Integration of ICT in Library Instruction in Clifford University, Owerrinta, Nigeria: A Study

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ABSTRACT

The study investigated the integration of information communication and technology (ICT) with library instruction (LI) in Clifford University Owerrinta (CLU), Abia State, Nigeria. The study adopted total enumeration method with a population of 124 first year students of 2016/2017 academic session. Two instruments were developed and validated by two professors in the field of Library and Information Science with a reliability result of 0.82 and 0.84 respectively using Cronbach alpha procedure. The instruments were administered face-to-face to the same respondents who registered for the course in the first and second semesters with 100 per cent participation. The finding showed that a change from the traditional method of instruction to an inclusive LI with ICT integration has a significant effect on students' use of ICT tools and related IT facilities in private university. The study recommended that ICT-based courses should be inculcated in LI curriculum; ICT tools such as projector, interactive board, computers, laptops and Internet connection should be made available for use during LI course while librarians should support and instruct students to acquire ICT skill in order to use ICT-based library information resources effectively.

Keywords: Library instruction; ICT integration; Private university; Clifford university; Nigeria.

1. INTRODUCTION

The developments in the use of information and communication technology (ICT) as a tool for learning, teaching and research in universities and libraries have increased the need for a change in the contents and methods of library instruction (LI) in university. All academic libraries undergo episodes of strategic change, reflecting the constant need to adjust direction and momentum to best meet the needs of those they serve[1]. Students' learning, understanding and application of learned objects are the basis of education[2]. Advancement in technology in the handling, processing, accessing, storing, retrieving and dissemination of information in libraries require a holistic approach of instructing library patrons, especially students, by combining the conventional methods with ICTs. Instruction in the use of ICT tools for accessing information sources and services would go a long way in making the library users ICT literate and enable them to access the library information resources with ease. Igbena[3] defined LI also known as user education as a process of making library patrons understand how to effectively and efficiently use the library resources to identify, locate, search, retrieve and exploit information in the library.

The old fashioned method of delivering LI is no longer impacting the library users of 21st century necessitating a change. Change has been found as one of the most difficult thing to apply in an organisation, but a vital ingredient for any business that want to survive and thrive in an increasingly competitive and fast-paced world[4]. Changing the LI methods by integrating ICT will support library users' research ability and help in the development of students' skill in the use of ICT-based library services. Omeluzor[6], *et al.* noted that users of academic libraries including students, staff and faculty may not have any basic skill or knowledge in using electronic information resources and therefore the need for ICT-based LI.

Identifying this need and craving for a change, CLU structured its 'library instruction' programme with ICT fully integrated for all first year students. The programme encompasses a two-unit course taught by the librarians every first and second semester of the first academic year. The course is titled: "Use of Library, Study Skill and ICT I & II, with course codes: General Studies (GST) 112 & 122" respectively. It is a requirement for graduation. In the first semester, the students are introduced to the library information and services. In addition, students are made to know the rules and regulations guiding the use of the library resources and services as obtained in most Nigeria university[6]. Other methods adopted are one-on-one mentoring, orientation and guided tour[5].

In the second semester, the instruction focuses more on practical aspect. It is a 'hands-on-deck' training to ensure that students are impacted with relevant research skills in handling ICT tools in their chosen careers. The approach has been identified in some studies as a feasible option in making students independent researchers and sophisticated learners[7,8,9]

which justify the Association of College Research Libraries recommendations of 2017. It also exemplifies a practice adopted by the Multimedia Educational Resource Learning Online Teaching (MERLOT) in 1995 which was broadened in 2015[10].

2. CLIFFORD UNIVERSITY

Clifford University, Owerrinta is located in Abia State, one of the states in the South-East zone of Nigeria. CLU is among the eight private universities that were granted charter to operate as a privately owned institution with approval by the Federal Ministry of Education and the National Universities Commission on November 22, 2016. It is the second University owned and operated by the Seventh-day Adventist Church in Nigeria. The main campus of the University is at Owerrinta, but academic activities started at its Ihie campus on March 3, 2017 in three faculties namely: (1) Faculty of Humanities, (2) Faculty of Management and Social Sciences and (3) Faculty of Science with 124 students admitted into the three faculties and programmes of the University. More information about CLU can be located at the University's official website via www. clifforduni.edu.ng.

