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Cognitive Abilities, Information Literacy Knowledge and Retrieval Skills of Undergraduates: A Comparison of Public and Private Universities in Nigeria

Janet O. Adekannbi, Testimony Morenike Oluwayinka
Africa Regional Centre for Information Science
University of Ibadan, Nigeria

ABSTRACT
This study investigated the differences in the cognitive abilities, information literacy knowledge and skills as well as information retrieval skills between students in public and private universities in Nigeria. Multistage sampling technique was adopted. Two colleges, Natural Sciences and Management Sciences were purposively selected from the Federal University of Agriculture, Abeokuta (FUNAAB) while three schools, Basic and Applied Sciences, Computing and Engineering and Babcock Business School were selected from Babcock University. The colleges/schools were later stratified into six related departments/courses for ease of comparison. Convenience sampling was used to select the total of 235 respondents that participated in the study. Four hypotheses were tested. Result of the test of hypotheses showed no significant difference in the cognitive abilities, information literacy knowledge and skills of students in public and private universities. However, a significant difference was observed in information retrieval skills of the students. Students of Babcock University, a private institution had higher level of information retrieval skills than FUNAAB students, a public university. The study recommends library and information professionals in public universities should be encouraged by administrative heads of such institutions to periodically organize practical workshops on information retrieval skills for students.

Keywords
Cognitive Abilities, Information Literacy, Information Retrieval, University, Nigeria.

1. INTRODUCTION
Information has obviously been an important part of human lives. Humans have long been processors and users of information to help in their decision making [1], a trend that has also been widely observed among students. However, the various trends and level of information explosion, and the emergence of new technologies [2] in the information society have made students to rely on electronic resources found in the University libraries, technology centers and

computer laboratories to meet their information needs. [3]. Hence, in order to satisfy their information needs, students engage in information retrieval activities.

Information retrieval basically involves retrieving documents that a user perceives to be relevant his information need as expressed by his request [4]. According to Omuinu [5], such request which must have been defined might not be a perfect expression of the user's information need. In spite of this, the user is still the only person who can tell the relevance of the document retrieved to his information need [4]. The implication of this is that the relevance of a document might be different for two users with identical requests. According to Royal College of Nursing [6], steps to ensuring effective information retrieval skills include: identifying where relevant information can be found; checking the suitability of information sources to meet the information need; consults with colleagues and information specialists to help identify other tools, such as indexes, for accessing information; using appropriate information services to retrieve information, among others.

For students to efficiently retrieve information, information literacy is important [4,7]. Information literacy (IL) is the set of skills and knowledge that enables us to find, evaluate and use the information we need, and at the same time filter out the information we do not need [1]. With adequate Information literacy skills, potential information users can successfully explore the landscape of information with less stress especially in the era of information explosion and society. According to Eisenberg [1], there are many information literacy standards, some of these are the Big6 model [8], AASL/AECT IL Standards [9] and ACRL IL Competency Standards for Higher Education [10].

In most cases, the relationship between some independent variables and information retrieval skills are being interfered with user's characteristics such as cognitive abilities [11]. Some cognitive processes involved in information retrieval include learning, comprehension and speed in spotting information. These factors have a role to play in the effectiveness of users during a search process [11].

Previous studies have investigated students' information literacy skills [12,13], cognitive skills [14,15] and information retrieval skills [2,16-20]. However, none of these studies have considered another variable which has received some attention in other study areas, namely whether these skills will be different between students in public and private universities.

Public universities are generally funded by governments while private universities rely heavily on tuition fees paid by students. Mazumber [21] investigated the satisfaction of students with the quality of higher education in public and private universities in Bangladesh. The study showed students from private universities are more satisfied than those of public universities. A later study comparing Bangladesh and USA however showed that while there is a larger gap in student satisfaction in public universities compared to private universities in Bangladesh, smaller gaps were observed between private and public universities in USA. This indicates that there is no significant difference in student satisfaction with public and private universities in USA [22]. An earlier study carried out in Nigeria revealed that while there is no significant difference in student entry requirement between public and private universities in Nigeria, there is significant difference in resource availability, resource utilization, governance, and students' academic performance [23]. Moreover, Fordjour et al [4] and Ilogho and Nkiko [24] linked students' search difficulties and poor academic performance in school to ignorance of information literacy and retrieval skills. Hence, this study investigated and compared the following in public and private universities:

i. information literacy knowledge possessed by students
ii. information literacy skills.
iii. cognitive abilities.
iv. information retrieval skills

Based on these objectives, the following hypotheses were tested:

H1: There is no significant difference in the information knowledge of students in public and private universities.

H2: There is no significant difference in the information literacy skills of students in public and private universities.

