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Information Literacy Competence of Librarians in South West Nigerian University Libraries

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Abstract

The purpose of this study was to determine librarians' information literacy skills and provide reliable data to support the study recommendations. The study used the survey approach. The sampling frame is the National Universities Commission approved list of universities in Nigeria as at August, 2012. Sampling of participating universities in the Southwest was by convenience sampling, a non-probability sampling technique, while that for the study participants (librarians) was census. Except for their understanding of the role of natural language, reference citation, encyclopaedias, periodicals and search engines, the study revealed weaknesses in librarians' knowledge of each of the steps in the information research process, from identifying the concepts to using the results. This suggests that librarians are clearly deficient in the essential skills required for successful information research process. The study thus confirms the perceived negative impression of librarians' information literacy competency. The practical implication is that library users, which include the students, will not be able to receive proper instruction in information literacy skills and may therefore not be information literate. This will affect their effectiveness, efficiency and productivity at work after graduation. The social implication is that their graduates and other library users may not be able to function effectively in today's information society. To remedy the deficiencies, the study recommends regular training and re-training through professional development workshops, librarians' access to regular use of the Internet, and the review of the curriculum of the library schools to incorporate the teaching of Information Literacy with particular emphasis on the practical components.

Keywords
Information Literacy, Information Literacy Competence, Nigerian University Libraries, University Libraries

Introduction

With the application of information and communication technologies (ICTs) to information production, processing, packaging and dissemination; teaching, learning and research are taking on new shapes and boundaries particularly with the advent of the Internet. The impact has particularly changed how librarians access, manage and disseminate information. It has also changed their roles within the workplace and opened up an entirely new information arena within which to apply their unique information skills. As a consequence, what started in libraries as 'library orientation' grew to be 'library instruction' and 'bibliographic instruction' and finally became 'information literacy', which involves teaching users how to access, understand and use information effectively.

Williams and Zald (1997) note that s, tudents often lack the skills necessary to succeed in this rapidly changing information environment, and faculty needs training and support to make use of new technologies for effective teaching and learning. Thus, the current information environment provides an opportunity for librarians to play a key role in the evolution of an integrated information literacy curriculum/process. Their role is to empower users

by helping to develop their information skills so that they may be able to find, evaluate and use information effectively. Indeed, according to Wilson (2003), requests to librarians for information literacy training have reached the proportions of an educational epidemic. The role of librarians as classroom teachers has steadily expanded, boosting the teaching responsibilities of librarians to new heights. They are uniquely situated according to Williams and Zald, to create and foster new ways of teaching and learning information technology.

Statement of the Problem

Library users/customers have sometimes questioned the information literacy competence of librarians in some Nigerian university libraries. They have the impression that some librarians know very little, or nothing at all, about basic library research. With no tangible proof, however, the observations of these users/customers remain hypothetical. Although the study by Okojie (2012) on the information literacy skills and use of information and communication technologies by librarians in Nigerian university libraries reports average use of ICT in the librarian's work and high positive perception of information literacy skills, it is worth noting that perception of skill is not the same as possession/acquisition. Likewise, skill in the use of ICT is not the same as possession of information skill.

Julien (2002) cited in Issa (2009) was of the view that if an individual is information literate, he/she must be able to efficiently and effectively use information sources, and should possess specific online searching skills, which include the ability to select appropriate search terminology, construct a logical search strategy, and evaluate information appropriately. Andretta and Debowski cited in Leong (2006) were also of the view that the practice of information literacy involves not only the development of digital skills but also including higher level analytical and evaluative skills needed to engage effectively with the formulations of complex ideas.

By definition, Information literacy is closely related to the research process. While the research process follows the following steps: defining the information need, formulating the research topic and identifying the concepts, developing a search strategy (involving concept mapping and formulation of search statement, selection of document types, selection of search tools and refining of search statement), executing the search, and using the results (involving locating and retrieving documents, evaluating information and citing sources), information literacy emphasises the set of abilities requiring individuals to recognise when information is needed and have the ability to: locate, access, critically evaluate, communicate and use the information effectively. Information literacy encourages critical thinking and reflection, both of which are considered as the hallmark of library research.

However, because of the complexities of the current information environment, some schools of thought now consider the concept of information literacy a broad form of literacy, subsuming all the skill-based literacies such as computer literacy, information technology literacy, library skills, information skills and learning to learn (Abubakar and Isyaku, 2012). Information literacy programmes do a great deal more than tell how to use the library. Information literacy according to Wooliscroft (1997) is vitally tied to the strategic value and use of information.

The goal of this study is to verify whether the users/customers' impressions have validity and to determine whether these librarians have the ability to retrieve, process, evaluate and use information notwithstanding the media. The study is a replication of a similar study conducted in 2003 on the in-coming first-year undergraduates entering Quebec universities in Canada. The author's assumption is that if librarians could answer the questions correctly, they can be considered to possess information literacy skills and therefore can effectively teach information literacy skills to both staff and students (especially the undergraduates) in their universities.

Conceptual Framework

The study is situated within the conceptual framework of *Information Literacy Competency Standards for Higher Education* as done by Mittermeyer and Quirion (2003) in their study of information literacy of the incoming first-year undergraduates in Quebec. On the basis of these standards, a number of research skills essential to the success of a search were identified. The skills were then linked to

Table 1: Themes Adapted for the Study

Themes	Variables	Question Number
Theme 1. Concept Identification	Significant words	8
	Significant words	12
	Significant words	17
Theme 2. Search Strategy	Translation in keywords	6
	Boolean operator "OR"	13
	Search indexes	15
	Controlled vocabulary	16
	Boolean operator "AND"	20
Theme 3. Document types	Encyclopaedias	7
	Periodicals	19
	Scholarly journals	24
Theme 4. Search tools	Databases	5
	Search engines	10
	Library catalogues	11
	Metasearch engines	18
	Library catalogues	21
Theme 5. Use of results	Reading citations	9
	Bibliographies	14
	Evaluation of information (Internet)	22
	Ethical use of information	23

Source: Mittermeyer and Quirion (2003) Information Literacy Competency Standards for Higher Education

variables, which their study grouped under five themes as provided in table 1 below.

