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IMPACT OF INTEGRATION OF INFORMATION AND COMMUNICATION TECHNOLOGIES IN LIBRARY INSTRUCTION METHODOLOGY ON STUDENTS IN FEDERAL UNIVERSITIES IN NIGERIA

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ABSTRACT: *The study is on the impact the integration of ICT in library instruction methodology has on students in federal universities in Nigeria. The study adopted a random sampling method with a sampled population of 496 derived from 2018/2019 session 100 level students. Two major instruments were developed for data collection and validated by two senior lecturers from the Department of Library and Information Science, Nnamdi Azikiwe University, Awka, Nigeria with a reliability level of 0.82 and 0.84 respectively using Cronbach alpha (α) procedure. The outcome of the study shows that there is a diversion from the traditional method (theoretical) of instruction with the integration of ICT which enhances students' mastery of the use of library and other related technologies.*

KEYWORDS: integration, information and communication technologies, library, instruction methodology, students, federal universities, Nigeria

INTRODUCTION

The use of information and communication technology (ICT) as an instrument for teaching, learning and research in our universities and libraries has facilitated the necessity to overhaul both the contents and methodologies of library instruction. It is in view of the above opinion that Mossop (2013) posits that academic libraries undergo episodes of strategic changes reflecting the actual need to adjust direction and momentum to best the needs of those they serve. According to Omeluzor (2018), advancement in technology in handling, processing, accessing, storing, retrieving and disseminating information in libraries require a holistic and pedagogical approach of instructing library patrons especially students by combining the conventional methods with ICT. The fact is that, any instruction in the use of ICT facilities for accessing information sources and services will contribute in no small measure in making the users ICT literate and easy accessibility of the library information resources. Stating the obvious, students learning, understanding and application of learned objects are the basics of education

Library instruction or user education is a process of making library users understand how to effectively use the library resources to identify, locate, search, retrieve and exploit information in the library. To St. Mary University (2019), it is a process which enhances information competency

that enables students to take control of their information needs by becoming more independent, assuming personal control of their learning and becoming aware of effective processes for finding, analyzing and using information.

Imperatively, the old way or conventional method of delivery library instruction has been overtaken by development hence does not impact positively on the library clients of the 21st century and therefore calls for a change. In a world that is dynamic, change remains inevitable, yet it is one of the most difficult things to be applied by both individuals and organizations. In the opinion of Madsen (2018) which is the obvious, it is a vital ingredient for any business that wants to survive and thrive in an increasing competitive and fast-spaced world. Changing the library instruction method in view of the above assertion therefore becomes very imperative as there is the call for an inclusion of ICT which will no doubt, go a long way in enhancing the library users searching skills and the development of students' skills in the use of ICT- based library services. In the opinion of Guay (2007), all these practices integrating ICT in supporting learning and teaching show that a new relationship toward knowledge is progressively taking hold in the field of education. ICT forces both students and teachers to proceed differently and to modify their practices involving research as well as treatment and communication of information. As argued by Omeluzor et al (2017), users of academic libraries including students, staff and faculty may not have any basic skill or knowledge in using ICT-library based information resources and therefore the need for ICT-based library instruction.

Statement of Problem

The essence of education is to move with what time and nature have established in live, noting that there is nothing in life that is constant except change The birth of of ICT has actually changed the way we think and do things as life has taken a new dimension as ICT is now being used in every facet of human activities including teaching, learning and research which is the tripartite functions of the university. The library which is the pivot on which these functions revolve has a duty to provide the needed resources to satisfy the information needs of students, staff and faculty. The issue is not providing the resources but being in a position to facilitate easy accessibility of these information sources. It is therefore a necessitated responsibility for the library to teach her users no matter the class how to easily access the information in the library as to satisfying their information needs. Working with the definition of library; a place where information materials are articulately acquired, systematically processed and organized and subsequently stored and preserved and disseminated to users when needed (Onwubiko and Uzoigwe, 2004), one is not left in doubt that librarians have a lot of responsibilities in ensuring that library users are taught to effectively and efficiently use the library resources.

In this 21st century, there is a paradigm shift from the conventional way of setting up the library to digitization. In which case, ICT dictates how information is stored, retrieved and accessed. With

this development therefore, the instruction is no longer on how to use the card catalogue but the OPAC, surf the internet, and search e-databases among others. It is in line with the above, that there is this clarion call for a change in the methodology of library instruction in federal universities in Nigeria if the goals and objectives of these universities are to be realized.

The weakness of the conventional method of library instructions is that students are not trained to be independent researchers and good information handlers while the inclusion of ICT will bring a total transformation of the students as they will be exposed to how to access and independently manage the information at their disposal. This no doubt, keeps the students well informed and prepared for life-long learning. This call has been identified in some studies as a feasible option in making students independent researchers and sophisticated learners (Ojasaar, 2003, Suleiman, 2012; Igwebuike and Agbo, 2014). It is also in line with the Association of College Research Libraries recommendations of 2017 which states inter-alia that Computer laboratory with instructor and students' workstations; projector; printer, and access to the internet should be made available for library instruction, while instructional modes may include: reference interview, digital or print instruction resources; web tutorials or web-based instruction; asynchronous modes of instruction (email, social media) synchronous modes of instruction (chats, audio/video/web conferencing) etc

To carry out this objective, librarians would have to negotiate the transition from instruction contents of programs to that of problem solving, where the students would no longer be passive receivers of information, but problem solvers-researchers who investigate problems. The librarians would cease being dispensers of established knowledge and instead become agents of assistance who present problematic situations and who encourage library users to mobilize their prior knowledge and their know-how in order to try to solve them. Information and communication technologies constitute powerful tools which support the construction of new knowledge while helping library users to track information-to process it and share it with others. This paper therefore is aimed at discovering how the integration of ICT can change library instruction methods in Federal universities in Nigeria.

Objectives

The specific objectives of this study are:

1. To know the areas that ICT is included in library instruction in the university;
2. To identify methods applied for library instruction in the university;
3. To establish the extent of students' ICT skills before being admitted into university;
4. To ascertain the accrued benefits to students after under-going a library instruction course integrated with ICT
5. To identify factors militating against the integration of ICT in library instruction.