H3: There is no significant difference in the cognitive abilities of students in public and private universities.

H4: There is no significant difference in the information retrieval skills of students in public and private universities.

2. RESEARCH METHODOLOGY

A survey research design was adopted for this study. The location of this study is Ogun State, Nigeria. Ogun State was purposively selected for this study because it has the highest number of tertiary institutions in Nigeria as shown on

the list of universities in Nigeria on the website of National Universities Commission (nuc.edu.ng). The study was carried out in two selected universities. These are Federal University of Agriculture, Abeokuta (Public university) and Babcock University (Private university). These universities were purposively selected for two reasons, namely, accessibility to the students' population statistics and the fact that the two universities have some departments in common as shown in Table 1.

Table 1a: Sampling Distribution - Federal University of Agriculture, Abeokuta

Colleges	**Departments**	**Population**	**Respondents Per Department**
Natural Sciences	Biochemistry Computer Science Microbiology	93 88 91	19 18 18
Science	Accounting Business Enterprise (Business Administration) Economics	22 200 103	4 40 21
Total		597	120

Source: Administrative Unit, Federal University of Agriculture, Abeokuta, 2014

Table 1b: Sampling Distribution - Babcock University

Schools	**Courses**	**Population**	**Respondents Per Course**
Basic and Applied Sciences	Microbiology Biochemistry	45 55	9 11
Computing and Engineering	Computer Science	140	28
Babcock Business School	Accounting Business Administration Economics	157 92 164	31 18 33
Total		653	130

Source: Data Services and Archival Unit, Babcock University, 2015

The target population of this study comprised the undergraduate students in both universities. The study purposively selected 300 level students from both universities because it is assumed that students at this level are already familiar

with their academic activities. However, 400 level students were excluded from this study because of their preparation for the examinations.

A multi-stage sampling technique was used to select respondents for the study. Two colleges, Natural Sciences and Management Sciences were purposively selected from the Federal University of Agriculture, Abeokuta while three schools, Basic and Applied Sciences, Computing and Engineering and Babcock Business School were selected from Babcock University. The colleges/schools were later stratified into six related departments/courses which were purposively selected from both institutions. This was done to ensure uniformity across the departments.

The total population for the six selected departments/courses in both universities is 1,250. Nwana [25] proposed that if a population is a few hundreds, we need a sample of 20%. Hence, using a sample size of 20%, 120 and 130 respondents were selected from 300level undergraduates in Federal University of Agriculture, Abeokuta and Babcock University, Ilishan-Remo, Ogun State respectively (Table 1). Convenience sampling was however used to select the 300 level students in the selected departments/courses that participated in the study based on their accessibility, availability and readiness to participate in the study.

2.1 Data collection and analysis

Data was collected using a structured questionnaire. The questionnaire was carefully designed to ensure that information and data obtained are relevant to the objective of the study. The study adopted the questionnaire used by Ekenna and Mabawonku (2013). The questionnaire was divided into four major sections namely:

Section A: This section consisted of demographic characteristics of the respondents which included gender, age group, faculty/college, course of study etc.

Section B: This section assessed the information literacy knowledge through an achievement test and information literacy level of the respondent.

Section C: This section assessed the cognitive abilities of the respondents.

Section D: This section assessed the students' information retrieval skills

The items in Section B of Information Literacy Knowledge Test were structured on four (4) options of multiple choice questions with only one correct answer. Each respondent was scored and the pass mark was set at 40%. Information Literacy skill Questions were structured on four (4) point rating scale of Highly Skilled (HS), Moderately Skilled (MS), Weakly Skilled (WS)

and Not Skilled (NS). The items in section C of Cognitive Abilities were structured on 4 point rating scale of Strongly Agree (SA), Agree (A), Disagree (D) and Strongly Disagree (SD) and the items in section D of Information Retrieval Skills was structured on 5 point rating scale of Very Good (VG), Good (G), Average (A) Poor (P) and Very Poor (VP). Respondents were instructed on how to respond to the questionnaire.

Of the 250 questionnaire administered, 235 were returned, showing a return rate of 94%. Frequency and percentage distributions as well as independent sample t-test were used to analyse data collected with the questionnaire.

3. RESULTS

3.1 Demographic characteristics of respondents

Table 2 shows the socio-demographic characteristics of respondents.

