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Accessibility of Resources and Delivery Methods as Correlates of Information Literacy Competence of Undergraduates in Southern Nigerian Universities

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Abstract

Information literacy (IL) connotes ability to use information resources from various sources for making decisions and solving problems. The IL competence enables individuals to identify their information needs, locate, retrieve, critically evaluate, synthesise and use information resources ethically, and communicate the results. However, research reports revealed that undergraduate students in Southern Nigerian universities have poor IL competence. This study, therefore, sets out to determine the factors responsible for poor IL competence of the students, by adopting survey research design of correlational type. Multistage sampling was used to select a sample size of 1,967 from a population of 39, 338 final year undergraduate students in nine universities in Southern Nigeria. Researcher-designed questionnaire and IL competence test were used for the data gathering. After validation by experts, the instruments were subjected to test-retest reliability with two weeks interval, and the overall coefficient yielded r = 0.87. The findings reveal that resources with high accessibility were: conducive library environment (75.5%), Internet (60.7%) and IL educators (60.4%). Instructional videos (35.5%) and web 2.0 (31.7%) had poor accessibility; face-to-face lectures in classrooms (78.5%) dominated IL instructions, whereas ICT laboratories (39.8%), power-point presentations (30.8%) and web 2.0/ web-based tutorials (16.7%) were hardly used; students' IL competence level was found to be very poor, with overall mean of 30 %. Strong positive and significant relationships were found among resources accessibility, delivery methods and IL competence, $r_s(1541)=.919, p<0.05$ and $r_s(1541)=.919, p<0.05$, respectively. The study concluded that resources and delivery methods were the factors affecting students' level of IL competence, and recommended adequate provision of requisite resources, adoption and use of web-based IL instructional methods, sensitisation of the students on the essence of IL and development of IL competence framework for IL programmes in Southern Nigerian universities.

Keywords: Information Literacy Competence, Resources, Delivery Methods, Students, Universities

Introduction

Universities are institutions that are responsible for training and development of high level manpower with requisite knowledge, skills and competences. These human resources, which are expected to possess various graduate attributes, are often expected to serve as agents for spearheading and contributing to the growth and development of all sectors of the society's economy. One of the strategic graduate attributes expected from university products in the present knowledge economy is the possession of information literacy (IL), a set of competences required for accessing and using reliable information that is suitable for making decisions and solving problems. The concept of IL was propounded in 1974

when the then President of the United States Information Industry Association, Paul Zurkowski, remarked that people trained in the application of information resources to their work can be called information literates, because they have learnt the skills and techniques of using information resources in moulding information-based solutions to their problems (Uribe-Tirado and Munoz, 2012).

The Association of College and Research Libraries (ACRL) posits that IL is a set of abilities requiring individuals to recognise when information is needed and have the ability to locate, evaluate, and use effectively the needed information (ACRL, 2000). It is a set of skills that enable individuals to identify their information needs, seek out resources to address the needs, retrieve and use the resources appropriately for the satisfaction of their information needs. These individuals operate in different areas of endeavour and diverse sectors of the economy; thus, making IL to have many dimensions. Thus, an information-literate individual, (who could be a civil servant, legal practitioner, medical personnel, teacher, or student, etc.), should be able to complete a problem solving process, which requires him/her to identify the extent of information needed, access the needed information effectively and efficiently, critically evaluate the accessed information and its sources, engage in information synthesis and use the information accordingly for a specific purpose, all in adherence to principles of information ethics.

Since the emergence of the IL concept, many international organisations have been projecting it in all areas of human endeavour. These organisations have descriptions of IL, and formulated different IL frameworks, developed competency standards, performance indicators and expected learning outcomes for the implementation of IL programmes in different environments across the universe. Meanwhile, the major avenue through which undergraduate students of universities acquire and possess IL is through its instructional programmes such as user education, use of library, study skills and information use courses, which are implemented by librarians as educators. IL instructions lead to acquisition of IL competence, with many benefits for students. It improves students' research capacity, scientific writing skills, active participation and quality academic engagements, learning outcomes and general academic achievements, employability after graduation, and development of viable entrepreneurial opportunities after graduation (Thompson and Blankinship, 2015; Anunobi and Ukwuoma, 2016).

For years, librarians in Southern Nigerian universities have been conducting IL instructions for students to enable them acquire IL competence. However, despite librarians' delivery of IL instructions, empirical studies have shown that undergraduate (UG) students in Southern Nigerian universities have poor IL competence (Oyedum, 2010; Nwalo and Oyedum, 2011; Ukpebor and Emojorho, 2012; Ekenna and Mabawonku, 2013; Igwe and Ndubuisi-Okoh, 2014; Ukachi, 2015; Onuoha and Molokwu, 2016). In addition, studies also indicated that many Nigerian graduates are not information literate (Poopola and Okiki, 2013; Jinadu and Kiran, 2016). Poor IL competence impedes academic pursuits, hampers the acquisition of knowledge, retards academic performance, impedes lifelong learning capability, affects access to jobs and performance at work places, as well as influences exploration and development of entrepreneurial opportunities. Thus, poor IL competence implies that there are factors responsible and therefore requires investigation.