Research Questions

This study was guided by the following questions:

1. Which areas are ICT included with library instruction in the university?

2. What methods are applied in library instruction in the university?
3. What is the level of students' ICT skill before admission into the university?
4. What are the accrued benefits after under-going a library instruction course integrated with ICT?
5. What are the factors militating against the full integration of ICT in library instruction?

LITERATURE REVIEW

Conceptual overview of Library Instruction

Bibliographic instruction, library instruction, library use instruction, and information literacy are alternative terms, which describe the same basic concepts, and these terms have been in use in American academic libraries for quite some time. Though the scope of each term may be slightly different (some terms denote wider coverage) these terms are, generally speaking, interchangeable in an academic environment. Librarians in American libraries often prefer to use the term "library instruction" since it seems to be easier for users to understand. In China, the terms "user education" and "information literacy" are more common (Wang and Vann (2013). The above assertion was also corroborated by Reitz (2004) as he states that the structure of the literature of the field, research methodologies appropriate to Library instruction also called bibliographic instruction (BI), user education and library orientation, consists of "instructional programs designed to teach library users how to locate the information they need quickly and effectively. It usually covers the library's system of organizing materials the academic discipline, and specific resources and finding tools (library catalog, indexes and abstracting services, bibliographic databases, etc. It prepares individuals to make immediate and lifelong use of information effectively by teaching the concepts and logic of information access and evaluation, and by fostering information independence and critical thinking.

According to University of Minnesota (2020) library instruction is a process which helps students develop their research skills and evaluate information critically. It enumerated Key learning outcomes for library instruction to include:

- Students will develop effective search terms and search strategies for their information needs;
- Students will revise searches in order to persist in the face of search challenges;
- Students will evaluate sources based on information need and the context in which the information will be used;
- Students will identify multiple perspectives on a scholarly topic,
- Students will formulate research questions that are appropriately scaled, facilitate inquiry, and can be supported by available resources

While to University of British Columbia (2012), the goal of Library instruction program is to advance the information and digital literacy of students, faculty and staff.

Figure 1: **Library Instructional Materials**
Source: University of British Columbia (2012) http://wiki.ubc.ca/File

Brooks Library of Central University Washington (2019) explains that library instruction supports the development and application of information literacy practices through support instruction and curriculum design. The goal is to assist students in understanding how to access, use, and create information. The library align library instruction to the information literacy which according to American Library Association. (2015), is the set of integrated abilities encompassing the reflective discovery of information, the understanding of how information is produced and valued, and the use of information in creating new knowledge and participating ethically in communities of learning

Standish Library (2018) posits that the primary purpose of library instruction program is to foster and develop students' information literacy skills; specifically the ability to identify, locate, effectively evaluate, and use needed information. The library reveals that these are essential skills needed to succeed academically, but are also necessary for the development of lifelong learning. Library instructions therefore are tailored towards making students evergreen in critical analysis and proper utilization of available information.

Writing on the need for library instructions, Head, A.J and Eisenberg, M. B (2009). Opine that Students report that academic research is more difficult to conduct in the digital age, primarily due to information overload. For most students, getting started on a research assignment is most challenging. Assistance at this stage can help students navigate the entire research process they conclude. The underline factor here is that library instruction is a necessity in the academic well being of every student considering the fact, that university academic activities revolve around research and developing lifelong learning.

On the methods to be applied in library instruction, a review carried out by Downard's (1992) shows that library orientation, bibliographic instruction, information skills teaching, online instruction and course-related instruction have been in use. While Ezeani and Osuigwe (2015) in a study on an assessment of the information literacy practices of librarians in universities in South East, Nigeria

by reveal that frequently used methods were oral presentation and blackboard. The study further showed that computer, Internet, and Power-point received a low usage of 23.7 percent, 17.1 percent and 15.8 percent respectively. ALA (2011) on her on part recommended computer lab with instructor and student workstations, projector, printer, access to the Internet as basic instructional tools. Whereas at the University of Vermont Library (2016), library instruction is provided through various methods which include: course-related instruction, individual consultations, graduate student workshops, graduate student orientations, international students' reception, summer programs, Ad-Hoc workshops and community workshops aimed at equipping the students for successful researches. The Association of College and Research Libraries (2016) posits that library instruction should employ active learning strategies and techniques that require learners to develop critical thinking skills in concert with information literacy skills. This according to her will provide an avenue for the learners to develop themselves rather than depending on others for assistance in utilizing the library resources. The Association, therefore, suggested that instructional mode should include reference interview, individual or small group research consultation/appointments, digital or print instruction resources, group instruction in library or campus classrooms, web tutorials or web-based instruction.

ICT and its Integration with Library Instruction

One of the laws of librarianship states that 'the library is a growing organism' which implies that library operational system and methods of providing services are subject to change as the societal ways and needs change. The library by its nature is to ensure that users are appropriately indoctrinated to effectively and efficiently utilize the library as to satisfying their information needs. It is in view of the above that Esse (2014) advocated the need for the library to intensify its efforts in educating the library users through setting up additional methods of user education in order to achieve excellence in education excellence, noting that the library users should be educated in the use of online researches and databases for their research works. This is where Information and communications technology (ICT) which is an extensional term for information technology (IT) that stresses the role of unified communications (Murray, 2011) and the integration of telecommunications (telephone lines and wireless signals) and computers, as well as necessary enterprise software, middleware, storage, and audiovisual systems, that enable users to access, store, transmit, and manipulate information.(Free Online Dictionary of Computing 2008) become imperative. In the opinion of Okoye (2013), hands-on-demonstration using workstations, online resources and databases are not being used in library instruction suggesting that students ought to be exposed to current use ICTs in accessing and retrieving information.

Writing on the use of ICT in the delivery of library services to library clientele, Haliso (2011) and Ayia and Kumah (2011), opine that university libraries should embrace information technologies as a tool for service delivery more so, library processes and structuring are proving unsatisfactory to responding quickly to library users in this technology driven era. To this end, Ololube, Eke, Uzorka and Ekpeyong (2009) and Miima (2014) posit that libraries need to imbibe the change of integrating ICT into library instruction as studies have shown that the integration of ICT in learning increases the skill, learning and academic performance of students and staff. Indeed, with the advent of the World Wide Web (WWW), there are now new tools and learning procedures that support the development of such skills. Information and communication technologies could prove to be

advantageous because of their interactive and non-linear properties, highlighted by the hypertext technique that supports the construction of knowledge. This technique empowers the user, who proceeds to choose his paths. As cleverly stated by Nanard and Boksenbaum (1995), the reader of the WWW explores the Web. Not only is he a typical information "miner", but he is also a frantic miner because the machine made his pickaxe light. He scans the Web to find what interests him. He digs, takes a nugget of information, looks at it and throws it either in his bag or rejects it. Above all, he does that quickly! Very quickly: he "surfs".