Table 2: Demographic Data of the Respondents

VARIABLE	MEASUREMENT	FREQUENCY	PERCENT (%)
GENDER	MALE	123	52.3
	FEMALE	112	47.7
AGE GROUP	16 – 20	122	51.9
	21 – 25	102	43.4
	26 – 30	7	3.0
	31 – 35	2	0.9
	36 – 40	1	0.4
	41 – 45	1	0.4
RELIGION	Christianity	202	86.0
	Islam	33	14.0
MARITAL STATUS	Married	8	3.4
	Single	227	96.6
COLLEGES / SCHOOLS	Basic and Applied Sciences	20	8.5
	Computing and Engineering	28	11.9
	Babcock Business School	78	33.2
	College of Natural Sciences	55	23.4
	College of Management Science	54	23.0
DEPARTMENTS/ COURSES	Biochemistry	30	12.8
	Microbiology	27	11.5
	Computer Science	46	19.6
	Business Administration	47	20.0
	Accounting	31	13.2
	Economics	54	23.0
RESPONDENT SCHOOL	Babcock	126	53.6
	FUNAAB	109	46.4

Majority of the respondents were males (52.3%) while 47.7% were females. More than 95% of the respondents were between 16-25 years. Almost all the respondents were single (96.6%). Larger proportion (86.0%) of the respondents practice Christianity, while 14% practice Islam religion. The distribution of respondents by their faculty include 4.7% from College of Medicine, 3.8% Basic and Applied Sciences, 11.9% Computer Science and Mathematics, 33.2% Babcock Business School, 23.4% College of Natural Sciences and 23.0% from College of Management Science.

3.2 Information literacy knowledge test

The information literacy knowledge possessed by undergraduate students in Babcock and FUNAAB was measured based on their understanding of the need for information, how to locate, evaluate and use information. Table 3 shows the performance of students in each school.

Table 3: Information Literacy Knowledge Performance of Students

		BABCOCK			FUNAAB		
INFORMATION		**Failed**	**Passed**	**Total**	**Failed**	**Passed**	**Total**
How does one know when he needs information?	**Frequency**	24	102	126	27	82	109
	Percent	19.0	81.0	100.0	24.8	75.2	100.0
When one is given an assignment, the first thing he should do is to	**Frequency**	69	57	126	63	46	109
	Percent	54.8	45.2	100.0	57.8	42.2	100.0
To define one's specific information need, the first thing one should do is to	**Frequency**	75	51	126	53	56	109
	Percent	59.5	40.5	100.0	48.6	51.4	100.0
To determine whether the needed information exists or not, the first thing to do is to	**Frequency**	89	37	126	61	48	109
	Percent	70.6	29.4	100.0	56.0	44.0	100.0
The easiest way to locate information is	**Frequency**	50	76	126	39	70	109
	Percent	39.7	60.3	100.0	35.8	64.2	100.0
To become familiar with a subject about which one knows very little, one should first consult	**Frequency**	90	36	126	68	41	109
	Percent	71.4	28.6	100.0	62.4	37.6	100.0
For most current information about a topic, one needs to consult	**Frequency**	74	52	126	83	26	109
	Percent	58.7	41.3	100.0	76.1	23.9	100.0
If I want to find journal articles about "The popularity of video games", I will search in	**Frequency**	77	49	126	66	43	109
	Percent	61.1	38.9	100.0	60.6	39.4	100.0
Using a search engine such as Google or Yahoo, one will not find	**Frequency**	55	71	126	51	58	109
	Percent	43.7	56.3	100.0	46.8	53.2	100.0

Using a search engine such as Google to search for documents on "The depletion of the ozone layer and the impact on health", one should best use the words	**Frequency**	72	54	126	56	53	109
	Percent	57.1	42.9	100.0	51.4	48.6	100.0
To diversify a search statement using Boolean operators, which of the following can be used	**Frequency**	63	63	126	47	62	109
	Percent	50.0	50.0	100.0	43.1	56.9	100.0
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	**Frequency**	85	41	126	65	44	109
	Percent	67.5	32.5	100.0	59.6	40.4	100.0
When one has found a book that is right on his topic. Which section of the book will he consult to find other documents on the topic	**Frequency**	81	45	126	81	28	109
	Percent	64.3	35.7	100.0	74.3	25.7	100.0
To find all documents about Professor Wole Soyinka in the library catalogue, one would do a search	**Frequency**	47	79	126	36	73	109
	Percent	37.3	62.7	100.0	33.0	67.0	100.0
Some of the criteria used to evaluate the quality of internet site are that	**Frequency**	54	72	126	48	61	109
	Percent	42.9	57.1	100.0	44.0	56.0	100.0
Some of the criteria used to evaluate the quality of print sources are	**Frequency**	73	53	126	72	37	109
	Percent	57.9	42.1	100.0	66.1	33.9	100.0
Which of these is not a criterion used to evaluate the quality of online sources	**Frequency**	73	53	126	69	40	109
	Percent	57.9	42.1	100.0	63.3	36.7	100.0
Which of the following best describes articles published in a scholarly journal	**Frequency**	75	51	126	57	52	109
	Percent	59.5	40.5	100.0	52.3	47.7	100.0
Plagiarism is presenting the work of others as though it were your own. Which of the following is an example of plagiarism	**Frequency**	56	70	126	62	47	109
	Percent	44.4	55.6	100.0	56.9	43.1	100.0
When one reads a work which one wants to use for an assignment. He may not cite the author of the work when	**Frequency**	101	25	126	84	25	109
	Percent	80.2	19.8	100.0	77.1	22.9	100.0