Research Methodology

The author decided to use the survey as a means of collecting data on information literacy of practising librarians in some Southwest Nigerian Universities. It adapted Mittermeyer and Quirion's study questionnaire consisting of 20 reviewed and revised questions. It is therefore a replication of the study, but on the librarians rather than students.

A few changes were made to the questions to reflect the context of the study/environment. The questionnaire was pre-tested at Bowen University, Iwo, Osun State. The results were analysed and each question was reviewed, making necessary changes before finalising the questionnaire. The questionnaire was administered from the 1st of November, 2012 through the 31st of May, 2013.

The sampling frame is the National Universities Commission approved list of Universities in Nigeria at http://www.nuc.edu.ng/pages/universities.asp?ty=1&order=inst_name. As at August, 2012, there were 37 each of federal, state and private universities, that is, a total of 111 universities in Nigeria. Of these, there are 7 federal, 8 state and 19 private universities in the Southwest, a total of 34 universities, some of them, newly established. Convenience sampling, a non-probability sampling technique, was used to select the participating universities. Seven (4 Federal, 2 States and 1 Private Universities) of the 34 universities (i.e. 17.6%) (table

Table 2:Distribution of Respondents according to Universitiese

	Library		Sample	Questionnaires received and analysed	Response Rate (%)
1.	University of Agriculture, Abeokuta, Ogun State	Federal	14	12	85.7%
2.	Obafemi Awolowo University, Ile-Ife, Osun State	Federal	14	14	100%
3.	University of Ibadan, Ibadan, Oyo State	Federal	21	16	76.2%
4.	Federal University of Technology, Akure, Ondo State	Federal	14	5	35.7%
5.	Osun State University, Osogbo, Osun state	State	10	4	40%
6.	Tai Solarin University of Education, Ijebu-Ode, Ogun State	State	10	8	80%
7.	Lead City University, Ibadan, Oyo State	Private	6	6	100%
	Total		**89**	**65**	**73%**

2) were selected because of their convenient accessibility and proximity to the researcher and are considered adequate to provide satisfactory results.

The sampling of study participants (librarians) was census. To encourage librarians to complete the questionnaire, a personal approach was adopted. The author made personal contacts with known individuals in each institution to assist in persuading librarians to complete the questionnaires. This resulted in the overall response rate of 73% considered quite high. The completed questionnaire was analysed using the Statistical Package for the Social Sciences (SPSS). The questionnaire contains multiple choice questions. Some of the questions require respondents to select more than one correct option. However, where respondents chose more than one option in a single option question or did not choose any of the options; the conclusion was that the respondent did not know the correct answer.

The Findings

Background Information of the Respondents

Of the 65 respondents, 47 (72.3%) were from the four federal universities, 12 (18.5%) from the two state universities and 6 (9.2%) from the only private university. Eleven of the respondents (16.9%) graduated before 1990 while 46 (70.8%) graduated during the 1990s (table 3) when according to

Table 3: Category of University and Year of Graduation of Respondents

University Category	Frequency	%	Year of Graduation	Frequency.	%
Federal Univ.	47	72.3	< 1990	11	16.9
State Univ.	12	18.5	> 1990	46	70.8
Private	6	9.2	No response	8	12.3
Total	**65**	**100**	**Total**	**65**	**100**

Adegbore (2010), serious application of information technology (IT) to library processes began in Nigerian university libraries.

Table 4 shows that thirty-two (49.2%) of the respondents have been in librarianship profession for more than six years during which they are expected to have familiarised themselves with the skills requirement for effective services delivery. Sixty (92.3%) of the respondents and above had masters degree as their highest qualification,

Table 4: Highest Qualification and Year of Employment as Librarian

Highest Qualification	Response Distr.	%	Year of Employment as Librarian	Response Distr.	%
Ph.D	2	3.1	1-5 yrs	33	50.8
MLS/MLIS/M. Inf. Sc.	58	89.2	6-10 yrs	16	24.6
BLS/BLIS	4	6.2	11-15 yrs	8	12.3
No response	1	1.5	16-20 yrs.	5	7.7
Total	**65**	**100**	>20 yrs.	3	4.6
			Total	**65**	**100**

Eleven respondents out of a total of 65 or 17% wrote comments after the statement "Your comments are welcome". While some expressed appreciation, a few considered the questionnaire a set of difficult, imprecise, long and technical examination questions thus failing to appreciate the importance of the exercise. The comments are as follow:

"Why are you subjecting us to another examination? Anyway, it is good for our profession. It helps to refresh my brain."

"This is a well thought out questionnaire.".

"Is this an examination or questionnaire?"

"These are examination questions"

"I'm just wondering if this was a profession competency test".

"I think information literacy skill should be taken back to Nigerian library school curricula. Workshop on this subject can only build on background knowledge and not on no-idea, most especially as many attend workshops to get per diem."

"The questionnaire is too long and a little technical for comprehension."

"This questionnaire is not simple and precise. Questionnaire should not be difficult to fill or complete. Subsequent one should be checkmated."

"Quite an interesting research. Information literacy education is long overdue."

"This research is no doubt going to be very informative and educative if pursued to a logical conclusion."

