age and the foundations for a knowledge economy due to their ability to facilitate the transfer and acquisition of knowledge. Stressing the impact of the use of ICT facilities in the improvement of quality of education in Nigeria, Elujekwute (2019) [10] stated that through ICT, educational needs have been met; it changes the needs of education as well as the potential processes. Message can be communicated through the e-mail, telex or telephones particularly the mobile ones. The pervasiveness of ICT facilities has brought about rapid teleological, social, political and economic transformation, which has eventuated in a network society organized around ICT (Asogwu, 2008) [7]. Looking at the role of education in nation building, the impact of ICT facilities in the teaching and learning process becomes imperative. This is true because its adoption by the teachers will enhance effective teaching and learning. Such issues like good course organization, effective class management, content creation, self-assessment, self-study collaborative learning, task oriented activities, and effective communication between the actors of teaching and learning process and research activities will be enhanced by the use of ICT based facility. Teaching and learning have gone beyond the teacher standing in front of a group of students and disseminating information to them without the students' adequate participation (Ajayi, 2008) [4]. Ajayi further opined that with the aid of ICT facilities, teachers can take students beyond traditional limits, ensure their adequate participation in teaching and learning process and create vital environments to experiment and explore. This newdevelopment is a strong indication that the era of teachers without ICT skills are gone. Anyclassroom teacher with adequate and professional skills in ICT utilization will definitely have his students perform better in classroom learning.A cursory look at the students in Tertiary institutions in Rivers State has shown that many teachers in the system still rely much on the traditional "chalk and talk" method of teaching rather than embracing the use of ICT. Okebukola (2017) [15] established that computer is not part of classroom technology in over 90% of public schools in Nigeria, thus the chalkboard and textbooks continue to dominate classroom activities. This is an indication that the students are still lagging behind in the trend of changes in the world. This presupposes that there is the tendency for the teachers and students to be denied the opportunities which ICT facilities offers in the teaching and learning activities. There is need to replace the traditional pedagogical practices that still underpin the educational system in Nigeria, hence the need for the application of ICT in facilities. The various ICT facilities used in the teaching and learning process in schools include; radio, television, computers overhead projectors, optical fibers, fax machines, CD-Rom, Internet, electronic notice board, slides, digital multimedia, video VCD machine among others. It appears some of the facilities are not sufficiently provided for teaching and learning process in tertiary institutions in Rivers State. This perhaps account for why teachers are not making use of them in their teaching.

According to Ajayi (2008) [4], the use of these facilities, involves various method which include systematized feedback system computer-based operation/network, video conferencing and audio conferencing internet Worldwide, websites and computer assisted instruction. It must however be stressed that the effective use of the various method of the ICT facilities in teaching and learning depends on the availability of these facilities and teachers' competence in using them. Observation has shown that there are little functional internet facilities in most of the Universitiesin Rivers State. This appears to hinder the extent of teachers' exposure to the use of ICT facilities in teaching. Teachers as well as students appear not to be knowledgeable in the use of ICT because there appears not to be any official training for both the teachers and the students in the schools. It has also been observed that most secondary schools in Rivers Stateare affected with irregular power supply which appears to thrive in the schools. Moreover it seems the schools could not purchase computers for use because of inadequate funds. Besides, the non-inclusion of the ICT programmers' in teachers training curriculum seems to be another major challenge facing the adoption of ICT in secondary schools. Various studies have shown the multifaceted problems militating against the effective use of ICT in the teaching and learning process in schools these include: irregular power supply inadequate computer literate teachers, reluctance to change among others.