For understanding the need for information, a higher percentage of the students in both Babcock (81.0%) and FUNAAB (75.2%) know when they need information. Also, as high as 70.6% of Babcock students did not know the step to take 'to determine whether the needed information exists or not' compared to

only 56.0% of FUNAAB students that failed the same question. On the other hand, 76.1% of FUNAAB students did not know where to consult 'for most current information about a topic' compared to 58.7% of Babcock students who failed the same question. Majority of the students in both Babcock (80.2%) and FUNAAB (77.1%) failed the question 'when one reads a work which one wants to use for an assignment, he may not cite the author of the work'.

Table 4 shows the overall performance of students in both schools.

Table 4: Overall performance in Information literacy knowledge test

BABCOCK	Frequency	Percent	FUNAAB	Frequency	Percent
Failed	44	34.9	Failed	31	28.4
Passed	82	65.1	Passed	78	71.6
Total	126	100.0	Total	109	100.0

Table 4 shows that 34.9% got below the pass mark of 40%, while a greater number of the respondents (65.1%) got above 40% out of the 126 students in Babcock University. Also, 28.4% got below 40% in Federal University of Agriculture, Abeokuta, while 71.6% got above 40% out of the 109 students.

3.3 Information literacy skills

Table 5 shows the findings on the information literacy skills of students in both universities.

Table 5: Descriptive of Information Literacy Skills of Students

		Babcock						FUNAAB					
INFORMATION		**HS**	**MS**	**WS**	**NS**	**Mean**	**S.D**	**HS**	**MS**	**WS**	**NS**	**Mean**	**S.D**
Formulating question base on my specific information need	**Frequency**	46	72	7	1	3.31	0.574	51	46	10	2	3.34	0.723
	Percent	36.5	57.1	5.6	0.8			46.8	42.2	9.2	1.8		
Using several sources to increase familiarity with my topic	**Frequency**	45	62	15	3	3.19	0.737	39	53	15	2	3.18	0.735
	Percent	36.0	49.6	12.0	2.4			35.8	48.6	13.8	1.8		
Using the bibliography or reference list on the book to find other documents on the topic	**Frequency**	37	63	21	4	3.06	0.770	38	34	25	12	2.90	1.009
	Percent	29.6	50.4	16.8	3.2			34.9	31.2	22.9	11.0		
Using encyclopedia to understand a background information to a particular topic	**Frequency**	48	43	29	5	3.07	0.881	46	31	18	14	3.00	1.054
	Percent	38.4	34.4	23.2	4.0			42.2	28.4	16.5	12.9		
Finding all the documents about a particular author in the library catalogue, by doing access points search either by author, title, subject or keywords	**Frequency**	32	60	27	5	2.96	0.800	39	38	19	13	2.94	1.008
	Percent	25.8	48.4	21.8	4.0			35.8	34.9	17.4	11.9		
Using Google scholar	**Frequency**	51	57	14	3	3.25	0.748	43	33	25	8	3.02	0.962

as Google features to find a research article online	**Percent**	40.8	45.6	11.2	2.4			39.4	30.3	22.9	7.4		
Finding more documents on my topics online, by combining synonyms in my search by using the Boolean operator "OR"	**Frequency**	45	42	29	9	2.98	0.942	29	42	25	13	2.80	0.970
	Percent	36.0	33.6	23.2	7.2			26.7	38.5	22.9	11.9		
Narrowing my search on a particular topic, by using the Boolean operator "AND"	**Frequency**	30	50	30	15	2.76	0.954	32	36	29	12	2.81	0.986
	Percent	24.0	40.0	24.0	12.0			29.4	33.0	26.6	11.0		
Removing unwanted documents from my search, by using the Boolean operator "NOT"	**Frequency**	34	41	27	23	2.69	1.066	27	37	30	15	2.70	0.995
	Percent	27.2	32.8	21.6	18.4			24.8	33.9	27.5	13.8		
Formulating right keywords in searching for information online	**Frequency**	44	61	15	5	3.15	0.783	39	37	28	5	3.01	0.897
	Percent	35.2	48.8	12.0	4.0			35.8	33.9	25.7	4.6		
Competently evaluating information no matter the source	**Frequency**	27	65	27	5	2.92	0.771	30	47	22	10	2.89	0.916
	Percent	21.8	52.4	21.8	4.0			27.5	43.1	20.2	9.2		
Evaluating print sources based on its criterion	**Frequency**	39	58	25	3	3.06	0.780	26	47	23	13	2.79	0.944
	Percent	31.2	46.4	20.0	2.4			23.9	43.1	21.1	11.9		