Meanwhile, despite the fact that many of the aforementioned studies identified poor IL competence of UG students, they did not investigate the factors associated with it. Through literature review, factors identified and examined were accessibility of resources for IL programmes and delivery methods used during IL instructions. Therefore, this study investigated accessibility of resources and delivery methods as factors that could affect the level of IL competence of UG students in Southern Nigerian universities. Specifically, the study answered and tested the following research questions and hypotheses, respectively:

i. What is the extent of accessibility of resources by UG students in Southern Nigerian universities?

ii. What are the delivery methods used for IL instructions in Southern Nigerian universities?

iii. What is the level of IL competence of UG students in Southern Nigerian universities?

Ho_1. – There is no significant relationship between accessibility of resources and IL competence of UG students in Southern Nigerian universities.

Ho_2. – There is no significant relationship between delivery methods used in IL instructions and IL competence of UG students in Southern Nigerian universities.

Review of Related Literature

Resources – human, material or information, are fundamental in teaching and learning process; in this case, the delivery of IL instructional programmes for inculcating IL competence in undergraduate students. These resources help the teachers to deliver with ease and the learners to learn without stress (Olumorin, Yusuf, Ajidagba and Jekayinfa, 2010). The resources can be classified into learning resources (print-based and digital media), financial and human resources and are expected to be available and accessible for use by the undergraduate students. Moreover, the accessibility of these resources is of essence considering the submission of Osarenren-Osaghae and Irabor (2012) that these resources are more critical in skill-based courses, such as IL. Thus, the acquisition of IL competence requires unhindered access to requisite resources for use by the students. These resources, which are expected to be accessible for utilisation, are to enable the acquisition of IL competence. They include IL educators, instructors and assistants, adequate time allocation for IL instructions, library and information resources on IL, course/learning management system with IL content, ICT laboratories with internet connectivity, library portals, Web 2.0. tools such as YouTube and interactive blogs for answering IL queries, university websites with IL content, and web-based tutorials on IL.

In teaching and learning process, the delivery methods adopted are germane, as they contribute to determine the success or otherwise of the process. The methods of delivering IL instructional programmes, will influence the acquisition of IL competence by the undergraduate students. Be it compartmentalised (separate curriculum) or distributed (course-integrated) approach (Trail and Hadley, 2010), the use of resources are involved through various methods such as orientations, library tours, use of ICT centres, face- to- face lectures in classrooms, hands-on-practices, guidebooks, class discussions, group works, web 2.0 platforms, instructional videos, computer-assisted instructions, PowerPoint presentations, and web-based instruction.

IL programmes are receiving attention in African universities. Ojedokun and Lumande (2005) provided a descriptive analysis of IL programmes at the University of Botswana as credit-bearing courses with full institutional support, which are delivered via the university's WebCT. It is a course management system, and involves lectures, hands-on experience, and assessments. According to them, two of the courses – computing and information skills fundamentals (I and II) are compulsory for all first year students, whereas the other four – information management skills, problem-solving with spreadsheet, web application skills, and multimedia information presentation skills are optional. The IL programme recorded success in the university, but affected other duties in the library, as librarians teaching the courses were also involved in the delivery of other library services.

In four Tanzanian universities, Lwehabura (2008) examined the delivery of IL programmes using 25 librarians and 664 students, and found that the university libraries provide IL training to the students as a stand-alone course with the use of various methods such as lectures, orientation sessions, hands-on practices, and web pages; with findings highlighting a weak assessment and evaluation of the programmes. The IL initiatives in two Ghanaian universities were reported by Dadzie (2009), in which, at the University of Cape Coast, there is a one-credit stand-alone mandatory IL course titled 'Information Retrieval' for all first year students and another on communication skills.

In Morocco, Hassani (2015) documented the IL initiatives of Al Akhawayn University, which is not credit-bearing. In Mohammed VI Library and Multimedia Learning Centre of the University, various methods were adopted by librarians in collaboration with faculty members for implementing IL programmes. The findings indicated that the library-

led IL initiatives in the university could lead to university-wide IL programme, which will integrate IL instructions in the entire curriculum of the university. In Nigeria, Idiodi (2005) compared the standards of practice in developed countries and Nigeria, revealing parallel lines in IL theory and practice between Nigeria and other countries with well-established IL traditions. Rasaki (2008) analysed the IL programmes of three African universities – Federal University of Technology Akure (FUTA), Lagos State University (LASU) and the University of Botswana (UB). The study measured their course outlines against the IL competency standards for higher education by ACRL (2000), and found that FUTA and LASU have compulsory IL courses with one-credit and two-credit units, respectively. However, their course curricular centred on library literacy, whereas that of UB was an exception with contents on IL competences.

Madu (2010) conducted a study on the role of IL in teaching and learning process in a Nigerian university of technology, and identified availability of information resources, qualified IL instructors and adequate training as factors that could facilitate IL. The survey of Nigerian universities by Baro and Zuokemefa (2011) revealed that different IL practices ranging from library tour, orientations sessions to introductory information skills, database searching skills, bibliographic training and use of the library were the IL practices in the universities. The study by Okojie (2012), involving 203 librarians in Nigerian university libraries, showed that librarians' ICT use significantly correlated with their IL skills. In Southwest Nigeria, Adeeko and Ajegbomogun (2013) examined the roles of libraries and librarians in the IL competence of 810 undergraduate students of three universities, and found that emphasis is on library literacy, as only one of the three universities has IL instruction as a credit course; there were poor and inadequate resources for IL instruction, low level of adoption and use of computer-assisted IL instruction, and deficiencies in methods of IL instruction.