ICT involves the use of combination of technologies or facilities in generating information. These facilitiesamong others are; cable television, close circuit te1evision, teleconferencing, electronic notice boards, computer, electronic mail, internet, world wide web etc. However the study shall be limited to just four (4) of them (overhead projector, teleconferencing, electronic notice boards and optical fibers). Electronic Notice Boards involve the use of communication software to allow personal computers to act as public address systems. Electronic notice boards are created to link people who have the same interest for the purpose of information dissemination from time to time (Dave & Tearle, 2010) [9]. Teleconferencingrefers to a process whereby people conduct real-time discussion on the Internet. Here, each participant will type his or her contribution to any discussion topic in the internet and also read other people's contributions to the discussion. This is made possible with the internet relay chat; each participant in the discussion group can enter and leave the discussion when he or she likes (Johnson, 2007) [13]. According to

Jimoh (2007) [12], an overhead projector (often abbreviated to OHP), like a film or slide projector, uses light to project an enlarged image on a screen, allowing the view of a small document or picture to be shared with a large audience. In the overhead projector, the source of the image is a page-sized sheet of transparent plastic film (also known as "foils" or "transparencies") with the image to be projected either printed or hand-written/drawn. These are placed on the glass platen of the projector, which has a light source below it and a projecting mirror and lens assembly above it (hence, "overhead"). They were widely used in education and business before the advent of video projectors. An overhead projector works on the same principle as a slide projector, in which a focusing lens projects light from an illuminated slide onto a projection screen where a real image is formed. However some differences are necessitated by the much larger size of the transparencies used (generally the size of a printed page), and the requirement that the transparency be placed face up (and readable to the presenter).

Quality education refers to the type of education that is concerned with its goodness of it. Quality in education means “fitness for purpose”; that is, the quality of education to any society must take reference from what that society considers to be the purpose of education (Anikweze, 2011) [5]. The clarified objectives of section 20 of the 1979 Nigeria constitution states that the educational system shall be the type that motivates and stimulates creativity and draws largely on our traditions of values such as respect for positive Nigerian moral and religious values, ensure steadiness of traditional values anontheir progressive updating to meet modern development, produce responsible citizenship and an ordered society among others. This means that the educational system should assist students in developing the habits, skills, opinions, tastes, and virtues required for the preservation of our cultural values and the flourishing of moral principles lives (Jameel & Ahmad, 2021) [11]. Quality education is one of the Sustainable Development Goals (SDG number 4) of the United Nations Development Programme (UNDP) ratified in 2015. It seeks to ensure inclusive and equitable quality education and promote lifelong learning across the world by the year 2030 (Sean, 2016) [19]. Quality education produces the results required for individuals, communities, and societies to thrive. It enables schools to fully align and integrate with their communities, as well as access a variety of services across sectors designed to support their students' educational development. Three key pillars support quality education: ensuring access to quality teachers; providing access to quality learning tools and professional development; and establishing safe and supportive quality learning environments (Sean, 2016) [19].

Some of the challenges to quality education in Nigeria include a lack of qualified teachers, overcrowded classrooms, a lack of teaching materials and poor-quality curricula, a lack of infrastructural facilities, low teacher remuneration, and poor working conditions, all of which dampen morale and reduce job satisfaction and commitment (Aduwa-Ogiegbaen & Iyamu, 2005) [3].

ICTfacilities enhancethe improvement of quality of education in Nigeriathrough its dynamic interactive and engaging content. It has the potential to accelerate, enrich and deepen skills, motivate and engage students learning, help to relate school experience to work practice, help to create economic viability for tomorrow’s workers; contributes to the total development of the tertiary institution; strengthens teaching and learning; and provides opportunities for connection between the tertiary institution and the world. ICT facilities can make the tertiary institutions more efficient andproductive, through its variety of tools to enhance andfacilitate teachers’ professional activities (Adeoye, Oluwole, & Loto, 2013) [1]. It allows students to communicate with one another through e-mail, mailing lists, chat rooms, and other means. It allows for faster and easier access to more comprehensive and up-to-date information. ICT facilities can also be used to do complex tasks as it provides researchers with a steady avenue for the dissemination of research reports and findings.