Evaluating online sources based on its criterion	**Frequency**	38	64	21	2	3.10	0.728	35	41	21	12	2.91	0.977
	Percent	30.4	51.2	16.8	1.6			32.1	37.6	19.3	11.0		
Selecting materials and summarizing them in my own words for personal use	**Frequency**	50	55	16	4	3.21	0.786	52	35	12	10	3.18	0.964
	Percent	40.0	44.0	12.8	3.2			47.7	32.1	11.0	9.2		
Preserving and storing information for future use	**Frequency**	43	59	16	6	3.12	0.812	46	42	14	7	3.17	0.887
	Percent	34.7	47.6	12.9	4.8			42.2	38.5	12.8	6.5		
Using acquired information as a lead to produce an article or thesis	**Frequency**	47	54	18	6	3.14	0.836	35	38	25	11	2.89	0.975
	Percent	37.6	43.2	14.4	4.8			32.1	34.9	22.9	10.1		
Communicating and presenting information to others in appropriate and usable format	**Frequency**	41	58	20	6	3.07	0.825	44	35	25	5	3.08	0.904
	Percent	32.8	46.4	16.0	4.8			40.4	32.1	22.9	4.6		
Competently citing and acknowledging other people's work that I used	**Frequency**	46	54	21	4	3.14	0.807	31	47	20	11	2.90	0.932
	Percent	36.8	43.2	16.8	3.2			28.4	43.1	18.4	10.1		

Key: - HS – Highly Skilled; MS – Moderately Skilled; WS – Weakly Skilled; NS – Not Skilled

Results in Table 5 show that generally Babcock students were only moderately skilled in all the items used in measuring information literacy skills. However, an exception was observed with 'Using encyclopedia to understand a background information to a particular topic' and 'Finding more documents on my topics online, by combining synonyms in my search by using the Boolean operator "OR"', where more students were highly skilled than moderately skilled. In contrast, FUNAAB students were highly skilled in 9 of the 18 items used to measure information literacy skills. The information literacy skills of students in both schools can be considered satisfactory in view of the fact that the lowest mean observed was 2.69 from Babcock University.

3.4 Cognitive abilities

The cognitive abilities of students in FUNAAB and Babcock University was measured by their responses to the questions asked in this section which was classified into strongly agree, agree, disagree and strongly disagree. The result is presented in Table 6.

Table 6: Descriptive of Cognitive Abilities of Students

INFORMATION		Babcock university						FUNAAB					
		SA	A	D	SD	Mean	S.D	SA	A	D	SD	Mean	S.D
I remember things very easily	Frequency	55	67	3	1	3.40	0.581	48	51	9	1	3.34	0.670
	Percent	43.7	53.2	2.4	0.7			44.0	46.8	8.3	0.9		
My memory can contain a lot of things and not forget them	Frequency	29	68	26	3	2.98	0.732	31	53	22	3	3.03	0.775
	Percent	23.0	54.0	20.6	2.4			28.4	48.6	20.2	2.8		
I find it easy to express my ideas to people orally	Frequency	38	63	20	5	3.06	0.787	39	42	22	6	3.05	0.886
	Percent	30.2	50.0	15.8	4.0			35.8	38.5	20.2	5.5		
I find it easy to express my ideas to people in writing	Frequency	43	63	16	4	3.15	0.760	46	33	15	15	3.01	1.058
	Percent	34.1	50.0	12.7	3.2			42.2	30.3	13.8	13.7		
I concentrate very well and with minimal distraction during retrieval processes	Frequency	35	64	23	4	3.03	0.769	28	53	19	9	2.92	0.873
	Percent	27.8	50.8	18.3	3.1			25.7	48.6	17.4	8.3		
I have the ability to automatically and fluently perform simple mental processes	Frequency	42	67	14	3	3.17	0.716	24	50	27	8	2.83	0.859
	Percent	33.3	53.2	11.1	2.4			22.0	45.9	24.8	7.3		
I have the ability to deliberately control mental processes to solve problems	Frequency	37	63	18	8	3.04	0.817	32	48	18	11	2.93	0.930
	Percent	29.4	50.0	14.3	6.3			29.4	44.0	16.5	10.1		

In both schools, most of the students only agreed to the items under cognitive abilities. An exception was however observed in FUNAAB where many of the respondents (42.2%) strongly agreed to the item, 'I find it easy to express my ideas to people in writing' (Table 6). It was surprising to observe that over 20% of students in each school disagreed with the item 'My memory can contain a lot of things and not forget them'. Similarly, over 20% of FUNAAB students disagreed with the items 'I find it easy to express my ideas to people orally' (20.2%) and 'I have the ability to automatically and fluently perform simple mental processes' (24.8%).