Schofield (1995) adds that ICT gradually transform teaching practices while presenting enormous potential at the apprenticeship level. New relations are established between the teacher, his students and computers. Then, the teacher is not perceived as the one who does all the work, but the one who helps students to adopt the objectives of the training programs. The European Council published in 1998 a report using information technologies to improve the teaching of history. The experiments presented in the report following a conference held in Finland that wished to answer this question. Indeed, for a number of students, having recourse to ICT already constitutes, according to the report, a powerful motivation. Students use a computer at home and, therefore, can use the abilities and knowledge obtained at home when they are in class. ICT often oblige students to work in collaboration and to share their thoughts.

Additionally, four American research teams worked on the designing of didactical tools using ICT. The results of their work make it possible to believe that ICT represent very useful tools in the learning process **(**Center for Special Applied Technology, 1996). According to Guay (2007), all these practices integrating ICT in supporting learning and teaching show that a new relationship toward knowledge is progressively taking hold in the field of education. ICT forces both students and teachers to proceed differently and to modify their practices involving research as well as treatment and communication of information. Madukoma, Omeluzor and Ogbuiyi (2013) believe that the integration of ICT into teaching and learning helps students' intellectual ability and skill for accessing and retrieving information as well as constructing a framework for learning. The above assertion is also corroborated by Lucas (2017) as he averred that the integration of ICT to library instruction teaches students how to electronically use the library resources and evaluate the research materials they find.

In developed countries like Canada, United Kingdom (UK) and United State of America (USA) ICT is integrated into their library instruction. For instance Multimedia Educational Resource Learning Online Teaching (MERLOT) in 2015 developed an ICT literacy project which is intended to provide a systematic approach which incorporates ICT literacy into education to ensure that students are ICT literate (MERLOT, 2017). Likewise, the instructional method adopted by the Cornell University library enables students to use the library resources, research methods and advanced tools (Cornell University Library, 2017).

In the case of Nigeria, Omeluzor (2018) explains that the library instruction in Clifford University (A private university in Owerrinta, Abia State) is designed to serve as a template for universities in Nigeria in particular and Africa as a whole, having been modeled after the Association of College Research Libraries 2017 recommendation. Emphasizing on the need to integrate ICT with instruction increases awareness skill and knowledge of the library users in using electronic information resources resources effectively. Omeluzor, Akibu and Akinwoye (2017) also shared the same view while Mbugua, Kiboss and Tamii (2015) added that the inclusion of ICT with library instructions boost students' academic performance.

In the US, the development of the 21st century skills was identified as a critical factor for students success in the digital age and was recommended for inclusion in educational standards curriculum and assessment (The CEO Forum on Education and Technology, 2001) Apple Computer (2002) and CEO and CEO Forum on Education and Technology (2001) reveal that integration of ICT with teaching helps students to recall information and use it to solve problems as well as enhancing students' knowledge of investigation and enquiry skills and creating curiosity. MERLOT (2017), stresses that students need a broad ICT literacy base and deeper knowledge in the discipline. To Bhatti (2010), the changing nature of higher education worldwide, along with ever increasing growth of library collection, technological development in handling and retrieving information and fundamental changes in the nature of reference services justifies the need for integration of ICT with library instruction in academic institutions. Madukoma, Omeluzor and Ogbuiyi (2013) in a study on library instruction and academic performance of undergraduates at Babcock University, Nigeria showed that ICT-based library instruction impacts students' ability to be familiar with various information retrieval tools in addition to accessing and downloading information without depending on the library staff.

Laleye (2015), writes on the challenges that may likely militate against successful integration of ICT with library instruction in Nigerian universities. According to him, successful integration of ICT the school system depends largely on the attitude of teachers towards the role played by modern technologies in teaching and learning. Insofar as the attitude of teachers remains sacrosanct, other factors according to Ololube (2009) are: chronic absence of ICT instructional materials, ineffective policy implementation and lack of other infrastructure and equipment to aid teaching and learning. The above challenges have also been cited by the Commonwealth of Learning International (CLI) 2001 as serious challenges facing higher education in Nigeria on ICT literacy knowledge integration with academic courses and programs.

In Summary, there is this concord by all the authors of the need to integrate ICT with teaching and learning and by extension, library instructions.

RESEARCH METHODOLOGY

Area of study

The area of study of this research is the entire 40 Federal universities in Nigeria which are: Abubakar Tafawa Balewa University, Bauchi;. Ahmadu Bello University, Zaria; Alex Ekwueme Federal University, Ndufu-Alike, Ebonyi State; Bayero University,Kano; Federal University Gashua; Federal University of Petroleum Resources, Federal University of Technology, Akure. Federal University of Technology, Minna; Federal University of Technology, Owerri; Federal University, Dutse, Jigawa State; Federal University, Dutsin-Ma, Katsina; Federal University, Kashere, Gombe State; Federal University, Lafia, Nasarawa State; Federal University, Lokoja, Kogi State; Federal University, Otuoke, Bayelsa; Federal University, Oye-Ekiti, Ekiti State; Federal University, Wukari, Taraba State; Federal University, Birnin-Kebbi; Federal University, Gusau; Michael Okpara University of Agriculture, Umudike; Modibbo Adama University of Technology, Yola; National Open University of Nigeria, Lagos; Nigerian Defence Academy, Kaduna; Nnamdi Azikiwe University, Awka; Obafemi Awolowo University, Ile-Ife; The Police Academy Wudil, kano State; University of Abuja, Gwagwalada; University of Agriculture, Abeokuta; University of Agriculture, Makurdi; University of Benin; University of Calabar; University of Ibadan; University of Ilorin; University of Jos; University of Lagos; University of Maiduguri; University of Nigeria, Nsukka; University of Port-Harcourt, University of Uyo and Usman Danfodiyo University, Sokoto State.