"The onus is on Library schools to emphasise IT skills and information literacy and search strategy skills in their curriculum. It is still being treated superficially in Library schools."

The above comments are a clear departure from comments received from students to which the same questionnaire was administered at Quebec. Some comments received from the students are as follow:

"Thank you for taking an interest in our academic success."

"It's a great idea! I find fantastic your real interest in our success. Thank you!"

"This is an excellent initiative by the University to care about students' research skills. Thank you!"

"I couldn't answer half of the questions asked. Good idea to do a survey to be able to help us!"

"Good to see that you are interested in young people's difficulties with research and that you try to help. Thanks very much."

"Excellent idea to do this survey because it isn't easy to find things in a library."

"This is a great idea. It made me realize how little I know about research! Thank you."

suggesting that they have received instruction in library research process.

"It's encouraging to see that some people have the students' interest at heart for research and learning." (Source: Mittermeyer and Quirion, (2003). "

Responses to Questions

Since the questions have been grouped by theme, the purpose, the results and their interpretation, as well as the corresponding step in the research process, are given for each. The correct answer or best practice is as identified in the Mittermeyer and Quirion study and indicated in bold print.

Theme 1: Concept Identification

Variable: Significant Words

Question 8: You must use a psychology database to find information on "The effect of family relations on the academic

Table 5: Significant Words 1

Options	Response Distribution	Percentage
a) **Family relations, academic results, primary school**	**22**	**33.8**
b) Family relations, academic results	7	10.8
c) Effect, family relations, academic results	1	1.5
d) Effect, family relations, academic results, primary school	29	44.6
e) Others (please specify)	1	1.5
f) Don't know	3	4.6
No response	2	3.1
Total	65	100

The purpose of this question was to find out how respondents select concepts in their search strategy. It is to find out whether they hold to the wording of the statement of the problem, able to distinguish between significant terms and non-significant or meaningless words, and whether they include all the appropriate terms.

Analysis revealed that about one-third of the respondents (33.8%) chose the best answer (a) (table 5), the option which includes the three concepts in the original question. Nearly half (44.6%) however, did not appear to be able to distinguish between significant and non-significant terms when formulating a search statement as they selected options which include the non-significant term, "effect".

Question 12: Using Yahoo search engine to search for documents on "The depletion of the ozone layer and the impact on health", I use the words:

Table 6: Significant Words 2

Options	Response Distribution	Percentage
a) Impact, depletion, ozone layer, health	35	53.8
b) Ozone layer, health	**20**	**30.8**
c) Ozone layer	4	6.2
d) Skin cancer, ozone layer	-	-
e) Others (please, specify)	-	-
f) Don't know	5	7.7
No response	1	1.5
Total	65	100

results of primary school students". Which combination of words will you use?

The purpose was as for question 8. The inclusion of non-significant words reduces the number of results obtained, while the omission of significant words renders the strategy too broad and will retrieve irrelevant results.

Analysis of responses to this question again revealed that only one-third of respondents were able to recognise significant words by selecting the option (b) (table 6). A greater number of respondents (69.2%) did not choose the most efficient strategy or admitted that they did not know the answer. Those who selected (a) which includes the non-significant term "impact" selected an overly restrictive search strategy. The same can be said of those who selected (d), since cancer is only one of the many effects of ozone layer depletion. Those who selected (c), selected a strategy that is too broad.

Question 17: You must make an oral presentation on the topic "*Measures currently used across the country to decrease the damage to the natural environment.*" Among the following choices, which one best describes the ideas contained in your subject?

Table 7: Significant Words 3

Options	Response Distribution	Percentage
a) Damage to the natural environment, Nigeria	7	10.8
b) Measures currently used, country	4	6.2
c) Damage, environment, measures currently used	15	23.1
d) Protective measures, environment, Nigeria	**27**	**41.5**
e) Others (please, specify)	1	1.5
f) Don't know	7	10.8
No response	4	6.2
Total	65	100

In addition to our goal in questions 8 and 12, the goal here was to find out if librarians are able to distance themselves from the formulation used in the statement of the problem when selecting search terms.

Analysis revealed that 41.5% of the respondents did not hold to the wording of the question and selected the option (d) (table 7), while retaining all the important concepts. Thirty-three point nine per cent (33.9%) selected (a) or (c), an answer in which one of the important concepts was missing. Few, 4 (6.2%) of respondents retained the wording of the question and did not realise that although "country" was an important concept, it needed to be translated into a more significant word for the search strategy.

What is clear from the three questions under this theme is that respondents have difficulty identifying significant words, even when their task is facilitated by being presented with a choice of possible answers. Identifying significant words corresponds to "formulating the research topic and identifying concepts" in the "information research process".

Theme 2: Search Strategy

Variable: Translation into keywords

Question 6: You have used the words "business letters" in a computerised library catalogue search. No document is found by the computer. What do you conclude?

Table 8: Translation into Keywords

Options	Response Distribution	Percentage
a) The library does not have any documents on this topic	23	35.4
b) I have not used the right words	**29**	**44.6**
c) All documents on this topic are already on loan	1	1.5
d) The system is down	-	-
e) Others (please, specify)	-	-
f) Don't know	9	13.8
No response	3	4.6
Total	65	100

The purpose of this question was to find out if librarians are able to identify a common problem researchers face when using words to describe their topic, such as using words that do not correspond to those employed by the search tool. It is worth noting that the identification of synonyms, related terms or descriptors to represent a subject is an important component of the search strategy and improves retrieval of relevant documents.

Analysis of results revealed that 44.6% of the respondents chose the right answer, (b) (table 8). This result is an indication that many librarians themselves do have difficulty identifying the preferred search terms in a particular context and may therefore not be able to assist students having such difficulty.