Statement of the Problem

The impact of Information and Communication Technology (ICT) facilities on the improvement of quality of education in Nigerian education is lagging behind expectation and desire. This was revealed by the fact that while some higher institutions have some computer facilities; only a fraction was equipped with basic ICT facilities necessary for the improvement of quality of education in Nigerian. Essentially, the impact of ICT in teaching and learning is used to promote information literacy that is the ability to access, use, evaluate information from different sources so as to enhance teaching and learning, solve problems and generate new knowledge. Today, statistics have indicated where only few degree awarding institutions in Nigeria have adopted the integration of ICT facilities in their institutions (Pelgrum & Law, 2013) [18]. The aforementioned constituted the problem of this study because it is at the higher level of education where returns to student education are highest and it is particularly import to acquire skills and competencies needed to become empowered to respond to social cant hange in societies for the better. But without ICT in teaching and learning, especially for students in higher degree awarding institutions in Nigeria, the situation might lack the social empowerment that can make students compete favourablywith others. Thus, failure to re-shape education practices to embrace ICT facilities in schools in Nigeria might be the main bottleneck preventing the students from acquiring equitable access of educational opportunities for quality education. Therefore, the researchers intended to examine the impact of information and communication technology facilities in the improvement of quality of education in Nigeria.

Purpose of the Study

The purpose of the study was to find the impact of use of information and communication technology facilities on the improvement of quality of Instruction in higher education in Rivers. Specifically, the objectives of the study were to:

1. determine the extent to which use of overhead projectors enhanced the improvement of quality of Instruction in higher education..
2. Ascertain the extent to which use of teleconferencing enhanced the improvement of quality of Instruction in higher education
3. Find out the extent to which use of electronic notice boards enhanced the improvement of quality of Instruction in education.

Research Questions

The following research questions guided the study:

1. To what extent does use of overhead projectors enhanced the improvement in quality of Instruction in higher education?
2. To what extent does adoption of teleconferencing enhanced the improvement in the quality of Instruction in higher education?
3. To what extent does use of electronic notice boards enhanced the improvement in the quality of Instruction in higher education?

Hypotheses

The following hypotheses were formulated in this study and tested at 0.05 level of significance:

1. There is no significant difference in the mean ratings of IAUE and RSU students on the extent to which use of overhead projectors enhanced the improvement in the quality of Instruction in higher education
2. There is no significant difference in the mean ratings of IAUE and RSU students on the extent to which use of teleconferencing enhanced the improvement in the quality of Instruction in higher education.
3. There is no significant difference in the mean ratings of IAUE and RSU students on the extent to which use of electronic notice boards enhanced the improvement in the quality of Instruction in higher education.

Methodology

The descriptive survey research design was adopted in this study. The population of the study consisted of 189 post graduate students of the Department of Educational Management of 2021/2022 academic session in the state Universities in Rivers State.The population consisted of 189 post graduate students (98 from Ignatius Ajuru University of Education and 91 from Rivers State University). The entire population was used as census study since the population was small and manageable.The instrument used for data collection was researchers constructed questionnair.The instrument was both face and content validated by two experts in computer science and Educational Management in Rivers State University. The reliability of the instrument was determined using Cronbach Alpha reliability statistics which yielded an average reliability coefficient index of 0.73 for the four clusters in the instrument which revealed that the instrument was reliable for the study. The instrument was administered to the students in their various institutions by the assistance of the Heads of Department. Descriptive statistics of mean and standard deviation were used to analyze the research questions, while the inferential statistic of z-test was used to test the null hypotheses at 0.05 alpha level.

Results

Research Question 1: To what extent does adoption of overhead projectors enhance the improvement in the quality of Instruction in higher education?

Table 1: Descriptive statistics on the extent to which use of overhead projectors enhanced the Improvement in the quality of Instruction in higher education.

		IAUE Students (n_1 = 91)			RSU Students (n_2 = 80)		
S/No.	**Items**	$\overline{X}$	**SD**	**Decision**	$\overline{X}$	**SD**	**Decision**
1	Setting up and using an overhead projector requires minimal skills, which are easy to learn.	3.28	0.91	HE	3.32	0.95	VHE
2	The transparencies you use for material to show on an overhead projector offer great flexibility.	3.35	0.94	VHE	3.23	0.95	HE
3	Provides easy mode of jotting note for the students which enhances the quality of education.	3.38	0.85	VHE	3.28	0.90	HE
4	Interactive projectors also make it easier to teach dynamically and improve the quality of education.	3.35	0.86	VHE	3.33	0.86	VHE
5	Overhead projectors give room for teaching with a variety of mediums.	3.25	0.98	HE	3.15	1.04	HE
	Total	3.32	0.91	VHE	3.15	0.94	HE

Source: Filed Survey, 2023.