Sampled population of study

Since the Federal university system in Nigeria operates on the same benchmark, under the watch of National University Commission - the commission saddled with the responsibility of formulating policies and standards for running the universities, data collected from one Federal university not doubt represent the true situation of things in other federal university when it comes to courses or program offered. To this end, the sampled population for this study was restricted to Alex Ekwueme Federal University Ndufu – Alike, Ikwo, Ebonyi State, Nigeria which is one of the nine Federal Universities set up by Former President of Nigeria, Dr. Goodluck Ebele Jonathan (GCFR) on February 26, 2011 in order to expand access to quality education to all parts of Nigeria and to produce knowledge that will support the nation's economy and its industries. According NUC (2019), the University has student population of 8734. The University focuses on: Excellence and Integrity and a vision to be world Class University. It is located in South-eastern part of Nigeria. The University on inception inherited the new curriculum in GST103-Use of Library, ICT and Study Skills thus making it imperative for her to integrate ICT in every aspect of library instruction and services as in other federal universities. As an institution that is tailored to be of world class, the physical library was established along side with an e-library with 250 stand-alone computer set. Library is open to all staff and students who are also at liberty to access the e-library and other accrued e-books and resources.

To obtain the desired data the study adopted a random sampling method which according to Ary, Jacob, Sorensen and Walker (2014) and Nworgu (2015) is a sampling technique in which each

element in the population has equal and independent chance of being included in the sample with which a sampled population of 496 was derived out of 3497 students that matriculated for the 2018/2019 academic session.

Instrument for Data Collection and Analysis

Two sets of questionnaire were developed for data collection. The two parts structured questionnaires captioned: '**Impact of Integration of Information and Communication Technologies in Library Instruction Methodology**' (IIICTLIM) had Part one on demographic data and part two structured in line with the research questions. The instruments were validated by two senior lecturers from the Department of Library and Information Science, Nnamdi Azikiwe University, Awka, Nigeria with a reliability level of 0.82 and 0.84 respectively using Cronbach alpha (α) procedure. The first instrument with two parts was administered prior to the students' commencement of the library instruction course as to knowing their ICT skills before their admission into AE-FUNAI. The second instrument was aimed at ascertaining the accrued benefits to students for under-going library instruction course integrated with ICT; instructional methods applied areas that ICT is integrated with library instructions and identified challenges of integrating ICT to library instruction. This second instrument which was administered at the end of the library instruction course was aimed at establishing the impact the course had on the students. The instrument was personally administered by the researcher to the respondents and returned 100%. Finally, the data collected were analyzed using statistical Package for Social Sciences (SPSS version 24.0) with results presented in charts, tables, frequencies and percentages.

Presentation and Analysis of Data

Demographic Data

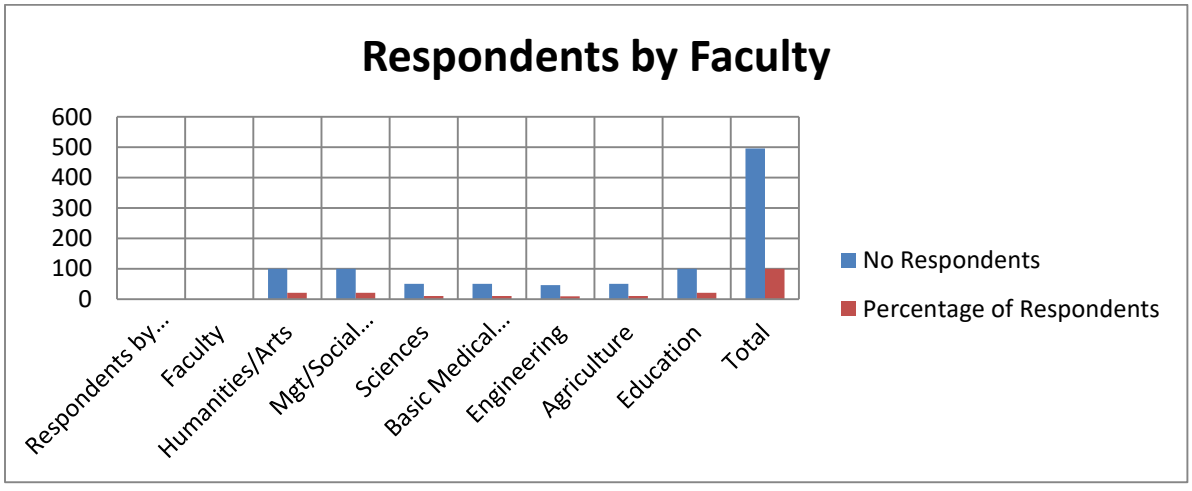

Figure 2: Respondents by Faculty

Figure 2 above shows that of the 496 respondents, Faculty of Arts/humanities had 100 (20.16%) respondents same with Faculties of management/social Sciences and Education, while Faculties of Sciences, basic medical Sciences and Agriculture had 50 (10.08%) respondents respectively. Faculty of Engineering took the rear with 46 respondents or 9.30%. The proportion of the respondents is based on the various faculty total students' population.

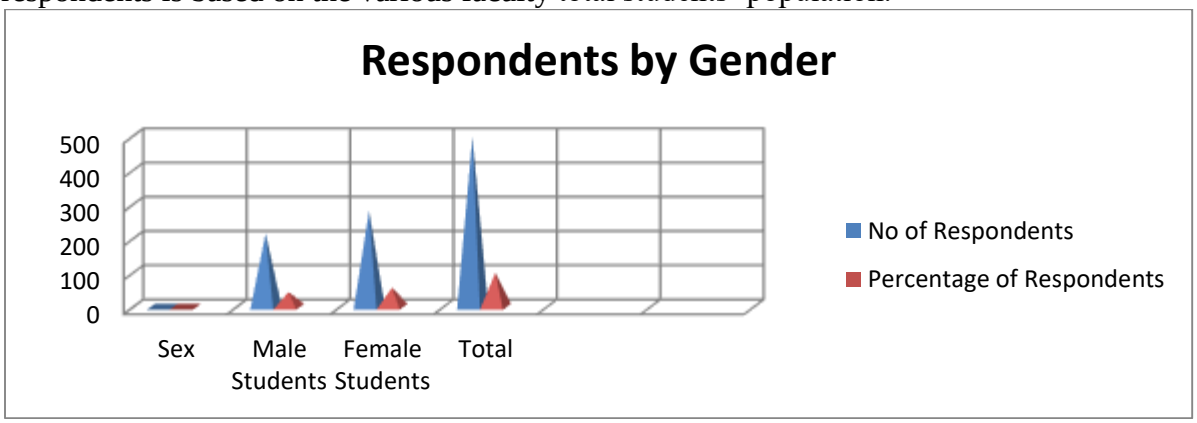

Figure 3: Respondents by Gender

The chart above (figure 3) shows that 281 or 56.65% of the sample are female which has become the usual average found on current students' characteristics and strengthens the idea that in Nigeria, female gender are more keen in acquiring higher education

Research Question 1:
Which areas are ICT included with library instruction in the university?