The study in twelve university libraries located in South-west, Nigeria by Ukachi (2015) found that the students had poor IL skills, which correlated with their low use of electronic information resources. Similarly, at the University of Ibadan, Nigeria, Adeleke and Emeahara (2016) found a significant but weak correlation between IL and use of electronic resources for academic purposes by postgraduate students. Although the findings revealed that the postgraduate students perceived their IL skills high, their use of electronic information resources was found to be low, which was attributed to lack of awareness of the resources availability and accessibility, as well as poor search techniques.

The justification for this study was therefore hinged on the appraisal of the literature review, which revealed that none of the reviewed studies specifically addressed the effects of resources accessibility and delivery methods on the IL competence level of undergraduate students in Southern Nigerian universities. This is the gap filled by this study.

Methodology

The survey research design of the correlational type was adopted. The population is 39,338, which is the total number of final year undergraduate students in the nine selected Southern Nigerian universities as contained in Table 1. The multistage sampling was adopted in selecting the target group for the study and was carried out in stages, using sampling techniques at each stage. There were 78 universities (18 owned by the Federal, 22 by the states and 38 privately-owned) in Southern Nigeria, out of the 129 universities in Nigeria (NUC, 2013). The first criterion used was the selection of a first generation university from the three categories in each of the three geopolitical zones that made up Southern Nigeria. First generations of the three categories were ascertained as follows: first generation federal universities (1948-1969), first generation state universities (1979-1989), and first generation private universities (1999-2005).

Consequently, three universities (federal, state and private-owned) were purposively selected from each geopolitical zone for fair representation. Meanwhile, deliberate efforts were made not to select more than one university from the same state in a geopolitical zone. South-South geopolitical zone does not have a first generation federal university, so a second generation federal university (established

between 1970 and 1985), i.e. the University of Calabar, established in 1975, was selected and used as a replacement. The University of Benin, established in 1971, which would have been selected in place of University of Calabar, falls into the same Edo State with Igbinedion University, Okada and Benson Idahosa University, Benin, which are the only two first generation private universities in South-South geopolitical zone. So, the choice of the University of Calabar for South-South zone was considered appropriate.

The final selection therefore included University of Nigeria, Nsukka, Enugu State (Federal, South-East); Abia State University, Uturu, Abia State (State, South-East); Madonna University, Okija, Anambra State (Private, South-East); Obafemi Awolowo University, Ile-Ife, Osun State (Federal, South-West); Ekiti State University, Ado-Ekiti, Ekiti State (State, South-West); Covenant University, Canaan Land, Ota, Ogun State (Private, South-West); University of Calabar, Cross River State (Federal, South-South); River State University of Science and Technology, Port Harcourt, River State (State, South-South); and Igbinedion University, Okada, Edo State (Private, South-South). The selection of these first generation universities were considered appropriate for the study because they are mature universities, and should have consolidated very well in their IL programmes for the training of information-literate graduates for the society.

The second criterion in the multistage sampling was that the study focused on the final year undergraduate students in the selected universities; given their past academic experience in courses and programmes on IL instruction or user education offered by librarians in their universities for inculcating IL competence. Majority of these students were in 400, 500 or 600 levels, as the case may be. Thus, they should therefore be able to ascertain the extent of accessibility of resources to them for acquisition of IL competence, the delivery methods used for IL instructions, and their attitude towards IL instructions. Through stratified sampling, 5% were selected from all the faculties of the nine universities that constituted the total number of final year undergraduate students in 2014/2015 academic session. This resulted in 1,967 as the sample size. Details of the sample of the final year undergraduate students in the selected universities are presented in Table 1. The same technique was used by Ukachi (2013) and Abubakar and Adetimirin (2015). The questionnaire and IL competence test were the major instruments used for data collection, which were developed after thorough review of related and relevant literature by the researcher. The questionnaire was drafted using five-point Likert scale for the independent variables, whereas a 20-item test was used to establish the level of IL Competence of the undergraduate students. In order to ascertain the actual IL competence of the undergraduate students in Southern Nigerian universities, a 20-item test tagged 'IL Competence Test' was administered alongside the questionnaire to the respondents.

Each test item had option A – D, with one correct option and other three wrong options. Any test item answered correctly attracted 5 points. This means that the 20-items will result to 100%, if answered correctly. However, any test item with wrong answer attracted zero (0) point. The instruments were validated by experts, and test-retest reliability with Pearson Product Moment Correlation (PPMC) yielded $r = 0.87$ as the average coefficient, which shows that the instruments are dependable for the study. Frequency counts and percentages were used to answer the research questions, whereas Spearman Rank Order Correlation was used to test the two null hypotheses at 0.05 level of significance.