Table 1 above revealed the extent to which use of overhead projectors enhanced the improvement of quality of education in Nigeria. With a grand mean of 3.32, 3.15 and standard deviation of 0.91 and 0.94 respectively, the results indicated that students in the two universities accepted to a high extent that overhead projectors enhance the improvement of quality of education in Nigeria.

Research Question 2: To what extent does use of teleconferencing enhanced the improvement in the quality of Instruction in higher education?

Table 2: Descriptive statistics on the extent to which use of Teleconferencing Enhanced the Improvement in the quality of Instruction in higher education.

		IAUE Students (n_1 = 91)			RSU Students (n_2 = 80)		
S/No.	**Items**	$\overline{X}$	**SD**	**Decision**	$\overline{X}$	**SD**	**Decision**
6	Teleconferencing saves time, which you can spend completing crucial tasks.	3.29	0.94	HE	3.30	0.98	VHE
7	Save on travel expenses which helps to minimize cost.	3.26	0.95	HE	3.30	0.94	VHE
8	It enhances efficient record keeping for the improvement of quality if education.	3.34	0.89	VHE	3.25	0.99	HE
9	Cuts conference cost and makes education less expensive.	3.25	1.00	HE	3.38	0.83	VHE
10	Teleconferencing ensures that workers at various hierarchies are in constant communication with one another.	3.35	0.91	VHE	3.27	0.95	HE
	Total	3.30	0.94	VHE	3.30	0.94	VHE

Source: Filed Survey, 2023.

Table 2 above revealed the extent to which use of teleconferencing enhanced the improvement in the quality of Instruction in higher education. With a grand mean of 3.30, 3.30 and standard deviation of 0.94 and 0.94 institutions respectively, the results indicated that students in the two universities accepted to a very high extent that use of teleconferencing enhanced the improvement of quality of Instruction in higher education in.

Research Question 3: To what extent does use of electronic notice boards enhanced the improvement in the quality of Instruction in higher education?

Table 3: Descriptive statistics on the extent to which use of electronic notice boards enhanced the Improvement in the quality of Instruction in higher education.

		IAUE Students (n_1 = 91)			RSU Students (n_2 = 80)		
S/No.	**Items**	$\overline{X}$	**SD**	**Decision**	$\overline{X}$	**SD**	**Decision**
11	Electronic notice board is most efficient communication medium between students which enhances improves quality of education.	3.30	0.90	VHE	3.28	0.94	HE
12	Itserves as an active medium for information sharing which improves quality of education.	3.38	0.89	VHE	3.18	0.98	HE
13	It is very easy to operate and consumes less power.	3.37	0.85	VHE	3.30	0.89	VHE
14	It is a good meansof obtaining students responses and feedback.	3.28	0.96	HE	3.27	0.97	HE
15	The circuit of the wireless notice board is portable as it enhances the quality of education.	3.33	0.88	VHE	3.23	0.95	HE
	Total	3.33	0.90	VHE	3.25	0.95	HE

Source: Filed Survey, 2023.

Table 3 above revealed the extentelectronic notice boards enhanced the improvement in the quality of Instruction in higher education. With a grand mean of 3.33, 3.25 and standard deviation of 0.90 and 0.95 respectively, the implication is that students in the two universities accepted to a high extent that the use of electronic notice boards enhanced the improvement in quality of Instruction in education.

Test of Hypotheses

Hypothesis 1: There is no significant difference in the mean ratings of IAUE and RSU students on the extent to which use of overhead projectors enhances the improvement in the quality of Instruction in higher education.

Table 4: z-test of significant difference in the mean rating of IAUE and RSU students on the extent to which use of overhead projectors enhances the improvement in the quality of Instruction in higher education.

Category of Respondents	N	X	SD	$\propto$	Df	z-cal	z-crit	Decision
IAUE	91	3.32	0.91	0.05	169	0.87	1.96	Fail to reject
RSU	80	3.15	0.94					No Sig Difference

Source: Field Survey, 2023.