Table 1: Areas of ICT integration

S/No	Items	Yes	No	%	
				yes	No
1	Teaching and learning	496	-	100	
2	Searching the OPAC	496	-	100	
3	Designing PowerPoint for presentation	496	-	100	
4	Classroom Presentation	496	-	100	
5	Surfing the internet & e-databases	496	-	100	
6	Using the internet for instruction	-	496		100
7	In lesson note making	-	496		100
8	Retrieving and disseminating information	496	-	100	

The above data displayed in **table 1**, highlighted areas where ICT is integrated and also not integrated with library instruction. All the respondents-496 or 100% agree that ICT is integrated in the whole teaching and learning process of how to use the library; searching the OPAC; designing the PowerPoint for presentation; classroom presentation, surfing the internet and the-databases as well as retrieving and disseminating information. On the other hand, the entire respondents also indicated that ICT has not been integrated in lesson note making and the use of internet for library instruction.

Research Question 2:
What methods are applied in library instruction in the university?

Table 2: Instructional Methods

S/No	Items	Yes	%	No	%
1	Orientation	496	100	-	-
2	Classroom tutorials	496	100	-	-
3	Live demonstration and instruction	496	100	-	-
4	Online instruction			496	100
5	Interactive class discussion	496	100	-	-
6	One-on-one mentoring	195	39.31	301	60.69
7	Library tour guide	415	83.67	81	16.33
8	Practical	496	100	-	-

The data in **table 2** is in respect of research question 2 which is 'What methods are used in library instructions in the university? All the 496 respondents which represent 100% agree that orientation, classroom tutorials, live demonstration and instruction, Interactive class discussion and Practical. The same 496 respondents indicated that there is non-inclusion of online instruction method in the teaching of use of library, 39.31% or 195 respondents agree that one-on-one mentoring is part of the instruction methods while 301 or 60.69% 0f the respondents disagree. On library tour guide as one of the instruction method, 415 representing 83.67 affirm the use of the method whereas the remaining 16.33% or 81 respondents stand on the negative.

Research Question 3:
What is the level of students' ICT skill before admission into the university?

Table 3: Level of ICT skills before library instruction

S/No	Items	VHE		HE		LE		VLE		None		Mean (x̄)	SD
		No	%	No	%	No	%	No	%	No	%		
1	Can use a computer system	68	13.70	184	37.10	60	12.09	36	7.30	48	9.70	3.38	1.126
2	Can search information in the OPAC	12	2.40	76	15.32	136	27.40	112	22.60	160	32.30	2.33	1.153
3	Can design presentation using the PowerPoint	24	4.80	104	21	124	23.00	72	14.50	172	34.70	2.47	1.291
4	Can set up & use the projector	8	1.80	32	6.50	108	21.80	64	12.90	284	57.30	1.82	1.082
5	Can surf the internet & e-databases	24	4.80	80	16.10	144	29.00	60	12.10	188	37.90	2.38	1.273
6	Can retrieve & download information online	116	23.40	124	25.00	108	21.80	100	20.20	43	9.70	2.81	1.298

Key: VHE=Very High Extent; HE=High Extent; LE=Low Extent; VLE=Very Low Extent, SD=Standard Deviation

Table 3 above shows the various levels of students' ICT skills prior to their admission into the university. A total of 50.80% or 252 respondents indicated that prior to their admission into the university they can to a high extent operate the computer; whereas 96 respondents or 19.39% could at a low extent operate the computer and only 9.70% representing 48 respondents are not computer literate prior to their admission to the university. On using the OPAC, only 88 (17.72%) out of the 496 respondents could prior to their admission into the school, 248 of the respondent had little knowledge of the use of OPAC while a whopping 32.30% (160) respondents were ignorant of it. Prior to coming to the university, only 24(4.80%) of the respondents could to high extent design presentation using PowerPoint, 104 (21%) could at a high extent, 196 could try their hands on it while 172 of the respondents knew not how to design presentation using the PowerPoint.
The data also show that only 8 out of the 496 respondents could at a very high extent set and use the projector; 32 or 6.50% can at a high extent, a total of 172 (34.70%) could at a low extent while 57,30% representing 284 respondents could not. The data also show that 188 respondents do not know how to surf the internet and electronic databases prior to their admission into the school, the remaining 104 (20.90%) could at high extent and 204 (41.70%) could manage to surf the internet. Finally, 240 (48.40%) among the 496 respondents could at a very and high extent retrieve and download information online, whereas 208 (42%) could at very and low extent and only 43 or 9.70% of the respondents could not.

Research Question 4:
What are the accrued benefits after under-going a library instruction course integrated with ICT?

Table 4: Benefits of ICT based library instruction

S/No	Items	VHE		HE		LE		VLE		Cannot		Mean (ẍ)	SD
		No	%	No	%	No	%	No	%	No	%		
1	I can use a computer system	108	21.80	196	39.50	92	18.5	80	16.10	20	4.00	3.40	1.294
2	Can search information in the OPAC	140	28.20	170	34.30	116	23.40	52	10.50	52	10.50	2.79	1.351
3	Can design presentation using the PowerPoint	156	31.50	120	24.20	108	21.80	100	20.20	12	2.40	3.26	1.402
4	Can set up & use the projector	150	30.24	128	25.80	52	10.50	52	10.50	32	6.50	2.63	1.423
5	Can surf the internet & e-databases	156	31.50	100	20.20	116	23.40	76	15.30	48	9.70	3.12	1.353
6	Can retrieve & download information online	140	28.20	202	40.72	100	20.20	44	8.9	10	2.01	3.21	1.433

Key: VHE=Very High Extent; HE=High Extent; LE=Low Extent; VLE=Very Low Extent, SD=Standard Deviation