3.5 Information retrieval skills

The results from the information retrieval skills of Babcock and FUNAAB students are presented in Table 7.

Table 7: Descriptive of Information Retrieval Skills of Students

		Babcock							FUNAAB						
INFORMATION		**VG**	**G**	**A**	**P**	**VP**	**Mean**	**S.D**	**VG**	**G**	**A**	**P**	**VP**	**Mean**	**S.D**
Definition of your needs for research	**Frequency**	53	53	13	1	1	4.29	0.758	49	36	11	11	2	4.09	1.059
	Percent	42.1	42.1	10.2	0.8	0.8			45.0	33.0	10.1	10.1	1.8		
Locating information in e-resources.	**Frequency**	35	63	21	2		4.08	0.726	33	43	14	16	3	3.80	1.112
	Percent	27.8	50.0	16.6	1.6				30.3	39.4	12.8	14.7	2.8		
Selecting articles/journals/books with ease.	**Frequency**	35	56	26	3	1	4.00	0.827	33	33	21	13	9	3.62	1.260
	Percent	27.8	44.4	20.6	2.4	0.8			30.3	30.3	19.3	11.9	8.2		
Summarizing materials in your own words.	**Frequency**	39	52	21	7	2	3.98	0.940	43	32	25	8	1	3.99	1.005
	Percent	30.9	41.3	16.7	5.5	1.6			39.4	29.4	22.9	7.3	0.9		
Understanding terminologies used in databases.	**Frequency**	31	58	26	4	2	3.93	0.868	28	32	23	12	14	3.44	1.329
	Percent	24.6	46.0	20.6	3.2	1.6			25.7	29.4	21.1	11.0	12.8		
Use of reference sources to increase familiarity of topics	**Frequency**	26	54	24	13	4	3.70	1.030	30	31	19	16	13	3.45	1.350
	Percent	20.6	42.9	19.0	10.3	3.2			27.5	28.4	17.4	14.7	11.9		
Use of mouse and keyboard.	**Frequency**	60	37	18	3	3	4.22	0.962	59	17	21	11	1	4.12	1.103
	Percent	47.6	29.4	14.3	2.4	2.4			54.1	15.6	19.3	10.1	0.9		
Copying information into your storage device such as flash drive¸ CD ROM	**Frequency**	63	36	13	7	1	4.28	0.935	42	31	15	19	2	3.84	1.172
	Percent	50.0	28.6	10.3	5.6	.8			38.5	28.4	13.8	17.4	1.8		
Retrieving information from internet	**Frequency**	64	36	17	3	1	4.31	0.866	43	36	12	14	4	3.92	1.164
	Percent	50.8	28.6	13.5	2.4	.8			39.4	33.0	11.0	12.8	3.7		
Retrieving information	**Frequency**	57	38	16	7	3	4.15	1.022	41	36	15	14	3	3.90	1.130