3. LITERATURE REVIEW

Instruction in the use of information sources and services in the library is of essence. Esse[11] advocated the need for the library to intensify its efforts in educating the library users through setting up of additional methods of user education in order to achieve excellence in educational pursuit. According to Okoye[6], hands-on demonstration using workstations, online resources and online databases were not being used. He argued that students were not exposed to the current ICT technologies of accessing and retrieving information resources. Some researchers have promoted the use of ICT in the delivery of library services to the library patrons. For instance, Haliso[12], Ayiah and Kumah[13] are of the opinion that university libraries should embrace information technologies as a tool to deliver service; particularly as traditional library processes and structure are proving unsatisfactory to respond quickly to patrons' requests. Studies have shown that integration of ICT in learning increase the skill, learning and academic performance of students and staff[14, 15]. According to[16], integration of ICT helps students' intellectual ability and skill for accessing and retrieving information as well as constructing a framework for learning. Similarly, Lucas[17] stated that LI teaches students how to use the library resources and to evaluate the research materials they find.

In some advanced countries like the USA, UK and Canada among others, ICT is imbedded in their LI programmes. For instance, the MERLOT 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[10]. Similarly, the instructional method adopted by the Cornell University Library enables students to use the library resources, research methods and advanced tools[18]. At CLU, the LI programme is designed to serve as a template for universities in Nigeria, modelled after the Association of College Research Libraries[19] recommendations, and is

exclusively for the first year students. Ali and Katz[20] suggested in their study that faculty and library staff should work closely in achieving information literacy and ICT literacy training for their students and staff.

Integration of ICT with LI increases awareness, skill and knowledge of the library users in using electronic information resources effectively[16, 21], thereby boosting students' academic performance[22]. In America, the development of 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[23]. Similarly, integration of ICT in teaching help students to recall information and use it to solve problems as well enhance students' knowledge, investigation and inquiry skills and creates curiosity and interest[24, 23]. MERLOT[10] stressed that students need a broad ICT literacy base, and deeper knowledge in a discipline. Bhatti[25] submitted that the changing nature of higher education worldwide, increasing growth of library collections, technological advancements in handling and retrieving of information and basic changes in the nature of reference services justifies the need for integration of ICT with LI in academic institutions. Study has shown that ICT-based LI impacted students' ability to be familiar with various information retrieval tools, access and download information without dependence on the library staff[16].

The integration of ICT with LI in universities in Nigeria is faced with several challenges. Laleye[26] noted that successful integration of educational technology in the school system depends largely on the attitude of teachers towards the role played by modern technologies in teaching and learning. While attitude of teachers remain a critical factor, other factors are chronic absence of ICT instructional materials, ineffective policy implementation and a lack of other resources (infrastructure) to aid teaching and learning. The Commonwealth of Learning International in 2001 saw the issues as serious challenges facing integration of ICT into academic courses and programmes in Nigeria[14]. Be that as it may, integrating ICT into LI is important for better library user education and enhanced user understanding of the library. How ICT integration in LI is done at the Clifford University is the focal point of this research.

4. RESEARCH OBJECTIVES

Five objectives are set to guide this study which are to:
* Know the areas that ICT is integrated with LI in Clifford University,
* Identify the methods used for LI,
* Ascertain the level of students' ICT skill before receiving LI,
* Ascertain the level of students' ICT skill after receiving LI, and
* Identify the challenges of integrating ICT with LI.

5. METHODOLOGY

The study adopted a survey research design using descriptive statistics. The pre-test was held in the first week of the second semester, while post-test was held at the last week. Total enumeration was used since the population cover all the

year one students of 2016/2017 academic session with a total number of 124 as shown in Table 1. Two sets of questionnaire entitled: 'Integration of LI with ICT Questionnaire' (ILIITQ) were developed. It was subjected to both face and content validity. Two professors in the field of Library and Information Science from the Imo State University, Owerri were used, while 20 copies of the questionnaire was administered on 20 students in year one at Imo State University, Owerri. The result of the analysis showed a reliability result of 0.82 and 0.84 respectively using Cronbach alpha procedure. The first instrument is tagged 'Appendix A' with three sections and 19 questions that are relevant to ascertain the level of ICT knowledge and skill acquired by the respondents in research at the library prior to receiving LI. It was administered at the beginning of the course. The second instrument tagged 'Appendix B' has six sections with 43 questions. It measured the level and extent with which the course impacted the students. This was administered at the end of the course. The two instruments were administered face-to-face to the same respondents who registered for the course in the second semester after a brief orientation on how to respond. The response rate was 100 per cent hence all registered students participated and the sets of questionnaire were retrieved. The retrieved copies of the questionnaire were found usable and therefore used for the analysis using Statistical Packages for Social Sciences (SPSS, version 24.0). Results are presented in tables, frequency, percentage and standard deviation.