Table 1: Population and Sample of Final Year Undergraduate Students

Geo-Political Zone	University and Year of Establishment	Ownership	Final Year Students in the selected universities (2014 2015) Session	Sample (5%)
South-East	University of Nigeria Nsukka, Enugu State – 1960	Federal	7,683	384
	Abia State University, Uturu, Abia State – 1981	State	5,927	296
	Madonna University Okija, Anambra State – 1999	Private	1,432	72
South-South	University of Calabar, Calabar, Cross River State – 1975	Federal	4,786	239
	Rivers State University of Science and Technology, Port Harcourt, Rivers State – 1979	State	4,395	220
	Igbinedion University, Okada, Edo State – 1999	Private	2,487	124
South-West	Obafemi Awolowo University, Ile-Ile, Osun State – 1962	Federal	5,694	285
	Ekiti State University, Ado-Ekiti, Ekiti State (formerly University of Ado-Ekiti) – 1982	State	4,978	249
	Covenant University Ota, Ogun State – 2002	Private	1,956	98
Total			**39,338**	**1,967**

Data Analysis and Findings

A total of 1,967 copies of the questionnaire were distributed, with 1,736 (88.2%) copies returned, and 1541 (78.3%) found to be properly completed and used for data analysis. This was considered adequate for similar studies are 60% (Dulle, Minish-Majanja and Cloete, 2010). The demographic characteristics of the respondents revealed 782 (51%) females and 759 (495) males; 604 (39%) were from social and management sciences; 485 (32%) from science and technology; and 452 (29%) from humanities and arts. Along university type, 697 (45%) were from federal owned, 613 (40%) state-owned; and 231 (15%) privately-owned.

RQ1: What is the extent of resources accessibility by undergraduate students for acquisition of IL competences in Southern Nigerian universities?

Findings on the extent of resources accessible to undergraduate students for the acquisition of IL competence are presented in Table 2.

Table 2: Extent of Accessibility of Resources and Acquisition of IL Competence (N = 1541)

S/N	Extent of Accessibility of Resources	HNA 1	NA 2	U 3	PA 4	HA 5
1.	Information literacy educators and instructors (librarians)	93	312	205	496	435
		6.0%	20.2%	13.3%	32.2%	28.2%
2.	Teaching Assistants for information literacy programmes	232	167	402	373	367
		15.1%	10.8%	26.1%	24.2%	23.8%
3.	Adequate time allocations for information literacy instructions	110	323	311	485	312
		7.1%	21.0%	20.2%	31.5%	20.2%
4.	Conducive library environment with requisite resources	82	105	190	604	560
		5.3%	6.8%	12.3%	39.2%	36.3%
5.	Course/learning management system with information literacy content	195	313	432	310	291
		12.7%	20.3%	28.0%	20.1%	18.9%
6.	ICT laboratories for information literacy programmes	146	217	309	403	466
		9.5%	14.1%	20.1%	26.2%	30.2%
7.	Internet connectivity and hotspots	120	224	262	386	549
		7.8%	14.5%	17.0%	25.1%	35.6%
8.	University website with content on information literacy	228	288	235	397	393
		14.8%	18.7%	15.2%	25.8%	25.5%
9.	Library portals on information literacy skills	203	230	366	365	377
		13.2%	14.9%	23.8%	23.7%	24.5%
10.	Web-based tutorials and links on IL	273	397	194	415	262
		17.7%	25.8%	12.6%	26.9%	17.0%
11.	Interactive Web 2.0. tools such as blogs for IL queries	302	455	295	308	181
		19.6%	29.5%	19.1%	20.0%	11.7%
12.	Textbooks on information literacy and user education	101	143	251	578	468
		6.6%	9.3%	16.3%	37.5%	30.4%
13.	Workbooks for information literacy programmes	196	252	458	409	226
		12.7%	16.4%	29.7%	26.5%	14.7%
14.	CD-ROM databases on information literacy	221	305	373	378	264
		14.3%	19.8%	24.2%	24.5%	17.1%
15.	Projectors for information literacy instructions	155	260	346	447	333
		10.1%	16.9%	22.5%	29.0%	21.6%
16.	Information literacy policy documents and frameworks	173	379	408	379	202
		11.2%	24.6%	26.5%	24.6%	13.1%
17.	User guides for information literacy programmes	171	328	365	429	248
		11.1%	21.3%	23.7%	27.8%	16.1%
18.	Video tapes and streaming video for IL instructions	323	390	281	286	261
		21.0%	25.3%	18.2%	18.6%	16.9%
19.	Active learning classrooms for IL instructions	122	135	278	561	445
		7.9%	8.8%	18.0%	36.4%	28.9%
20.	Conducive learning environment	90	198	216	591	446
		5.8%	12.8%	14.0%	38.4%	28.9%

Key: HNA – Highly Not Accessible; NA – Not Accessible; U – Undecided;
PA – Partly Accessible; HA – Highly Accessible

Table 2 revealed that most of the resources were accessible to the respondents for the acquisition of IL competence. The resources with high accessibility rate were conducive library environment with requisite resources (75.5%), textbooks on information literacy and user education (67.9%), conducive learning environment (67.3%), active learning classrooms for IL instructions (65.3%), Internet connectivity and hotspots (60.7%), as well as IL educators and instructors (60.4%).

Those with poor accessibility rate include workbooks for IL programmes, user guides for IL programmes, course/learning management system with IL content. Video tapes and streaming video for IL instructions and interactive Web 2.0 tools such as blogs for IL queries, which have poor percentage, were not readily accessible for use. The interactive web 2.0 tools such as blogs and associated social media platforms as well as streaming video are digital-based resources that would have attracted them; thus contributing to their level of competence, if deployed for IL instructions.