from flash drive	**Percent**	45.2	30.2	12.7	5.6	2.4			37.6	33.0	13.8	12.8	2.8		
Retrieving information from CD ROM	**Frequency**	55	39	20	5	2	4.16	0.957	37	35	22	12	3	3.83	1.101
	Percent	43.7	31.0	15.9	4.0	1.6			33.9	32.1	20.2	11.0	2.8		
Retrieving information from articles/journals	**Frequency**	51	37	23	6	4	4.03	1.056	36	25	22	18	8	3.58	1.300
	Percent	40.5	29.4	18.3	4.8	3.2			33.0	22.9	20.2	16.5	7.3		
Scanning images.	**Frequency**	39	49	18	11	4	3.89	1.063	26	25	27	17	14	3.29	1.335
	Percent	31.0	38.9	14.3	8.7	3.2			23.9	22.9	24.8	15.6	12.8		
Access of on-line databases.	**Frequency**	60	44	15	1	2	4.30	0.842	45	31	16	8	9	3.87	1.263
	Percent	47.6	34.9	11.9	.8	1.6			41.3	28.4	14.7	7.3	8.3		
Download files from online databases.	**Frequency**	50	52	14	4	2	4.18	0.882	34	33	20	16	6	3.67	1.218
	Percent	39.7	41.3	11.1	3.2	1.6			31.2	30.3	18.3	14.7	5.5		
Use of Boolean operators (OR, AND, NOT).	**Frequency**	24	41	40	11	6	3.54	1.061	22	25	29	20	13	3.21	1.292
	Percent	19.0	32.5	31.7	8.7	4.8			20.2	22.9	26.6	18.3	11.9		
Combining two terms to retrieve information.	**Frequency**	25	52	27	14	4	3.66	1.035	25	31	17	24	12	3.30	1.337
	Percent	19.8	41.3	21.4	11.1	3.2			22.9	28.4	15.6	22.0	11.0		
Use of truncation search techniques ($, *, +) to retrieve information.	**Frequency**	26	32	36	17	11	3.37	1.221	25	17	34	14	19	3.14	1.378
	Percent	20.6	25.4	28.6	13.5	8.7			22.9	15.6	31.2	12.8	17.4		
Use of search engines such as Yahoo, Google, Alta Visa and Google scholar etc.	**Frequency**	64	36	11	7	4	4.22	1.049	56	19	11	21	2	3.97	1.251
	Percent	50.8	28.6	8.7	5.6	3.2			51.4	17.4	10.1	19.3	1.8		

Key: - VG – Very Good; G – Good; A – Average; P – Poor; VP – Very Poor

Table 7 shows that generally students in both universities have very good information retrieval skills. On most of the items, more than 60% of students of Babcock reported being good and very good. The exceptions were on the items, 'Use of Boolean operators (OR, AND, NOT)' and 'Use of truncation search techniques ($, *, +) to retrieve information', which had 51.5 and 46% respondents respectively. In contrast to the result from Babcock University, FUNAAB had less than 60% respondents reportedly good and very good on the following items, namely, Understanding terminologies used in databases (55.1%)., Use of reference sources to increase familiarity of topics' (55.9(%), Retrieving information from articles/journals (55.9%), Scanning images.(46.8%), Use of Boolean operators (OR, AND, NOT) (43.1%), Combining two terms to retrieve information (51.3%) and Use of truncation search techniques ($, *, +) to retrieve information (38.5%).

Test of Hypotheses

This section contains the results of the independent sample T-test used to test the 4 hypotheses. The level of significance was set to 5%. Thus, if the p-value is less than 0.05, the null hypothesis is rejected; but if p is greater than 0.05, the null hypothesis is not rejected. The results for Hypotheses 1-4 are presented in Table 8.

Hypothesis One

H_0: There is no significant difference in the information knowledge of students in Federal University of Agriculture, Abeokuta and Babcock University.

H_1: There is a significant difference in the information knowledge of students in Federal University of Agriculture, Abeokuta and Babcock University.

The result from Table 8 shows that at a significant level of 0.05, p=0.851 is not statistically significant. Hence the null hypothesis is not rejected. This implies that significant differences do not exist between students from Babcock and FUNAAB universities in terms of information literacy knowledge.

Table 8: Independent Samples Test result for Hypotheses 1-4

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
Information literacy knowledge	Equal variances assumed	3.084	0.080	-0.188	233	0.851	-0.386	2.051	-4.426	3.655
	Equal variances not assumed			-0.189	232.645	0.850	-0.386	2.035	-4.395	3.624
Information Literacy skill	Equal variances assumed	1.839	0.176	1.119	230	0.264	0.53010	0.47381	-0.40347	1.46366
	Equal variances not assumed			1.108	213.397	0.269	0.53010	0.47841	-0.41291	1.47310
Cognitive Abilities	Equal variances assumed	1.052	0.306	1.522	232	0.129	0.69556	0.45709	-0.20501	1.59613
	Equal variances not assumed			1.516	223.676	0.131	0.69556	0.45884	-0.20863	1.59975
Information Retrieval	Equal variances assumed	33.638	0.000	3.086	232	0.002	5.46613	1.77119	1.97645	8.95581
	Equal variances not assumed			3.016	190.944	0.003	5.46613	1.81233	1.89137	9.04089

Hypothesis Two

H_0: There is no significant difference in the information literacy skills of students in Federal University of Agriculture, Abeokuta and Babcock University.

H_1: There is a significant difference in the information literacy skills of students in Federal University of Agriculture, Abeokuta and Babcock University.

From Table 8, at a significant level of 0.05, p=0.264 is not statistically significant. Hence the null hypothesis is not rejected. This implies that significant differences do not exist between students from Babcock and FUNAAB universities in terms of information literacy skills.