6. RESULT AND ANALYSIS

Result on Table 1 shows that majority 55 or 44.4 per cent of the respondents are in the Faculty of Science, 33.8 per cent of the respondents are in the Faculty of Humanities while a lower percentage of 21.8 per cent are in the Faculty of Management and Social Sciences. Results by department reveals that 27.4 per cent of the respondents are in the Department of Religious Studies, 14.5 per cent are in the Biochemistry, 13.7 per cent are in the Department of Computer Science and Microbiology respectively while the Department of Mathematics/Statistic has the least number of respondents with 0.8 per cent. On the gender of the respondents, result shows that there are more female with 58.1 per cent than the male with 41.9 per cent. This result shows an increase in the number of female students against the male students which may be the effect of the on-going sensitisation on 'training of the girl child' and constant campaign on women education[26-27].

6.1 Research Objective 1

Know the areas of ICT integration with library instruction in Clifford University.

Result reveals that ICT is integrated in learning and teaching with 96.8 per cent and 100 per cent respectively responding in the affirmative. Also, 86.3 per cent and 83.1 per cent of the respondents also affirmed that searching of OPAC is integrated in LI in the first and second semesters. Result shows that in the second semester, majority 112 or 90.3 per cent of the respondents said designing of power-point is integrated in LI. It further shows 84.7 per cent agreeing that use of projector for presentation is integrated in the second semester while 83.1 per cent of the respondents also said searching the Internet and

Table 1. Demographic information of respondents

Variables	Frequency	Per cent
Faculty		
Humanities	42	33.8
Management and Social Sciences	27	21.8
Science	55	44.4
	124	100.0
Department		
Accounting	4	3.2
Biochemistry	18	14.5
Business Administration	7	5.6
Religious Studies	34	27.4
Computer Science	17	13.7
Economics	8	6.5
English	3	2.4
History & Diplomatic Studies	5	4.0
Mathematics/Statistics	1	0.8
Microbiology	17	13.7
Physics	2	1.6
Political Science	8	6.5
	124	100.0
Gender		
Male	52	41.9
Female	72	58.1
Total	124	100.0

e-databases are part of the instruction given to them. Result also indicates that 86.3 per cent and 80.6 per cent of the respondents said lecture on retrieving and downloading of information with designing of online form are fully integrated into LI. The result indicates that the course content is robust and holistic, covering major areas that can boost the research skill of students.

6.2 Research objective 2

Identify the methods used for library instruction. The respondents indicated the results shown here as the methods commonly adopted among all others for LI: teaching (91.1 %); library tour (83.1 %); practical (91.9 %); one-on-one mentoring (65.3 %); orientation (83.1 %); class presentation (88.7 %); live demonstration (89.5 %); online instruction (87.9 %) and interactive class (94.4 %).

6.3 Research objective 3

Ascertain the level of ICT skill of respondents before receiving library instruction,

Result on Table 2 shows that the respondents are able to use the computer system for research ($\overline{X}$ = 3.38) before attending the LI class. Searching for information on the OPAC ($\overline{X}$ = 2.33), designing of presentation using Microsoft Power-Point

Table 2. Level of ICT skill of respondents before attending the library instruction class