Variable: Boolean Operator "OR"

Question 13: In order to find more documents on my topic I can include synonyms in my search statement. To connect those synonyms in my statement, I use:

Table 9: Boolean Operator 1

Options	Response Distribution	Percentage
a) AND	12	18.5
b) +	13	20.0
c) NOT	-	-
d) OR	**24**	**36.9**
e) Others (please, specify)	-	-
f) Don't know	16	24.6
Total	65	100

The purpose of this question was to assess if librarians are familiar with Boolean operators, specifically the "OR" operator. It is important that librarians understand the Boolean logic used by most search tools so as to be able to develop a sound search strategy. Boolean operators can be used to formulate a query that reflects the logic of the original question and clearly indicates to the system the relationship between the keywords.

Analysis of results revealed that only 36.9% of the respondents chose the right answer (d) (table 9). With synonyms and related terms, the search operator to use is "OR". This operator tells the system to include in the search results, all the documents that contain one or more of the query terms. Some of the respondents (18.5%) chose the "AND" operator, which has the opposite effect to "OR" in limiting the search to documents containing all the terms. A slightly higher percentage (20%) chose the "+" symbol, often employed by some search engines (such as Google) to represent the Boolean operator "AND" or to indicate that a term must show in the search results.

The fact that 24.6% of the respondents did not know the answer to the question is an indication that the Boolean operators are not well understood by some librarians.

Variable: Search Indexes

Question 15: To find all the documents about Margaret Atwood in the library catalogue, I would do a search:

Table 10: Search Indexes

Options	Response Distribution	Percentage
a) By title	7	10.8
b) By Publisher	-	-
c) By Subject	**2**	**3.1**
d) By Author	49	75.4
e) Other (please, specify)	1	1.5
f) Don't know	6	9.2
Total	65	100

The above question is meant to assess the librarian's understanding of the search indexes in a library catalogue. A good search strategy requires an understanding of the structure and content of the fields in a library catalogue or database in order to select the appropriate search indexes when executing the strategy.

It is, however, rather disappointing that only 3.1% of the respondents chose the right answer (c) (table 10) that is they would search the subject field to look for the documents about an author. The answer (d), search by author, selected by 75.4% of the librarians, will find texts written by Margaret Atwood but not documents about her. While the question is not difficult, it did not have a high success rate. Librarians must know how information is structured and indexed in a search tool, be it a catalogue, a database or a search engine.

Variable: Controlled Vocabulary

Question 16: When searching a specialised database for documents on my subject, it is recommended to use the terminology specific to the database. To identify these terms, I would consult:

Table 11: Controlled Vocabulary

Options	Response Distribution	Percentage
a) An ideogram	3	4.6
b) A dictionary	4	6.2
c) A thesaurus	**36**	**55.4**
d) An Internet search engine	12	18.5
e) Others (please, specify)	-	-
f) Don't know	4	6.2
No response	6	9.2
Total	65	100

The purpose of the question was to determine if librarians are familiar with the concept of a controlled vocabulary tool, such as a thesaurus. Since a given concept may be represented by different terms, according to the search tool used, it is a good idea to consult the database thesaurus, where one is available. The thesaurus facilitates document retrieval by providing a list of preferred terms used to describe a subject in the database.

A good percentage (55.4%) of the respondents chose the right answer (c) (table 11). It is encouraging to know that many librarians are familiar with this concept. The option (b), a dictionary, selected by 6.2% of librarians, is not completely incorrect; however, as dictionaries are not associated with any specific search tools, they cannot indicate which terms to use in a given tool. Again, dictionaries do not situate terms in their linguistic environment by providing generic, specific and related terms for each descriptor. Many catalogues and databases use controlled vocabulary to describe the documents they identify.

The concept of controlled vocabulary must therefore be mastered in order to develop a sound search strategy.

Variable: Boolean Operator "AND"

Question 20: You have to write a paper on the "Treatment of depression". Which search strategy will find the least number of documents?

Table 12: Boolean Operator 2

Options	Response Distribution	Percentage
a) Depression and psychotherapy	6	9.2
b) Depression or psychotherapy or antidepressants	12	18.5
c) Depression and psychotherapy and antidepressants	**17**	**26.2**
d) Depression	19	29.2
e) Others (please, specify)	-	-
f) Don't know	8	12.3
No response	3	4.6
Total	**65**	**100**

Again, this question was to verify if librarians understand Boolean logic. The intention here is to verify if they were familiar with the "AND" operator which has the effect of limiting the search to documents containing all the specified search terms.

Only 26.2% of the respondents chose the correct answer (c) (table 12). This search will retrieve the smallest number of documents. If this result is compared with that obtained for question 13, the "AND" operator appears to be even less understood than the "OR" operator, although question 13 was formulated differently. Of the 73.8% who did not choose the correct answer, 29.2% chose (d), which contains only one term, making the mistake of thinking that the fewer words there are in a search statement, the fewer results there will be. This strategy will however produce many more results than (c). Option (b) will retrieve the most documents, opposite of what was asked.

Translation into keywords and controlled vocabulary correspond to "*refining the search statement*", Boolean operator corresponds to "*mapping the concepts and formulating the search statement*", and search indexes corresponds to "*selecting the search tools*" in the information research process.

Theme 3: Document Types

Variable: Encyclopaedias

Question 7: In order to become familiar with a subject about which I know very little, first I consult:

Table 13: Document Types

Options	Response Distribution	Percentage
a) A journal	-	-
b) An encyclopaedia	**50**	**76.9**
c) A database	4	6.2
d) A book	5	7.7
e) Others (please, specify)	1	1.5
f) Don't know	4	6.2
No response	1	1.5
Total	**65**	**100**

The aim of this question was to know if librarians know that an encyclopaedia can be used to familiarise oneself with a subject. An encyclopaedia is a basic reference tool that makes it easier to learn about a new field by given an overview of the topic.