RQ 2: What are the delivery methods used for IL instructions in Southern Nigerian universities?

Table 3: Delivery Methods used for IL Instructions in the Universities (N=1541)

S/N	Delivery Methods	HNU 1	NU 2	U 3	OU 4	HU 5
1.	Orientation about available resources and services	181	199	292	506	363
		11.7%	12.9%	18.9%	32.8%	23.6%
2.	Library tour for on-the-spot access to resources	306	263	215	447	310
		19.9%	17.1%	14.0%	29.0%	20.1%
3.	Face-to-face lectures in classrooms	89	123	119	516	694
		5.8%	8.0%	7.7%	33.5%	45.0%
4.	Hands-on-practice in library	133	336	409	377	286
		8.6%	21.8%	26.5%	24.5%	18.6%
5.	Use of ICT laboratories	310	309	309	427	186
		20.1%	20.1%	20.1%	27.7%	12.1%
6.	Guidebooks, workbooks and leaflets	121	374	392	372	282
		7.9%	24.3%	25.4%	24.1%	18.3%
7.	Group tasks and works	125	291	260	509	356
		8.1%	18.9%	16.9%	33.0%	23.1%
8.	Class discussions	129	138	216	608	450
		8.4%	9.0%	14.0%	39.5%	29.2%
9.	Social media and web 2.0 tools for instructions	474	374	233	269	191
		30.8%	24.3%	15.1%	17.5%	12.4%
10.	Power point presentation of lectures	360	468	239	283	191
		23.4%	30.4%	15.5%	18.4%	12.4%
11.	Instructional video and films display	362	434	282	262	201
		23.5%	28.2%	18.3%	17.0%	13.0%
12.	Websites and interactive web-based tutorials	613	485	185	136	122
		39.8%	31.5%	12.0%	8.8%	7.9%
13.	Content display from CD-ROM databases	501	395	410	128	107
		32.5%	25.6%	26.6%	8.3%	6.9%
14.	Take home tests	167	242	323	447	362
		10.8%	15.7%	21.0%	29.0%	23.5%
15.	Practical assignments	150	165	325	457	444
		9.7%	10.7%	21.1%	29.7%	28.8%
16.	Assessment tests and unannounced quizzes	143	194	205	625	374
		9.3%	12.6%	13.3%	40.6%	24.3%
17.	End of semester assessments and examinations	51	127	135	521	707
		3.3%	8.2%	8.8%	33.8%	45.9%
18.	Feedback evaluation forms after lectures	309	308	389	387	148
		20.1%	20.0%	25.2%	25.1%	9.6%
19.	Impact assessment in relation to learning outcomes and students' academic performance	216	261	535	304	225
		14.0%	16.9%	34.7%	19.7%	14.6%
20.	University-wide students' information literacy needs assessment	352	504	344	223	118
		22.8%	32.7%	22.3%	14.5%	7.7%

Key: HNU – Highly Not Used; NU – Not Used; U – Undecided; OA – Occasionally Used; HU – Highly Used

As presented in Table 3, the methods mostly used were face-to-face lectures in classrooms (78.5%) and end of semester assessments and examinations (79.7%). Delivery methods hardly used or not used at all included use of ICT laboratories (39.8%), feedback evaluation forms after lectures (34.7%), PowerPoint presentation of lectures (30.8%), instructional video and films display (30%), social media and web 2.0 tools for instructions (29.9%), university-wide students' IL needs assessment (22.2%), Websites and interactive web-based tutorials (16.7%), and content display from CD-ROM databases (15.2%).

RQ 3: What is the level of IL competence of undergraduate students in Southern Nigerian universities?

Table 4 shows the level of IL competence of the respondents. The table reveals that only in items 12 and 17 did the respondents score up to 42% and 46% respectively, slightly above the 40% pass mark. This implies that the respondents' actual level of IL competence is very low in their scores in all the 20 test items.

Table 4: Level of IL Competence of Undergraduate Students (N =1541)

Item	Correct	% Correct	Wrong	% Wrong
1.	496	32	1045	68
2.	507	33	1034	67
3.	454	29	1087	71
4.	363	24	1178	76
5.	417	27	1124	73
6.	503	33	1038	67
7.	498	32	1043	68
8.	419	27	1122	73
9.	372	24	1169	76
10.	398	26	1143	74
11.	520	34	1021	66
12.	**653**	**42**	888	58
13.	444	29	1097	71
14.	564	37	977	63
15.	414	27	1127	73
16.	372	24	1169	76
17.	**705**	**46**	836	54
18.	448	29	1093	71
19.	523	34	1018	66
20.	319	21	1222	79
MEAN	**469**	**30 %**	**1072**	**70%**

$H0_1$: There is no significant relationship between resources accessibility for acquisition of IL competence and IL competences of undergraduate students in Southern Nigerian universities.