Level of ICT skill	Very high extent	High Extent	Low extent	Very low extent	I can not	Mean	SD
	F (%)	F (%)	F (%)	F (%)	F (%)		
I can use a computer system for research	17(13.7)	46(37.1)	40(32.3)	9(7.3)	12(9.7)	3.38	1.116
I can search information on the Online Public Access Catalogue (OPAC)	3(2.4)	19(15.3)	34(27.4)	28(22.6)	40(32.3)	2.33	1.153
I can design presentation using Microsoft Power-point	6(4.8)	26(21)	31(25)	18(14.5)	43(34.7)	2.47	1.291
I can set up (connect) and use a projector	2(1.6)	8(6.5)	27(21.8)	16(12.9)	71(57.3)	1.82	1.082
I can search for information on the Internet and electronic database using different search techniques	6(4.8)	20(16.1)	36(29)	15(12.1)	47(37.9)	2.38	1.273
I can retrieve and download information from the Internet and online database.	29(23.4)	31(25)	27(21.8)	25(20.2)	12(9.6)	2.81	1.298
I can design online form using Google for questionnaire administration	27(21.8)	35(28.2)	30(24.2)	21(16.9)	11(8.9)	3.29	1.360

Key: SD = Standard deviation

Table 3. Level of ICT skill of respondents after attending library instruction class

Level of ICT skill	Very high extent	High Extent	Low extent	Very low extent	I can not	Mean	SD
	F (%)	F (%)	F (%)	F (%)	F (%)		
I can use a computer system in research	27(21.8)	49(39.5)	23(18.5)	20(16.1)	5(0.4)	3.40	1.294
I can search information on the Online Public Access Catalogue (OPAC)	35(28.2)	34(27.4)	29(23.4)	13(10.5)	13(10.5)	2.79	1.351
I can design presentation using Microsoft Power-point	39(31.5)	30(24.2)	27(21.8)	25(20.2)	3(2.4)	3.26	1.402
I can set up (connect) and use a projector	45(36.3)	32(25.8)	13(10.5)	13(10.5)	8(6.5)	2.63	1.423
I can search for information on the Internet and electronic database using different search techniques	39(31.5)	25(20.2)	29(23.4)	19(15.3)	12(9.7)	3.12	1.353
I can retrieve and download information from the Internet and online database.	35(28.2)	27(21.8)	25(20.2)	11(8.9)	26(21)	3.21	1.433
I can design online form using Google for questionnaire administration	37(29.8)	28(22.6)	28(22.6)	26(21)	5(4.0)	2.50	1.246

Key: SD = Standard deviation

($\overline{X}$ = 2.47) and searching for information on the Internet and electronic database ($\overline{X}$ = 2.38) are at a lower and very lower extent. Before the respondents attended the instruction course, 57.3 per cent of them cannot set up and use a projector ($\overline{X}$ = 1.82), while only 34.7 per cent can use a project at a lower and very lower extent. Result on Table 2 further indicates that 48.4 per cent of the respondents can retrieve and download information and design online form using Google form at a high and very high extent, while the remaining 51.6 per cent can only do that at a lower and very lower extent. This means that before attending the course, some of the respondents already acquired ICT skill in downloading information on the Internet, while most of them did not have adequate ICT skill relevant for researching in a university library. The implication of this result is that non-integration of ICT with LI will negatively affect the development of ICT skills among students in using ICT tools and relevant e-resources in their research work.

6.4 Research objective 4

Ascertain the level of ICT skill of respondents after receiving library instruction.

Table 3 shows that after attending the LI class, there is a significant improvement on the ICT skill of the students. This is in the area of using a computer system in research ($\bar{X}$ = 3.40) designing presentation slides using Microsoft Power-point ($\bar{X}$ = 3.26), and searching for information on the Internet and electronic database using different search techniques ($\bar{X}$ = 3.12), searching information on the OPAC ($\bar{X}$ = 2.79), setting up and using a projector ($\bar{X}$ = 2.63), retrieving and downloading information from the Internet and online database ($\bar{X}$ = 3.21) and designing online form using Google for questionnaire administration ($\bar{X}$ = 2.50).

6.5 Research objective 5

Identify the challenges of integrating ICT with library instruction.

Apart from those challenges verified in literature facing ICT integration in LI, result in this present study shows that the major challenges facing integration of ICT with LI is time duration (inadequate time for the course) with a standard deviation of $\bar{X}$ = 2.27, and lack of personal ICT tools such as laptop for students ($\bar{X}$ = 3.04). It implies that integration of ICT with LI requires adequate time for learning and making relevant ICT facilities especially laptop available for students. Interestingly, result shows that inadequate ICT facilities in the library to accomplish task on schedule ($\bar{X}$ = 2.62), difficulty of understanding the course by students ($\bar{X}$ = 2.47) and inadequate computer skill among librarians ($\bar{X}$ = 2.35) are not challenges. The respondents disagreed that the course is time consuming and boring ($\bar{X}$ = 1.75) and that the learning environment is uncomfortable ($\bar{X}$ = 1.95). It means that the scrutiny, assignments, and quizzes including practical training that were introduced to the respondents are seen as challenge.