Hypothesis Three

H_0: There is no significant difference in the cognitive abilities of students in Federal University of Agriculture, Abeokuta and Babcock University.

H_1: There is a significant difference in the cognitive abilities of students in Federal University of Agriculture, Abeokuta and Babcock University.

As seen from Table 8, p=0.129 is not statistically significant. Hence the null hypothesis is not rejected. This implies that significant differences do not exist between students from Babcock and FUNAAB universities in terms of cognitive abilities.

Hypothesis Four

H_0: There is no significant difference in the information retrieval skills of students in Federal University of Agriculture, Abeokuta and Babcock University.

H_1: There is a significant difference in the information retrieval skills of students in Federal University of Agriculture, Abeokuta and Babcock University.

The result from Table 8 shows that at a significant level of 0.05, p=0.02 is statistically significant. Looking at the Group Statistics in Table 9, we can see that Babcock students had higher level of information retrieval skills than FUNAAB students.

Table 9: Group Statistics

	Respondent school	N	Mean	Std. Deviation	Std. Error Mean
Information Retrieval	Babcock	125	75.5120	11.15696	.99791
	FUNAAB	109	70.0459	15.79462	1.51285

Hence, this study found that Babcock students had statistically significantly higher information retrieval skills (75.51±11.16) compared to FUNAAB students (70.05±15.79) and the null hypothesis was rejected.

4. DISCUSSION OF FINDINGS

Babcock and FUNAAB undergraduate students possessed information literacy knowledge to a reasonable extent. They understand when and why they need information and are generally able to locate and evaluate such information. However, there is no significant difference in the information literacy knowledge of Babcock and FUNAAB students. On the surface, information literacy skills level seemed higher among FUNAAB students based on the number of items the students reported being highly skilled as compared to Babcock where many of the students were only moderately skilled on the items. However, this seeming difference was not statistically significant. According to Newton [26], information literacy knowledge deals with knowing: when you have a need for information; the resources available to you; how to find information and the need to evaluate results. In addition, Ojedokun [27] also noted that information literacy skills in all disciplines requires an individual to be able to define a problem; initiate a plan to find information; locate and access resources; use the information; synthesize information; and carry out some form of evaluation. Students of both institutions could be considered generally not below average in their level of information literacy skills. This can also be said about the cognitive abilities of the students and the study revealed that cognitive abilities were not statistically different between students of both schools.

Findings however revealed that there is a significant difference in the information retrieval skills of students in both universities, as students of Babcock University had higher level of information retrieval skills compared to FUNAAB students. It is not a surprise that Babcock students had higher information retrieval skills than FUNAAB students. A similar finding was previously reported by Quadri, Adetimirin and Idowu [28]. The authors investigated the availability and utilization of electronic resources by students of Babcock and Redeemers universities, Ogun State, Nigeria. Among other findings, the authors noted that lack of ICT skills as a barrier to the use of electronic resources was more peculiar to respondents in Redeemers University than Babcock. The fact that students of Babcock University, a private university had higher information retrieval skills than FUNAAB, a public university also agrees with a similar finding by Ojo and Akande [29]. The study examined students' access, usage and awareness of electronic information resources at the University College Hospital (UCH), Ibadan, Nigeria, and reported low level of usage of electronic resources by students in this public university due to lack of information retrieval skills.

Low level of information retrieval skills among students of FUNAAB might not be unconnected with the generally known scarce resources in most public universities due to under-funding by governments. It is a known fact that resources for public universities have continuously been inadequate despite growing desire for university education by students. Many facilities in these public universities are dilapidated. On the other hand, some private universities have state-of-the-art facilities such as well-furnished classrooms, standard laboratories, well-equipped libraries, technologies used in teaching and learning which are incomparable to those in most public universities.

5. CONCLUSION

This study has shown that although significant differences do not exist in the information literacy skills and cognitive abilities of students in Babcock and FUNAAB, there is a significant difference in their information retrieval skills. Babcock students had a higher level of information retrieval than FUNAAB students. This study and other related studies are quick to attribute this finding and others to the poor level of funding of public universities by government. The reality however, is that this situation might not change in the very near future. Hence, rather than endlessly waiting for a time when government would be able to adequately fund public universities, library and information professionals in public universities can in their own little ways help out. Administrative heads of public universities should encourage library and information professionals to periodically organize practical workshops on information retrieval with the aim of improving students' information retrieval skills so that students can obtain the needed information to solve their information need. A limitation of this study is that only two universities in Ogun State were used due to availability of students' population statistics and the fact that they have related courses. This may however affect the generalization of the findings. Hence, further studies can be geographically expanded to include universities located in other states in Nigeria.

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