The above table 4 shows the extent of skills acquired by the students after under-going the course on 'Use of Library' using ICT and other related technologies for instruction. On the use of computers, over 50% of the respondents can perfectly use the computers. In short, an aggregation of the result shows that 304 (61.30%) of the 496 can at very and high extent operate the computer with only 20 or 4% indicating that they cannot operate the computer. 310 representing 62.50% of the respondents can now search for information using the OPAC with only 52 (10.50%) unable. The data further reveal that 276 (55.70%) of the respondents after the course could design presentation using the PowerPoint with only 12 which stands for 2.40% of the entire sample unable. It also revealed that only 32 (6.50%) of the sampled population cannot set up and use the projector after the instruction while 278 or 56.05% can. The result as well shows that 256 (51.70%) of the respondents can in a high extent surf the internet and e-databases with 48 (9.70%) unable and 192 (38.70%) can on a low extent. Approximately, 69% or 342 respondents indicated that they can effectively retrieve and download information online after taking the course, 144 (29.10%) indicated they can but on a low extent whereas 2.01% or 10 respondents indicated otherwise.

Research Question 5:
What are the factors militating against the full integration of ICT with library instruction in the university?

Table 5: Factors militating against ICT integration with library instruction

S/No	Items	SA		A		DA		SDA		Mean (ẍ)	SD
		No	%	No	%	No	%	No	%		
1	Instructional duration too short	84	16.93	168	33.87	100	20.17	144	29.03	2.27	1.169
2	The course module is very complex	144	29.03	88	17.70	120	24.20	144	29.00	2.47	1.192
3	Inadequate ICT facilities in the library	140	28.23	160	32.30	128	25.80	68	13.70	2.62	1.207
4	Poor ICT skills of some library staff	108	21.78	108	21.78	128	21.80	152	30.60	2.35	1.134
5	Inadequate ICT tools (laptops) for students' learning	232	46.80	120	24.20	76	15.3	68	13.70	3.04	1.085
6	Un-conducive learning environment	160	32.30	40	8.10	248	50.00	48	9.70	1.95	.891
7	Hostile attitude of some lecturers	108	21.78	108	21.78	128	25.80	152	30.60	2.35	1.134
8	Ineffective internet services	140	28.20	160	32.30	128	25.80	68	13.70	2.62	1.207
9	The course is boring	24	4.80	60	12.10	184	37.10	228	45.90	1.76	1.849

Key: SA=Strongly Agree; A=Agree; DA=Disagree; SDA=Strongly Disagree, SD=Standard Deviation

Table 5 shows the various challenges militating against the integration of ICT with library instruction as identified by the respondents. The data show that over 50% of the respondents are not contented with the time allotted for the teaching of the course. According to the data, a weighted 252 (50.80%) respondents indicated that the period allotted to library instruction is too short while the remaining

49.20% or 244 respondents are satisfied with the duration. The respondents also identified that inadequate ICT facilities in the library hampers the integration of ICT with library instruction as 300 or 60.30% of the respondents strongly agreed and agreed. Another challenge indicated is inadequate library tools like laptops for students' learning; 352 respondents representing 71% of the sampled population strongly agreed and agreed on this factor. Other challenges identified are: non-conducive learning environment -44.40% or 200 respondents, hostile attitude of some lecturers- 218 (43.56%) respondents and in-effective internet services with 300 (60.30%) respondents strongly agreed and agreed.

DISCUSSION OF FINDINGS

The result of the data analyzed as shown in tables 1 to 5 are indeed the true situation in federal universities in Nigeria as they are funded and supervised/controlled by the same government, Ministry and agencies which are Federal government of Nigeria; Federal Ministry of Education, Tertiary Education Trust Fund (TETFUND) and National University Commission (NUC). The data in table 1 show that the university has integrated good aspect of ICT in library instruction in the following areas: teaching and learning; searching the OPAC; designing PowerPoint for presentation; classroom presentation, surfing the internet and e-databases and retrieving and disseminating information as 496 respondents or 100% agreed to them. The only areas that have not been included are: using the internet for instruction and in lesson note making This development is in line with the call of Apple Computer (2002) and CEO and CEO Forum on Education and Technology (2001) that integration of ICT with teaching helps students to recall information and use it to solve problems as well as enhancing students' knowledge of investigation and enquiry skills and creating curiosity. The underline fact is that the National University Commission (NUC) realizes the importance of this emerging technology to education and information management that in the review of the general studies curricula pulled the use of library from GST101 (Use of English) in which part 2 of it was use of library and made it Use of Library, ICT and study skills as a course of its own under general studies thus making a compulsory course for every 100 level student in Nigerian Federal university and a basic benchmark for graduation. This suggests that our curricula planners are aware of the need to modify educational programmes in response to the demands and needs of the society just as expressed by Bhatti (2010), that the changing nature of higher education worldwide, along with ever increasing growth of library collection, technological development in handling and retrieving information and fundamental changes in the nature of reference services justifies the need for integration of ICT with library instruction in academic institutions.

Table 2 data as analyzed show that orientation; classroom tutorials, live demonstration and instruction as well as Interactive class discussion; Library tour guide, and Practical are effective methods applied in library instructions in federal universities in Nigeria while One-on-one mentoring is not so a popular method of instructing the students as only paltry 195 representing 39.31% of the 496 respondents indicated that one-on-one mentoring is used in library instruction and the other 60.69% or 301 respondents disagreed. The researcher is of the opinion that the students who are engaged in one-on-one mentoring are the privileged few who can boldly work to the lecturers requesting for such personalized service. The above methods are not away from Downard's (1992)

review which shows that library orientation, bibliographic instruction, information skills teaching, online instruction and course-related instruction have been in use. American Libraries Association (2011) on her on part recommended computer lab with instructor and student workstations, projector, printer, access to the Internet as basic instructional tools. While Ezeani and Osuigwe (2015) reveal that frequently used methods were oral presentation and blackboard. The study further showed that computer, Internet, and Power-point received a low usage. Whereas at the University of Vermont Library (2016), library instruction is provided through various methods which include: course-related instruction, individual consultations, graduate student workshops, graduate student orientations, international students' reception, summer programs, Ad-Hoc workshops and community workshops aimed at equipping the students for successful researches. The Association of College and Research Libraries (2016) posits that library instruction should employ active learning strategies and techniques that require learners to develop critical thinking skills in concert with information literacy skills. The Association, therefore, suggested that instructional mode should include reference interview, individual or small group research consultation/appointments, digital or print instruction resources, group instruction in library or campus classrooms, web tutorials or web-based instruction.