7. DISCUSSIONS

A typical representation as shown on Table 2 is a clear picture of the situation facing most undergraduate students in Nigeria universities and some developing countries in the world. Such situation needs pedagogical and systematic approach in order for students in affected nations to acquire skills necessary for learning and researching in facing real life situations. There is indication in this study that ICT was fully integrated in the LI programme at CLU. Findings reveals that most of the already known and adopted methods for LI are also used to instruct the students including teaching, library tour/guide, one-on-one mentoring, orientation, among others. The level of IT skill acquired by students before attending the LI class at CLU as shown on Table 2 was low on average. The mean score on each of the items shows that only a lower percentage of the respondents had ICT skill to a high extent before their admission into the class. This might be those who went for a few months training in computer appreciation before their admission into the University, while a higher percentage had no ICT skill. This means that most of the respondents did not have any formal IT training at their secondary school

level, and therefore require training in IT in their first year in a university to enhance their research skill as submitted by Bhatti[25], Anarki and Babalhavaeji[30].

In order to ascertain the level of ICT skill that the respondents acquired at the entry and ending of the course, a comparative analysis of Tables 2 and 3 is drawn here. The purpose is to know the effect of ICT integration with LI. There is a significant improvement in the level of skill acquired by the respondents as shown in Table 3 compared to their admittance to the class (see Table 2). The result in Table 2 reveals that before admission into the LI class, 50.8 per cent of the respondents to a very high extent and high extent had skill in using computer, whereas in Table 3, it shows that those that could use computer at the end of the course rose to 61.3%. There is a significant improvement in the area of searching, downloading and retrieving of information from the Internet and databases[16].

The finding also shows significant improvement among those who are able to search for information on the OPAC and prepare MS power-point increasing to more than half after attending LI class. There is also evidence of positive effect of integration of ICT with LI in the number of those who could not set up and use projector before attending the course which rose from 8.1 per cent to an overwhelming percentage of 62.1%. Finding also reveals that only 20.8 per cent of the respondents could search for information on the Internet and electronic databases at the beginning of the LI class (see Table 2), but the number increased to 51.7 per cent on Table 3 after attending LI class. In the area of designing online form using Google application, it is clear that a majority of the respondents to a very high extent are able to handle it effectively indicating an improvement at the end of the instruction class as shown on Table 3. Finding reveals that inadequate computer skill among librarians is not a major challenge. This finding is against Nok[31] observation that many staff of university libraries are not computer literate as such found it difficult to cope with the requirements of the electronic age.

8. CONCLUSIONS

It is clear that integration of ICT with LI programme has strong impact on the academic pursuit of students. Integration of ICT with LI is also a boost in learning and understanding search techniques and use of various ICT tools that are necessary for students to function effectively in an ICT-driven environment. It will also make students to be effective in learning, studying and researching which may positively affect their academic performance. Integration of ICT with LI help the library users especially students to become independent researchers in using ICT tools such as computer in their research and accessing electronic information resources on the Internet. Students will be able to develop themselves having undergone training, thereby helping in reducing stress on their teachers and librarians. It is also obvious in this study that integration of ICT with LI help students to develop research skill that may enable them perform better in their chosen careers. Although, the result of the study seemed encouraging, effort is required on the part of the students to apply every learned object.

9. RECOMMENDATIONS

From the result of this study, the following recommendations are drawn:

• Universities in Nigeria and other developing countries should endeavour to redesign their curriculum in order to accommodate ICT-based LI for the benefit of students.

• Relevant ICT facilities such as Internet facilities, projector, interactive board and computers should be made available in classrooms and at the e-library to make teaching and learning of ICT-enabled courses easier.

• The university should endeavour to provide personal laptop computers for students through a subsidised means in order to enhance their ICT skill, learning and research.

• Librarians should create time to support students outside the time allotted for LI to help students who need further assistance. This could also be done by creating an online platform for interactions.

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