A large percentage of respondents (76.9%) chose the correct answer (b) (table 13). This is an indication that over three quarters of librarians recognised the usefulness of encyclopaedias. Other options are incorrect, as they do not provide an overview of the subject.

Variable: Periodicals

Question 19: To find the most recent information about drug abuse, I consult:

Table 14: Periodicals

Options	Response Distribution	Percentage
a) A book	2	3.1
b) A journal	**54**	**83.1**
c) An encyclopaedia	2	3.1
d) A dictionary	-	-
e) Other (please, specify)	2	3.1
f) Don't know	3	4.6
No response	2	3.1
Total	**65**	**100**

The purpose of the question was to find out if librarians understand the characteristics of various document types and, more specifically, if they know that periodicals contain more recent information than other document types.

A large percentage of the respondents (83.1%) chose the right answer (b) (table 14). This is an indication that librarians have knowledge of the characteristics of a journal.

Variable: Scholarly Journals

Question 24: Which of the following best describe(s) articles published in a scholarly journal?

(a) The information is written for the layperson

(b) It includes a list of references

(c) The research method used is described

(d) It has been evaluated by an editorial board before publication

e) None of the above

f) Don't know

Table 15a: Scholarly Journals

Option					Response Distribution	Percentage
a					2	3.1
	b				4	6.2
			d		34	53.1
				f	2	3.1
	b	**c**	**d**		**14**	**21.9**
	b		d		2	3.1
		c	d		3	4.7
a			d		1	1.6
a	b	c	d		2	3.1
Total					**65**	**100**

Table 15b: Scholarly Journal options

Answers including option	Percentage
A	7.8
B	34.3
C	29.7
D	**87.5**
F	3.1

The purpose of this question was to find out if librarians' knowledge of various document types enables them to distinguish between scholarly journals and popular magazines. It is important to distinguish between these publications when conducting research, as they do not have the same objectives nor are they written for the same audience. A scholarly journal contains theoretical discussions or research results for a specialised public whereas a popular magazine provides information for the general public.

Only 21.9% of the respondents selected the three answers (b), (c), and (d) that characterise the scholarly journal (table 15a). Others merely demonstrated a partial understanding of these characteristics by selecting only one or two of the three valid answers (b, c, d), alone or with an invalid answer, (a) or (e). The second table (table 15b) revealed that peer review of articles (d) is the best well-known characteristic among the librarians; 87.5% of the librarians selected it. In a context where the importance of critical assessment of information is emphasised, it is important that librarians themselves are familiar with this characteristics to be able to properly instruct their students.

While knowledge of reference works relates to "*formulating the research topic and identifying the concepts*", knowledge of the characteristics of the various document types and knowledge of the characteristics of scholarly journal relate to "*selecting document types*" in the research process.

Theme 4: Search Tools

Variable: Databases

Question 5: If I want to find journal articles about "*The popularity of video games*", I will search in:

Table 16: Search Tools

Options	Response Distribution	Percentage
a) The library catalogue	7	10.8
b) A database	**17**	**26.2**
c) Yahoo	9	13.8
d) The journals in the library	6	9.2
e) Other (please, specify)	6	9.2
f) Don't know	19	29.2
No response	1	1.5
Total	**65**	**100**

The purpose of this question was to find out what strategy librarians adopt when they have to find journal articles. The choice of a search strategy is related to knowledge of the search tools at the user's disposal for finding various types of documents.

The result of the analysis revealed 26.2% of the librarians (table 16) selecting the right answer (b), because the search tool that enables one to search for journal articles is the database. The answer "Yahoo" (c), selected by 13.8% of the librarians is a poor choice. Although Yahoo does provide links to certain electronic journals and magazines, one would still have to browse the website to find articles on one's topic. Seven of the respondents (10.8%) selected the library catalogue, (a), but since the library catalogue does not index journal articles; this answer is also incorrect. While it is possible to browse the journals in the library (d) in the hope of finding one or more relevant articles, it does not represent a particularly efficient search strategy. This ironically was selected by 9.2% of the librarians.

These results show that very few librarians in academic libraries are familiar with databases despite the fact that they will have to instruct the students on how use them to find periodical articles to complete their assignments.

Variable: Search Engines

Question 10: Using a search engine such as Google, I would not find:

Table 17: Search Engines

Options	Response Distribution	Percentage
a) The books available in the library	**51**	**78.5**
b) Biographical information about famous people	2	3.1
c) Merchandise catalogues	3	4.6
d) Information about companies	-	-
e) Others (please, specify)	-	-
f) Don't know	8	12.3
No response	1	1.5
Total	**65**	**100**

This question was meant to verify if librarians do understand that search engines are not appropriate tools for finding documents held by the library.

Fifty-one of the respondents (78.5%) (table 17) selected the right answer (a), an indication that they recognised that library books cannot be found using search engines. While it is possible to find the library catalogue using a search engine such as Google, search engines do not enable one to directly access titles within the catalogue. The choice of (a) is also an indication that many librarians are aware that search engines have certain limitations.