It is therefore pertinent to state that inasmuch as federal universities in Nigeria have applied some recommended methods in LI they have not met the Association of College Research Libraries recommendations of 2017 which states inter-alia that Computer laboratory with instructor and students' workstations; projector; printer, and access to the internet should be made available for library instruction, while instructional modes may include: reference interview, digital or print instruction resources; web tutorials or web-based instruction; asynchronous modes of instruction (email, social media) synchronous modes of instruction (chats, audio/video/web conferencing) etc

A comparison of tables 3 and 4 data reveal a striking difference in the ICT skills of the students before and after under-going the one semester course in library instruction integrated with ICT. The result as expressed in table 3 shows the number of students that could operate the computer was at ($\ddot{x}$ = 3.38) with (SD= 1.126) and after the LI the result shows as in table 4 ($\ddot{x}$ = 3.40) with (SD= 1.294); to search information in the OPAC was ($\ddot{x}$ = 2.33) with (SD = 1.153) and after the course ($\ddot{x}$ = 2.79) with (SD = 1.351); ability to design presentation using the PowerPoint ($\ddot{x}$ = 2.47) with (SD = 1.291) after the course ($\ddot{x}$ = 3.26) with (SD = 1.402); ability to set up and use the projector ($\ddot{x}$ = 1.82) with (SD = 1.082) after the course ($\ddot{x}$ = 2.63) with (SD = 1.423). The result on both tables further show that the mean ability to surf the internet and e-databases improves from ($\ddot{x}$ = 2.38) with (SD = 1.273) to ($\ddot{x}$ = 3.12) with (SD = 1.353) after the course and to retrieve & download information online from ($\ddot{x}$ = 2.81) with (SD = 1.298) to ($\ddot{x}$ = 3.21) with (SD = 1.433) after LI integrated with ICT. Figure 4 below expresses this great improvement in the abilities of these students in handling various ICT related tools and resources

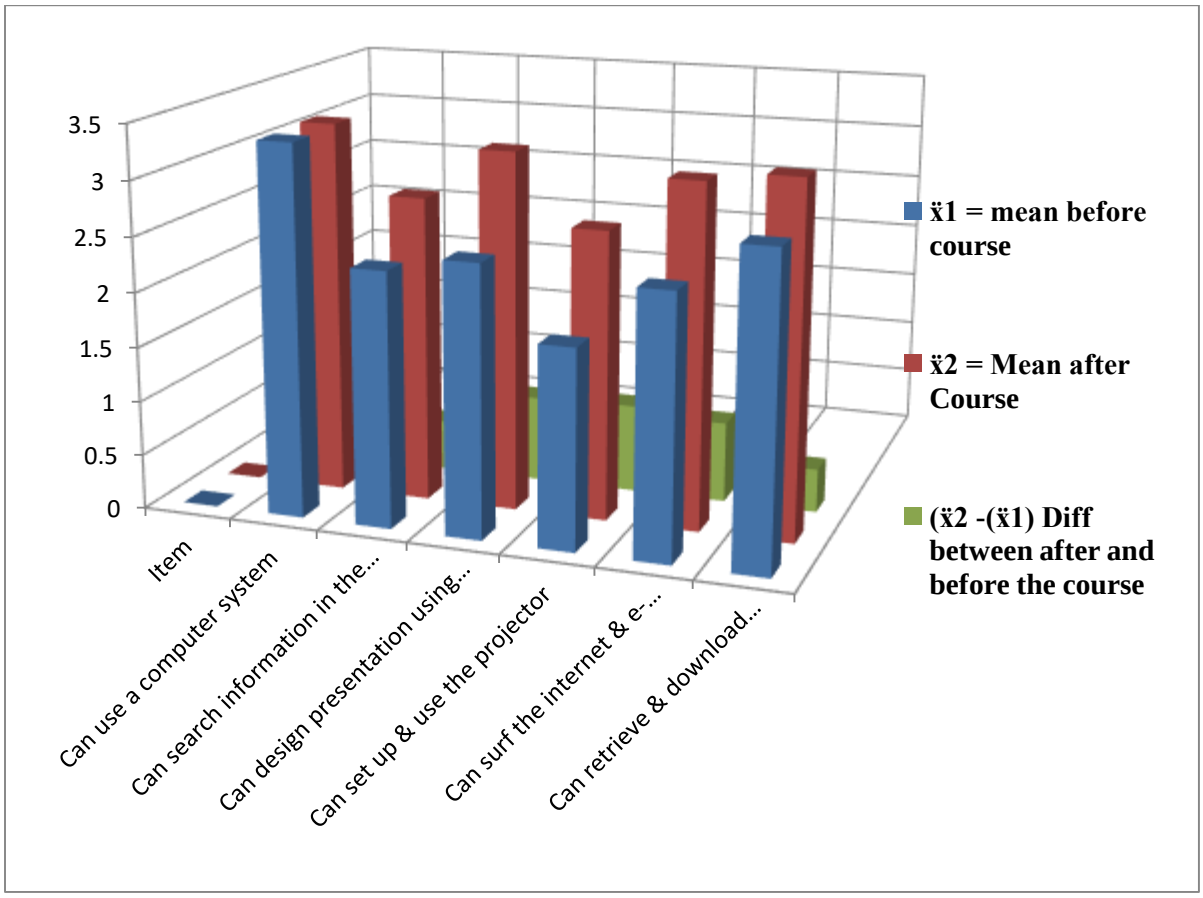

Figure 4: Benefits of LI integrated with ICT

The data in table 4 and simplified in figure 4 above prove that the integration of ICT with library instruction brings about tremendous improvement in students' skills in handling ICT related resources and information in the library which in turn helps them to effectively carryout their lifelong researches. This is indeed, the view expressed by Ololube, Eke, Uzorka and Ekpeyong (2009) and Miima (2014) as they posit that libraries need to imbibe the change of integrating ICT into library instruction as studies have shown that the integration of ICT in learning increases the skill, learning and academic performance of students and staff. While Madukoma, Omeluzor and Ogbuiyi (2013) believe that the integration of ICT into teaching and learning helps students' intellectual ability and skill for accessing and retrieving information as well as constructing a framework for learning. This view was also corroborated by Standish Library (2018) in her projection of the need for LI as she reveals that the primary purpose of library instruction program is to foster and develop students' information literacy skills; specifically the ability to identify, locate, effectively evaluate, and use needed information. The library reveals that these are essential skills needed to succeed academically, but are also necessary for the development of lifelong learning. Library instructions therefore are tailored towards making students evergreen in critical analysis and proper utilization