From Table 4 above, since the calculated z-value 0.87 is less than the z-critical value of 1.96 at 169 degree of freedom, it is imperative therefore to state that the null hypothesis which states that there is no significant difference in the mean rating of IAUE and RSU students on the extent to which overhead projectors enhanced the improvement in the quality of instruction in higher education is accepted and the alternate is rejected. In other words, overhead projectors enhanced the improvement in the quality of Instruction in higher education

Hypothesis 2: There is no significant difference in the mean ratings of IAUE and RSU students on the extent to which use of teleconferencing enhances the improvement in the quality of instruction in higher education.

Table 5: z-test of significant difference in the Mean Rating of IAUE and RSU students on the extent to which use of Teleconferencing enhanced the Improvement in the quality of Instruction in higher education.

Category of Respondents	N	X	SD	$\propto$	Df	z-cal	z-crit	Decision
IAUE	91	3.30	0.94	0.05	169	0.89	1.96	Fail to reject
RSU	80	3.30	0.94					No Sig Difference

Source: Field Survey, 2023.

From Table 5 above, since the calculated z-value 0.89 is less than the z-critical value of 1.96 at 169 degree of freedom, it is imperative therefore to state that the null hypothesis which states that there is no significant difference in the mean rating of RSU and IAUE students on the extent to which use of teleconferencing enhanced the improvement in the quality of Instruction in higher education is accepted and the alternate is rejected. In other words, teleconferencing improves the quality of education in Nigeria.

Hypothesis 3: There is no significant difference in the mean ratings of IAUE and RSU students on the extent to which use of electronic notice boards enhances the improvement in the quality of Instruction in higher education.

Table 6: z-test of significant difference in the mean rating of IAUE and RSU students on the Extent to which use of electronic notice boards Enhanced the Improvement in the quality of Instruction in higher education.

Category of Respondents	N	X	SD	∝	Df	z-cal	z-crit	Decision
IAUE	91	3.33	0.90	0.05	169	0.95	1.96	Fail to reject
RSU	80	3.25	0.95					No Sig Difference

Source: Field Survey, 2023.

From Table 7 above, since the calculated z-value 0.95 is less than the z-critical value of 1.96 at 169 degree of freedom, it is imperative therefore to state that the null hypothesis which states that there is no significant difference in the mean rating of RSU and IAUE students on the extent to which electronic notice boards enhance the improvement of quality of education in Nigeria is accepted and the alternate is rejected. Thus, the use of electronic notice boards enhances the improvement of quality of education in Nigeria.

From Table 6 above, since the calculated z-value 1.03 is less than the z-critical value of 1.96 at 169 degree of freedom, it is imperative therefore to state that the null hypothesis which states that there is no significant difference in the mean rating of RSU and IAUE students on the extent to which optical fibers enhance the improvement of quality of education in Nigeria is accepted and the alternate is rejected. Thus, the use of optical fibers improves the quality of education in Nigeria.

Discussion of Findings

The study examined the impact of information and communication technology facilities in the improvement in the quality of Instruction in higher education. Table 1 revealed the extent to which use of overhead projectors enhanced the improvement in the quality of Instruction in higher education. With a grand mean of 3.32, 3.15 and standard deviation of 0.91 and 0.94 respectively, the results indicated that students in the two universities accepted to a high extent that overhead projectors enhanced the improvement in the quality of Instruction in higher education. In the test of hypothesis 1, the calculated z-value of 0.87 is less than the z-critical value of 1.96 at 169 degree of freedom, it is imperative therefore to state that the null hypothesis which states that there is no significant difference in the mean rating of IAUE and RSU students on the extent to which use of overhead projectors enhanced the improvement in the quality of Instruction in higher education is accepted and the alternate is rejected. In other words, overhead projectors enhance the improvement of quality of education in Nigeria. In line with this finding, Jimoh (2007) [12] asserted that an overhead projector (often abbreviated to OHP), like a film or slide projector, uses light to project an enlarged image on a screen, allowing the view of a small document or picture to be shared with a large audience. In the overhead projector, the source of the image is a page-sized sheet of transparent plastic film (also known as "foils" or "transparencies") with the image to be projected either printed or hand-written/drawn. These are placed on the glass platen of the projector, which has a light source below it and a projecting mirror and lens assembly above it (hence, "overhead"). They were widely used in education and business before the advent of video projectors. An overhead projector works on the same principle as a slide projector, in which a focusing lens projects light from an illuminated slide onto a projection screen where a real image is formed. However some differences are necessitated by the much larger size of the transparencies used (generally the size of a printed page), and the requirement that the transparency be placed face up (and readable to the presenter).