Variable: Library Catalogues

Question 11: A friend told me that I should read an article published in the November 2001 issue of Internet Guide, "The Microsoft Xbox Console", by Mark Kenney. To check the availability of this article at the library, I search in the catalogue under:

Table 18: Library Catalogues 1

Options	Response Distribution	Percentage
a) Internet Guide	**9**	**13.8**
b) Mark Kenney	9	13.8
c) The Microsoft Xbox Console	7	10.8
d) Answers (a), (b), and (c) are correct	25	38.5
e) Others (please, specify)	-	-
f) Don't know	12	18.5
No response	3	4.6
Total	65	100

The objective of this question was to evaluate librarians' knowledge of the library catalogue, specifically their knowledge of the kind of documents that can be found using the catalogue and how to use the different search indexes within it.

Only 13.8% of the respondents (table 18) chose the right answer, (a). Many librarians do not seem to know that the catalogue does not index individual journal articles, and as a result, one cannot search by author or by article title. The only access point is the journal title. A large percentage of the respondents (38.5%) believe that they can search indiscriminately by journal title, article title, or author (d).

The importance of this theme should be noted by librarians because a better understanding of the structure and content of search tools would enable students to avoid wasting time and to be more efficient when searching.

Variable: Metasearch Engines

Question 18: Using a metasearch engine such as DogPile and MetaCrawler, it is possible to:

Table 19: Metasearch Engines

Options	Response Distribution	Percentage
a) Launch a search in many search engines simultaneously	**23**	**35.4**
b) Execute a search in all the existing websites	5	7.7
c) Extend search into foreign language websites	2	3.1
d) Execute the search in all the databases available in the library	4	6.2
e) Others (please, specify)	-	-
f) Don't know	24	36.9
No response	7	10.8
Total	**65**	**100**

The objective of this question was to assess librarians' understanding of metasearch engines, a type of Internet search tool. The use of the Internet as a source of information is on the increase, it is therefore important for the librarians to familiarise themselves with, and be able to distinguish between the various categories of Web search tools and to understand the particularities and limitations of each.

Just about one-third of the respondents (35.4%), (table 19) chose the right statement (a) that best characterises metasearch engines. About one-third of the librarians chose (f), "Don't know", while 7.7% of the respondents think that metasearch engines search all existing Web sites (b), something no Internet search tool can do. This result shows that many librarians do not necessarily have a good understanding of this type of tool and probably believe all web search tools do the same thing. However, the differences between these tools have an impact on the choice and efficiency of a search strategy.

Variable: Library Catalogues

Question 21: Some of the items that can be found in the library catalogue include:

[a] All the titles of the books available in the library

[b] All the titles of the books available on the market

[c] All the titles of articles found in the journals available in the library

[d] All the titles of journals available in the library

[e] None of the above

[f] Don't know

Table 20a: Library Catalogues

Options						Response Distribution	Percentage
a						19	29.2
	b					1	1.5
				e		1	1.5
					f	3	4.6
a		C				1	1.5
a			**d**			**22**	**33.8**
a		C	d			17	26.2
No response						**1**	**1.5**
Total						**65**	**100**

Table 20b: Library Catalogues options

Answers Including Option	Percentage
A	90.7
B	1.5
C	27.7
D	60
No response	1.5

The objective of this question was to determine, using an approach different from that used in Question 11, whether librarians know how to query the library catalogue and for what types of searches it can be used.

Only 33.8% of the librarians (table 20a) selected the right answers (a) and (d) since books and journals available in the library are indeed indexed in the catalogue. Some of the other respondents demonstrated a partial knowledge of what a catalogue contains. For example, 29.2% selected (a), "All the titles of the books available in the library" while 26.2% selected (a) and (d) but also added (c), "All the titles of articles found in the journals available in the library".

The second table (table 20b) above shows an unbelievable selection of option (c) by 27.7% of the librarians, which suggests erroneously that periodical articles are indexed in the catalogue. It should be noted that the catalogue is the search tool that enables library users to find documents available at their university, whether in print, audiovisual or electronic format.

Knowledge of databases, search engines, metasearch engines and library catalogues all relate to "*selecting search tools*" in the information research process.

Theme 5: Use of Results

Variable: Reading citations

Question 9: Which one of the following citations refers to a journal article?

Table 21: Use of Results

Options	Citations	Response Distribution	Percentage
a	Lawani, S.M. (2012). *Frontiers in library and information science: contributions to theory and practice*. Ibadan, Nigeria, Millennium Press.	3	4.6
b	**Ojedokun, A.A. (2005). The evolving sophistication of Internet abuses in Africa. *The International Information and Library Review (IILR)*, 37 (1): 11-17.**	**49**	**75.4**
c	Hartley, J.T. & D.A. Walsh. (2000). "Contemporary issues and new directions in adult development of learning and memory", in L.W. Poon (ed.), Aging in the 1980s: *Psychological issues*, Washington, D.C., American Psychological Association, pp. 239-252.	1	1.5
d	Maccoby, E.E. & J. Martin. (1983). "Socialization in the context of the family: Parent-child interaction", in P.H. Mussen (ed.), *Child psychology: Socialization, personality, and social development.* New York, Wiley, vol. 4, pp. 1-101.	8	12.3
e	Don't know	3	4.6
f	No response	1	1.5
Total		65	100

The objective of the question was to determine if librarians themselves are able to interpret a bibliographic reference and recognise the document type to which it corresponds. This knowledge is important because first, the way to query the catalogue to locate a particular document varies according to document type; and second, because the nature, specificity and currency of information varies according to publication type. As a result, the ability to identify a document type from a given citation is useful in assessing the relevance of a source for one's information needs. It is therefore important to be able to identify the document type corresponding to a citation.

A large percentage of the librarians (75.4%), (table 21) selected the right answer (b). Only about one-quarter of the librarians were unable to identify citation associated with a journal article. These ones will have serious difficulties instructing students on how to locate documents using a bibliography.

Variable: Bibliographies

Question 14: You have found a book that is right on your topic. Which section of the book will you consult to find other documents on the topic?