of available information. Lucas (2017) as he averred that the integration of ICT to library instruction teaches students how to electronically use the library resources and evaluate the research materials they find. Omeluzor (2018) also corroborated the above assertion as he explains that integration of ICT with library instruction increases awareness skill and knowledge of the library users in using electronic information resources effectively. The bottom line is that the inclusion of ICT in library instruction will not only make the students computer literate will also prepare them to effectively and efficiently face the challenges of this era of emerging technology in which every facet of human activities has been digitalized and main information that rules the world today is in paperless form or electronic format.

The result of the findings in table 5 shows that the principal factors militating against the integration of ICT with library instruction include: inadequate ICT tools like laptops for students' learning ($\ddot{x}$ = 3.04); inadequate ICT facilities in the library ($\ddot{x}$ = 2.62); poor and inefficient internet services ($\ddot{x}$ = 2.62), the complex nature of course module ($\ddot{x}$ = 2.47) and poor ICT skills of some library staff ($\ddot{x}$ = 2.35). Other challenges are: hostile attitude of some lecturers ($\ddot{x}$ = 2.35); the time allotted to the course not commensurate with purpose ($\ddot{x}$ = 2.27), non-conduciveness of the learning environment ($\ddot{x}$ = 1.95) and boredom of the course ($\ddot{x}$ = 1.76).

The above factors have also been highlighted by Laleye (2015) when he averred that successful integration of ICT in the school system depends largely on the attitude of teachers towards the role played by modern technologies in teaching and learning. Insofar as the attitude of teachers remains sacrosanct, other factors according to Ololube (2009) are: chronic absence of ICT instructional materials, ineffective policy implementation and lack of other infrastructure and equipment to aid teaching and learning. The above challenges have also been cited by the Commonwealth of Learning International (CLI) 2001 as serious challenges facing higher education in Nigeria on ICT literacy knowledge integration with academic courses and programs.

In association with the above findings, it is pertinent to state that it is not yet a success story when it comes to integration of ICT in library instructions in federal universities in Nigeria as much is still left undesired The analysis of data revealed that integrating ICT into teaching-learning is yet to be accomplished. The data revealed that the participants, both the instructors and students, have positive attitudes towards ICT and considerable knowledge and positive understanding of ICT and its potential in teaching and learning. However, the university fails to provide appropriate ICT-training courses for instructors to develop their technical ICT skills. The above view is also shared by Alemu (2015). And by focusing on the impact of integrating ICT in library instruction methodology the study tend to provides important insights into factors that enhance students' attitude to use of ICT. As a result, the finding will help the development of e-learning quality enhancement and assurance strategies, this assertion is in conformity with what was reported by Gambhir, Wadhwa, and Glover, (2016) thus form the conclusion and recommendations of this study

CONCLUSION AND RECOMMENDATIONS

The outcome of this study buttresses the fact that the integration of ICT with library instructions prepares the students for lifelong learning in an era of digitalization and information explosion that can only be meaningfully accessed electronically. So the inclusion of ICT in library instruction is a better way of making our students independent researchers as they are taught and made to acquire all the needed skills to handle and manage ICT tools and facilities and easily and efficiently access digitalized information sources. This no doubt supports the fact that our future begins with what we do today. ICT has gradually transforms teaching practices while presenting enormous potential at the apprenticeship level. New relations are established between the teacher, his students and computers. Then, the teacher is not perceived as the one who does all the work, but the one who helps students to adopt the objectives of the training programs. The study further reveals that federal universities in Nigeria have made sizeable efforts in integrating ICT with library instruction and the outcome based on this study, is fascinating. All the same, much still need to be done when one puts into consideration the recommendations of the Association of College and Research Libraries (2016) and the challenges identified by the respondents. It is line with these that the researcher makes the following suggestions:

- The Federal Government of Nigeria, Federal Ministry of Education, National University Commission (NUC) and Tertiary Education Trust Fund (TETFUND) and Librarians Registration Council of Nigeria (LRCN) should collaboratively ensure that the curriculum modified for teaching of the course 'Use of Library, ICT and Study Skills (GST103)' is jealously adhered to;
- NUC and TETFUND as agencies responsible for policy formulation and funding of all federal universities should monitor and ensure that all monies released for purchasing of ICT tools and facilities are used for that purpose and where otherwise, the affected university or universities should be sanctioned accordingly and those involved meant to face the law;
- The Librarian in conjunction with the university management should ensure that enough ICT tools and facilities like laptops, projectors, internet facilities, interactive white board among others are adequately provided for the students' learning;
- The library management can go extra mile to develop online instruction applications as to solving the problem of space and un-conducive environment. Let it be known, that the trend is: Computer Based Instruction (CBI) or Computer Based Tutorials (CBTs). The library as an information hub should set the pace in this area by being innovative and creative;
- Stating the obvious, good number of lecturers are terrors in the classroom. This issue of being hostile to students you are hired to mood should be frown at by the university management. In this case, the universities should re-train and orientate lecturers on the need to carry the students along in the course of tutorial; teaching in the 21st century is purely a two-way thing which allows interaction between students and the lecturer. If this step is taken, I believe, it will help solve the problem of boredom complained by some of the respondents;
- University management should make a case in respect of the duration of the course- Use of Library, ICT and Study Skills (GST103/121). A situation whereby a course that is practical oriented is allotted only two (2) hours as teaching period is very absurd. There is the need to raise the teaching period to 3 hours;

- As matter of necessity, the library management should re-train all library staff on the use of ICT tools and facilities as a way of enhancing their skills and also their efficiency in the provision of library services in an era driven by technology,
- The act of mentoring has become a global phenomenon, Librarians and lecturers handling library instruction should as a way of life embrace it as a tool of making their students be the best they can and also project themselves as role models that the students can look up to and build for the future. To this end, both lecturers and librarians should create time away from the official time to interact and encourage the learners on the need of being at their best.

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