The study in Table 2 also revealed the extent to which use of teleconferencing enhanced the improvement in the quality of Instruction in higher education. With a grand mean of 3.30, 3.30 and standard deviation of 0.94 and 0.94 respectively, the results indicated that students in the two universities accepted to a very high extent that teleconferencing enhanced the improvement in the quality of Instruction in higher education. The corresponding test of hypothesis 2 revealed that since the calculated z-value 0.89 is less than the z-critical value of 1.96 at 169 degree of freedom, it is imperative therefore to state that the null hypothesis which states that there is no significant difference in the mean rating of IAUE and RSU students on the extent to which use of teleconferencing enhanced the improvement in the quality of Instruction in higher education is accepted and the alternate is rejected. In other words, the use of teleconferencing improved the quality in the Instruction in higher education. This finding was supported by the assertion of Johnson (2007) [13] that teleconferencingrefers to a process whereby people conduct real-time discussion on the Internet, as such becomes pertinent for the improvement of quality of education in Nigeria. Here, each participant will type his or her contribution to any discussion topic in the internet and also read other people's contributions to the discussion. This is made possible with the internet relay chat; each participant in the discussion group can enter and leave the discussion when he or she likes.

The Table 3 revealed the extent to which use of electronic notice boards enhanced the improvement in the quality of Instruction in higher education. With a grand mean of 3.33, 3.25 and standard deviation of 0.90 and 0.95 respectively, the implication is that students in the two universities accepted to a high extent that the use of electronic notice boards enhanced the improvement in the quality of Instruction in higher education. The corresponding test of hypothesis 3 revealed that since the calculated z-value 0.95 is less than the z-critical value of 1.96 at 169 degree of freedom, it is imperative therefore to state that the null hypothesis which states that there is no significant difference in the mean rating of IAUE and RSU students on the extent to which use of electronic notice boards enhanced the improvement in the quality of Instruction in higher education is accepted and the alternate hypothesis is rejected. Thus, the use of electronic notice boards enhanced the improvement in the quality of Instruction in higher education. In congruence to this finding, Dave and Tearle (2010) [9] opined that ICT involves the use of combination of technologies or facilitiessuch as electronic notice boards in generating information. They further established that electronic notice boards involve the use of communication software to allow personal computers to act as public address systems. Electronic notice boards are created to link

people who have the same interest for the purpose of information dissemination from time to time.

Conclusion

It is pertinent to state here that Nigeria is lagging behind in the level of application of ICT in the teaching and learning process. The ICT facilities are lacking in schools as the capacity for using ICT by both teachers and students is very low despite the perceived benefit that thusinnovative technology can give to schools. In order to fit into the new scientific order, it is necessary for Nigeria secondary schools and individuals alike to develop a society and culture that places a high value on information and communication technology. When compared with most developed countries of the world, the impact of ICT in Nigeria education system is still very low, even when compared with some Africa countries. This drastically falls below the expectations of concerned individuals in thispresent dispensation. The basic ingredient required for ICT programmes to blossomvery well is electricity. Nearly all the public tertiary, secondary and primary schools lack sufficient electricityand competent teachers for ICT programmes as well as facilities. At the tertiary level theissue of electricity is the same with the first two levels of education. Some of the tertiaryinstitutions can because of the generated income from school fees and from government intervention afford to use alternative power source for short time measure. Student on theirown purchase laptops and desktop computers and even visit the internet to update their knowledge on ICT. Apart from electricity, many other factors are responsible for the impact ofICT on the Nigerian educational system.

Recommendations

The following recommendations were made;

1. Government should urgently formulate an all-embracing national ICT policy, which will ensure availability, accessibility and affordable of ICT facilities.
2. Government should as a matter of urgency ensure uninterruption of power supply in tertiary institutions in Nigeria.
3. ICT education, training and retraining should be organized at all educational levels in higher education in Rivers State.

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