Table 22: Bibliographies

Options	Response Distribution	Percentage
a) The glossary	4	6.2
b) The index	15	23.1
c) The bibliography	25	38.5
d) The table of content	13	20.0
e) Other (please, specify)	-	-
f) Don't know	8	12.3
Total	**65**	**100**

This question was to find out if librarians know what a bibliography is. Knowledge of bibliography by librarians is important to enable them to properly instruct the students on the added value of the bibliographic references selected by the author. Such references enable them to find other documents on their topic, thus enhancing their awareness of existing knowledge.

The analysis of the results revealed that only 38.5% of the librarians (table 22) are familiar with the bibliography as a tool for finding other documents. However, 61.5% of the respondents lack the knowledge of the benefit of bibliography. This does mean that these librarians would have difficulty in understanding the references the book contains and, as a result, locating the documents cited. This is contrary to the result obtained in the previous question, which leads us to believe that those who are able to interpret a bibliographic reference may not necessarily understand the usefulness of a bibliography.

Knowledge of both reading citations and bibliographies relate to "*locating and retrieving documents*" in the information research process.

Variable: Evaluating Information (Internet)

Question 22: Among the characteristics that are used to evaluate the quality of an Internet site one finds:

[a] The date of publication is provided

[b] The author is known in the field

[c] Responsibility for the site is clearly indicated

[d] The site is rapidly accessible

[e] None of the above

[f] Don't know

Table 23a: Evaluating Information

Option					Response Distribution	Percentage
a					4	6.3
	b				4	6.3
		C			14	22.3
			d		6	9.5
				f	2	3.2
a	b				3	4.8
a		C			3	4.8
a	**b**	**C**			**13**	**20.6**
a	b	C	d		8	12.7
		C	d		2	3.2
a		C	d		1	1.5
a			d		2	3.2
a	b		d		1	1.5
Total					**65**	**100**

Table 23b: Evaluating Information Options

Answers Including Option	Percentage
A	53.9
B	44.4
C	65.1
D	31.6
F	3.2

The objective of this question was to find out if librarians have knowledge of the criteria commonly used in evaluating the quality of a website. Many researchers today, including students often look to the Internet for their information needs. But since the information on the web is not always evaluated or checked before it is posted, librarians' knowledge of the evaluation criteria is important to be able to instruct the students to always use these criteria to critically evaluate it.

Only 20.6% of the respondents (table 23a) chose what are considered to be the best answers (a), (b), and (c). It is worth noting that a higher percentage (65.1%) demonstrated partial knowledge in selecting one or two of the relevant criteria, with or without including the irrelevant criterion (d), or selecting all four options. This is an indication that the concept of evaluation does not appear to be well understood by librarians.

Variable: Ethical Use of Information

Question 23: You found magazine articles and Web pages presenting different views on a current issue. You want to use this information to write your paper. In which case(s) do you need to include a reference to the source of information?

[a] When I copy word for word a paragraph from a magazine article

[b] When I copy word for word a paragraph from a web page

[c] When I write in my own words what is being said in a magazine article

[d] When I write in my own words what is being said in a web page

[e] In none of the above cases

[f] Don't know

Table 24a: Use of Information

Option					Response distribution	Percentage
a					4	7.0
	b				8	14.0
		c			3	5.3
			d		2	3.5
				f	5	8.8
a	b				14	24.6
a			d		1	1.8
	b	c			1	1.8
	b		d		1	1.8
a	b	c			1	1.8
a	**b**	**c**	**d**		**13**	**22.8**
		c	d		3	5.3
a	b		d		1	1.8
Total					**65**	**100**

Table 24b: Use of Information Options

Answers Including Option	Percentage
a	59.8
b	68.6
c	37.0
d	33.5
f	8.8

The objective of this question was to find out if librarians know when to include a reference to the source of the information used. It is important to know that when repeating someone's words or opinions, mention should be made of the author of the original text so the reader may refer to the text. When the statement of an author is repeated word for word or it is paraphrased without documenting the source, it constitutes plagiarism.

Only 22.8% of the librarians (table 24a) chose the correct answers (a), (b), (c), and (d). The other 77.2% demonstrated only a partial knowledge of when to include bibliographic references or have no idea at all when to quote a source. The second table (table 24b) revealed that only about one-third of the librarians are aware of the need to quote sources when paraphrasing: only 37.0% of the respondents circled statement (c),"When I write in my own words what is being said in a magazine article", and 33.5% chose (d),"When I write in my own words what is being said in a Web page".

Citing sources is an important step in the information research process. In preparing a paper, a list of the works consulted or cited must be included.

Summary of Findings

Table 25 provides a summary of the analysis of results, by percentage of correct answers clearly showing areas of deficiencies.

Table 25: Results by Percentage of Correct Answers

Question	Variable	Percentage of Correct Answers
15	Search indexes	3.1
11	Library catalogues	13.8
22	Evaluation of information (Internet)	20.6
24	Scholarly journals	21.9
23	Ethical use of information	22.8
20	Boolean Operator “AND”	26.2
5	Databases	26.2
12	Significant words	30.8
8	Significant words	33.8
21	Library catalogues	33.8
18	Metasearch engines	35.4
13	Boolean Operator “OR”	36.9
14	Bibliographies	38.5
17	Significant words	41.5
6	Translation into keywords	44.6
16	Controlled Vocabulary	55.4
9	Reading citations	75.4
7	Encyclopaedias	76.9
10	Search engines	78.5
19	Periodicals	83.1

Results by Theme

A study of the results under 40% for 13 (in bold print) of the 20 questions revealed areas of deficiency (table 26).