Table 5: Correlation Analysis on Accessibility of Resources for Acquisition of IL Competence and IL Competence of the Respondents

			Resources Accessibility	Info. Literacy Competence
Spearman's rho	Accessibility of Resources	Correlation Coefficient	1.000	.919**
		Sig. (2-tailed)	.	.000
		N	1541	1541
	Info. Literacy Competence	Correlation Coefficient	.919**	1.000
		Sig. (2-tailed)	.000	.
		N	1541	1541

**. Correlation is significant at the 0.05 level (2-tailed

As seen in Table 5, a Spearman Rank-order Correlation test revealed a value of rho=0.919 indicating a very strong and positive correlation between resources accessibility and IL competence of the undergraduate students. The null hypothesis is rejected as there was a significant relationship between resources accessibility and IL competence of undergraduate students, implying that the extent of resources accessible for use by the undergraduate students determines their level of IL competence.

$H0_2$: There is no significant relationship between delivery methods used in IL instructions and IL competences of undergraduate students in Southern Nigerian universities.

Table 6: Correlation Analysis on Delivery Methods Used in IL Instructions and IL Competence of the Respondents

			Delivery Methods	Info. Literacy Competence
Spearman's rho	Delivery Methods	Correlation Coefficient	1.000	.919**
		Sig. (2-tailed)	.	.000
		N	1541	1541
	Info. Literacy Competence	Correlation Coefficient	.919**	1.000
		Sig. (2-tailed)	.000	.
		N	1541	1541

**. Correlation is significant at the 0.05 level (2-tailed)

The output of a Spearman rank-order Correlation test (Table 6) , revealed a value of rho=0.919, indicating a very strong and positive correlation between delivery methods and IL competence of the undergraduate students. The null hypothesis is therefore rejected as there is a significant relationship between delivery methods and IL competence of undergraduate students, implying that the nature of instructional methods used for IL instructions determines the level of IL competence which the undergraduate students acquire in Southern Nigerian universities.

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Discussion of the Findings

The findings revealed that most of the resources were accessible for the acquisition of IL competences, with some not available, particularly the digitally- based. However, the inability of the students to have access to instructional video for IL programmes and interactive Web 2.0. tools such as blogs for IL queries affected their level of IL competence. This finding contradicts the advocacy for information literacy 2.0 by Godwin (2009) and Koltay, Spiranec and Karvalics (2015), thereby presenting the strategic importance of web 2.0 tools as resources for IL instructions that need not be taken for granted in this digital era.

The usual face-to-face lectures in classes, class discussions, assessment tests and quizzes, practical assignments, and end of semester examinations dominated the instructional methods used for IL programmes in the universities. There were also other methods such as orientation about available information resources and services, group tasks, take home tests, hands-on practices, guidebooks, workbooks and leaflets, and tours in the library for on-the-spot access to resources. This concurs with the findings of Kiondo and Msuya (2005) that lectures, hands-on practice and assessments, among others, were the major methods of delivering IL programmes in many universities in Eastern, Central and Southern Africa, but with the exception of Rand Afrikaans University, South Africa and University of Botswana which deliver the programme through the web in virtual learning environment.

Meanwhile, the findings also indicated that most contemporary delivery methods such as visit and use of ICT laboratories, PowerPoint presentation of lectures, instructional videos and films display, social media and Web 2.0 tools for instructions, content display from CD-ROM databases, websites and interactive web-based tutorials were not used as delivery methods during IL instructional programmes in the universities in Southern Nigeria. This is in line with the findings of Baro and Zuokemefa (2011), Baro, Semode and Godfrey (2013), and Adeeko and Ajegbomogun (2013), which reported low use of computer-assisted instructions and poor acceptance of online IL delivery approach as factors affecting IL programmes in Nigerian universities.

The inability to apply delivery methods that involve ICTs, social media tools, websites and interactive web-based tutorials, which are student-centred, affected the level of IL competence of the undergraduate students, as corroborated by Oyibe and Nnamani (2014) whose findings revealed that students prefer learner-centred instructional methods that involve their active participation in the teaching and learning process. On the actual IL competence of the respondents, using a 20-item test, results established poor and low IL competence, in line with the reports of such earlier studies as those of Igwe and Ndubuisi-Okoh (2014), Ukachi (2015) and Onuoha and Molokwu (2016), which provided background to the problem of the study in Southern Nigeria.

Furthermore, this finding of poor IL competence among students justifies the argument of Badke (2008) that the nature of IL programmes within higher education is failing to meet its intentions of becoming credible within the academic community and pervasive within university programmes. That is why Aina (2014) lamented that core library and information services, including IL programmes, are either rarely provided to users or of low quality when

provided in Nigerian universities. The test of significance showed that there is a significant relationship between resources accessibility and IL competence, implying that the extent of resources accessible and used by the undergraduate students will determine their level of IL competence. This finding agrees with that of Gunn and Miree (2012) at Oakland University, Michigan, USA, where easily accessible resources such as online IL tutorials, instructional videos, active learning exercises, and content of IL competency standards for higher education were combined for IL programme, and resulted in imparting the skills effectively in students. The report of Ogunniyi and Nwalo (2015), where the extent of resources accessed and utilised correlated with the level of academic achievement of undergraduate students of LIS schools in Southern Nigerian universities, also supports this finding.