Table 26: Summary of Results by Theme

Themes	Variables	Questions	Result	Problems Identified
Theme 1. Concept Identification	Significant words	8	**33.8**	Difficulty identifying significant words
	Significant words	12	**30.8**	
	Significant words	17	41.5	
Theme 2. Search Strategy	Translation in keywords	6	44.6	Lack of understanding of the Boolean logic (i.e. of operators "OR" and "AND"), and of how information is structured and indexed in a search tool.
	Boolean operator "OR"	13	**36.9**	
	Search indexes	15	**3.1**	
	Controlled vocabulary	16	55.4	
	Boolean operator "AND"	20	**26.2**	
Theme 3. Document types	Encyclopaedias	7	76.9	Lack of knowledge of the characteristics of scholarly journals.
	Periodicals	19	83.1	
	Scholarly journals	24	**21.9**	
Theme 4. Search tools	Databases	5	**26.2**	Lack familiarity with databases. They are unable to distinguish between library catalogues and bibliographic databases. They also have limited understanding of web search tools.
	Search engines	10	78.5	
	Library catalogues	11	**13.8**	
	Metasearch engines	18	**35.4**	
	Library catalogues	21	**33.8**	
Theme 5. Use of results	Reading citations	9	75.4	Lack knowledge of: the benefit of bibliography; when to include bibliographic references or when to quote a source, and the criteria for evaluating information from the Web..
	Bibliographies	14	**38.5**	
	Evaluation of information (Internet)	22	**20.6**	
	Ethical use of information	23	**22.8**	

Discussion of Findings

Except for their understanding of the role of natural language, reference citation, encyclopaedias, periodicals and search engines, weaknesses were noted in librarians' knowledge of each of the steps in the *Information Research Process*, from *Identifying the Concepts* to *Using the Results*. The weaknesses varied according to the variable examined and in proportion to the number of questions included in each of the steps.

The author notes that many of the librarians (70.8%) graduated in the 1990s when IT was introduced into Nigerian university libraries. The author further notes that about half of the respondents (49.2%) have had over six years experience in librarianship practice while sixty of the respondents (92.3%) had master's degree as their highest qualification. It is therefore surprising to find that in spite of the training received from library school and years of experience in librarianship practice, librarians

have difficulty in identifying significant words and the role of Boolean operators. It is even more startling that they are unable to recognise the characteristics of a scholarly journal and to distinguish between library catalogues and bibliographic databases; lack knowledge of the benefit of bibliography; when to include bibliographic references or quote a source and of the criteria for evaluating information from the web; and have limited understanding of web search tools. An earlier study by Ojedokun and Okafor (2011) on Information Technology (IT) skills (relevant to information literacy competency) of librarians in Southern Nigeria had also revealed that librarians were not familiar with subject gateways, specialised databases and some open access library databases.

While all the variables examined are quite germane, (as earlier explained in the result presentations), to possessing competence in information literacy, the above findings and the findings from this earlier study point to librarians' possession of poor information research skills and by extension information literacy skills. These no doubt will have negative impact on the ability of librarians to instruct users on information literacy skills. The practical implication is that library users, which include the students, will not be able to receive proper instruction in information literacy skills and will therefore not be information literate. This will affect their effectiveness, efficiency and productivity at work after graduation. The social implication is that their graduates and other library users will not be able to function effectively in today's information society.

Librarians' role in the teaching of information literacy to library users, especially students is not in doubt. It should however, be noted that the introduction of technology into teaching, changes in scholarly communication patterns, the increasing variety of media, more demanding students requiring services to be available as, when and where they want them, all require that librarians ensure, more than ever, that they are user-focused, user-friendly, and able to assist users to gain information literacy skills which will enable them to be self-sufficient. There is therefore the need to build users' confidence in the abilities required to accomplish this goal. This is particularly important if they are to gain respect from their colleagues in the faculty.

Conclusion

The goal of this study was to establish the validity of the library users/customers' negative perception of the information literacy competence of librarians. Findings from this study confirm the validity of the users/customers impression about the competence of librarians to instruct them in information literacy skills. As the findings revealed, librarians are clearly deficient in the essential skills required for a successful information research process.

We note that technology and knowledge about information resources (including print) and the information-seeking techniques associated with the Internet or electronic databases require time, practice and effort to build skills and expertise. But with the level of education and years of experience of respondents in librarianship practice, and for one responsible for instructing students in the information research process, the results are unexpected, and steps need to be taken to correct the deficiencies.

Librarians should not only be openers of doors and gateways to information; but should also be key enablers, able to empower users to become more self-sufficient in developing information gathering and evaluating skills which will assist others to be well resourced for changing life circumstances.

Recommendations

In the light of the outcome of this study, the recommendations below are worth considering for correcting the outcome of this study.

Training and re-training in information literacy among librarians should be encouraged. It is important that librarians are properly equipped for the delivery of instruction in information literacy. Workshops are a time-honoured method for continuing professional development of librarians. University librarians and the Nigerian Library Association (NLA) are encouraged to take the issue of continuing professional development of their staff/members seriously for effective services delivery.

Internet access for every librarian is recommended. The Internet can also be an excellent tool for librarians teaching information literacy. Its problems as an informational resource according to Klesch (2003) provide the perfect means for gaining information literacy skills. Its weaknesses according to this same author, can also be used to establish a

doorway to other information resources that are better for background information, quicker to use, or simply not available on the Internet.

As the study revealed, it has become necessary for Nigerian library schools to review their curricula to include the teaching of information literacy skills with particular emphasis on its practical component. The last of the comments by one of the respondents also attests to this need. This will go a long way in equipping the librarians with the skills to effectively instruct users in information literacy skills, especially for today's information society.

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