There was also a very strong, positive and significant relationship between delivery methods used in IL instructions and IL competence of the undergraduate students, showing that the delivery methods adopted during IL instructions will determine the level of IL competence to be acquired. This positions the delivery method as a determinant factor of the IL competence level of the students. This finding is in line with that of Arinde (2010), which revealed that there is a significant relationship between computer-aided instructions and academic performance of students. This situation is not different from the report of Shaari, Sidek and Badzri (2012), at the University of Kebangsaan, Malaysia, where a developed module of IL course, with evaluated content to ascertain the learning outcome and students' academic performance, achieved over 75% students' satisfaction in acquiring the required IL skills.

Conclusion and Recommendations

This study concluded that the accessibility of resources for use and delivery methods adopted during IL instructions are factors responsible for poor level of IL competence of undergraduate students in Southern Nigerian universities. The study therefore recommended that:

- Since resources are central to all educational programmes, there is need for the universities to ensure adequate provision of requisite, relevant and 21st century-based resources for IL programme and acquisition of IL competence by the students.
- The universities studied should strengthen their online pedagogic facilities to accommodate effective IL instructions, consider adoption and use of web-based IL instructional methods for the delivery and engage the services of more IL educators.
- The university authorities in Southern Nigeria should collaborate with the National Universities Commission (NUC) to integrate feedback evaluation, impact assessment, and students' IL needs assessment and measurement techniques to ascertain that IL programmes achieve pre-determined purpose among undergraduate students.
- The universities studied should establish a directorate tagged Centre for Information Literacy Education (CILED), for coordination of IL programmes, to be strategically placed under the office of the Vice-Chancellor, but be expected to collaborate with the university library in executing its functions.

1. The NUC should develop IL competency standards for implementation of IL programmes in Nigerian universities.

References

Abubakar, D. and Adetimirin, A. (2015). Influence of Computer Literacy on Postgraduates' Use of E-Resources in Nigerian University Libraries. *Library Philosophy and Practice*. Retrieved May 21 2016. From http//digitalcommon.unl.ed/libphilprac/1207

Adeleke, D.S. and Emeahara, E.N. (2016). Relationship between Information Literacy And Use of Electronic Information Resources By Postgraduate Students of University of Ibadan, Nigeria. *Library Philosophy and Practice (E-Journal)*. Retrieved May 21, 2016. from http://digitalcommons.unl.edu/libphilprac/

Aina, L.O. (2014). The Current Practice of Librarianship: A Journey to Extinction of the Profession in Nigeria. *Lecture Delivered on September 4, 2014 at the 8th Jire Olanlokun Memorial Lecture at the Julius Berger Hall, University of Lagos, Nigeria* .

Anunobi, C.V. and Ukwuoma, S. (2016). Information Literacy in Nigerian Universities: Trends,

Challenges and Opportunities. *New Library World*, 117 (5 and 6), 343 – 359.

Arinde, M.R. (2010). *Educational Services, Teacher Quality and Students' Academic Performance in Public Senior Secondary Schools, North-Central Zone, Nigeria*. Phd Thesis, Faculty of Education, University of Ilorin, Ilorin, Nigeria.

Babalola, Y.T. (2012). Awareness and Incidence of Plagiarism among Undergraduates in a Nigerian Private University. *African Journal of Library, Archival and Information Science*, 22 (1), 53 – 60.

Badke, W. (2008) A Rationale for Information Literacy as a Credit-Bearing Discipline. *Journal of Information Literacy*, 2(1). Retrieved August 17, 2012. From: *http://jil.lboro.ac.uk/ojs/index.php/jil/article/view/ra-V2-I1-2008-1*

Baro, E. E., Semode, F. D. and Godfrey, V. Z. (2013). Information Literacy Programmes in University Libraries: A Case Study. *Libri,* 63 (4), 282 – 294.

Dulle, F. W., Minish-Majanja, M. K. and Cloete, L. M. (2010). Factors Influencing the Adoption of Open Access Scholarly Communication in Tanzanian Public Universities. *Paper Presented at 76th IFLA General Conference and Assembly, 10th – 15th Aug. at Gothenburg Sweden.*

Ekenna, M. M. and Mabawonku, I. (2013). Information Retrieval Skills and Use of Library Electronic Resources by University Undergraduate Students in Nigeria. *Information and Knowledge Management*, 3 (9), 6 – 14.

Gunn, M. and Miree, C. E. (2012). Business Information Literacy Teaching at Different Academic Levels: An Exploration of Skills and Implications for Instructional Design. *Journal of Information Literacy*, 6 (1), 18 – 34. DOI: http://dx.doi.org/10.11645/6.1.1671.

Idiodi, E. A. (2005). Approaches to Information Literacy Acquisition in Nigeria. *Library Review*, 54 (4), 223 – 230.

Igwe, K. N. and Ndubuisi-Okoh, E .O. (2014). Information Literacy Awareness, Perception and Skills Assessment Using Students of National Open University in Southwest Nigeria. *International Journal of Digital Literacy and Digital Competence*, 5 (3), 15 – 29.

Ilogho, J. E. and Nkiko, C. (2014). Information Literacy and Search Skills of Students in Five Private Universities in Ogun State, Nigeria. *Library Philosophy and Practice (Ejournal)* Retrieved January 30, 2014 From. Http://Digitalcommon. Unl.Edu/Libphilprac/1040.

Jinadu, I. and Kiran, K. (2016). Practices Leading to Information Literacy Development among Nigerian Undergraduates. *Malaysian Journal of Library and Information Science*, 21 (1), 109 – 121.

Kiondo, E. and Msuya, J. (Eds.) (2005). *User Information Literacy: Case Studies From University Library Programmes in the SCANUL-ECS Region*. Oxford: INASP and SCANUL-ECS.

Koltay, T., Spiranec, S. and Karvalics, L. Z. (2015). Perspectives on the Shift of Information Literacy towards Research 2.0. *The Journal of Academic Librarianship*, 41 (1), 87 – 93.

Lwehabura, M. J. F. (2008). Information Literacy Delivery in Tanzanian Universities: An Examination of its Effectiveness. *African Journal of Library, Archival and Information Science,* 18 (2), 157 – 168.

Lwoga, E .T. (2013). Faculty Perceptions and Practices in Health Sciences Information Instruction in Tanzania. *Library Philosophy and Practice.* Retrieved January 8, 2014 From http://digitalcommons.unl..libphilprac/1017.

Madu, E. C. (2010). Teaching of Information Literacy Skills in Nigerian Universities: A Theoretical and Practical Perspectives from Federal University Minna, Nigeria. *Annals of Modern Education*, 2 (1), 36 – 42.

Nwalo, K. I. N. and Oyedum, G. U. (2011). Relationship of Information Literacy to Undergraduate Students Use of University Libraries. *Library Progress International*, 31 (2), 347 – 362.

Ogunniyi, S. O. and Nwalo, K. I. N. (2015). Utilisation of Resources as Correlates of Undergraduates' Academic Achievement in Cataloguing and Classification in Library Schools in Southern Nigeria. *Paper Presented at the European Conference on Education, Organized by the International Academic Forum, at Brighton, United Kingdom.*

Okojie, V. O. (2012). *Information Literacy Skills and Use of Information and Communication Technologies by Librarians in Nigerian University Libraries*. PhD Thesis, Faculty of Education, Ahmadu Bello University Zaria, Nigeria.

Olumorin, C. O., Yusuf, A., Ajidagba, U. .A., and Jekayinfa, A. A. (2010). Development of Instructional Materials From Local Resources for Art-Based Courses. *Asian Journal of Information Technology*, 9 (2), 107 – 110.

Onuoha, U. D. and Molokwu, E. U. (2016). Information Literacy Competence of Students in Colleges of Agriculture, South-West, Nigeria. *Journal of Applied Information Science and Technology*, 9 (1), 153 – 161.

Osarenren-Osaghae, R .I. and Irabor, Q. O. (2012). Availability and Adequacy of Human and Material Resources for the Teaching and Learning of Skill-Based Courses in Nigerian Public Universities. *Journal of Sociology and Social Anthropology*, 3 (1), 15 – 27.

Oyedum, G. U. (2010). Effects Of Information Literacy on Use of Library by Undergraduate

Students in Federal Universities in Nigeria. *Nigerbiblios*, 21 (1and2), 52 – 66.

Oyibe, O. A. and Nnamani, S. C. (2014). An Investigation into Students' Preference of Instructional Methods Used in Teaching and Learning of Social Studies. *International Journal of Learning and Development*, 5 (1), 1 – 9.

Popoola, S. O. and Okiki, O .C. (2013). Information Availability and Utilization as Determinants of Creativity of Managers in Commercial Banks in Nigeria. *Information and Knowledge Management*, 3 (8), 22 – 34.

Rasaki, O. E. (2008). A Comparative Study of Credit Earning Information Literacy Skills

Courses on Three African Universities. *Library Philosophy and Practice*.

Retrieved May 06, 2010. From http://www.unlib. unl. edu/lpp/rasaki.

Shaari, L. R. M., Sidek, H. F. and Badzri, S. (2012). Information Skills Course at UKM Library. *Procedia: Social and Behavioural Sciences*, 59, 370 – 375.

Thompson, L. and Blankinship, L .N. (2015). Teaching Information Literacy Skills to Sophomore-Level Biology Majors. *Journal of Microbiology and Biology Education*, 16 (1), 29 – 33.

Trail, M. A., and Hadley, A. (2010). Assessing the Integration of Information Literacy into a Hybrid Course Using Screencast. *MERLOT Journal of Online Learning and Teaching*, 6 (3), 647 – 654.

Ukachi, N. B. (2013). *Accessibility and Students' Variables as Correlates of the Use of Electronic Information Resources in University Libraries in South-West, Nigeria*.

Phd Thesis, Department of Library and Information Science, University of Nigeria, Nsukka.

Ukachi, N.B. (2015). Information Literacy of Students as a Correlate of their Use of Electronic Resources in University Libraries in Nigeria. *The Electronic Library*, 33 (3), 486 – 501.

Ukpebor, C. O. and Emojorho, D. (2012). Information Literacy Skills: A Survey of the Transition of Students from Secondary to University Education in Edo State, Nigeria. *Library Philosophy and Practice.* Retrieved September 20, 2014. From http://digitalcommons.unl. edu/libphilprac/824/.

Uribe-Tirado, A. and Munoz, W. C. (2012). Information Literacy Competency Standards for Higher Education and their Correlation with the Cycle of Knowledge Generation. *Liber Quarterly*, 22 (3), 213 – 239.

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