Information Literacy Competency of Students in Colleges of Agriculture, South-West, Nigeria

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Abstract

Purpose: *This study investigated information literacy competency of students in Colleges of Agriculture, South-West, Nigeria.*

Design/Methodology/Approach: *Survey research design was used for the study. Three research questions were raised to guide the study. Purposive sampling technique was used to select a sample size of 437 students in the 2nd year of study. A self-constructed questionnaire was used for data collection. Four hundred and thirty seven copies of questionnaire were administered with a return rate of 83%. The study used frequency, percentage counts and mean scores for data analysis.*

Findings*: The results revealed that respondents possess high knowledge of information literacy. However, the practical ability to effectively utilise information literacy knowledge was found to be average as revealed through test scores on information literacy skills. Test scores were particularly low in the areas of evaluating information, distinguishing sources of information and formulating search strategies.*

Implication: *Students must go beyond the theoretical knowledge of information literacy to actual skills acquisition to effectively navigate the world of information. In general, the findings of the study should assist libraries to look into ways of developing information literacy competence among students.*

Originality/Value: *It was recommended that students identify their areas of strength and weaknesses to ascertain information literacy skills needing improvement. At the same time, efforts should also be made to develop information literacy skills through self-study or participation in library held literacy programmes, among others.*

Keywords: *Colleges of Agriculture; Information literacy competency; Information literacy knowledge; Information literacy skills.*

Introduction

Agriculture from ancient times has been an area of priority for most nations as it is needed to ensure adequate food supply and employment. The case is not different in Nigeria as Sokoya, Alabi and Fagbola (2014) maintain that agriculture constitutes the largest employer of labour for the citizenry and contributes the largest share of the Gross Domestic Product (GDP). To ensure high-level agricultural productivity, colleges are established in all geo-political zones to conduct research and provide extension services. Hence, students of Colleges of Agriculture in Nigeria must access and make use of information to carryout research that would boost agricultural productivity.

Advancement in technology has, however, led to the explosion of information in diverse formats, making it necessary for students to master the techniques for exploring and making ethical use of information. Menou, (2002) opines that today's information users must be equipped to recognise sources of information, the arrangement of information in various sources, an understanding of information retrieval strategies and knowledge of laws guiding the ethical use of information resources. The ability to carry out these tasks effectively is referred to as information literacy competency (ACRL, 2000). Information literacy competence provides the platform for academic

success and lifelong learning. Without it, students in colleges of agriculture, would no doubt, experience difficulty accessing information whether from the Internet or the traditional library and as such the quality of research papers would be poor, thereby contributing little or nothing to the improvement of agriculture in Nigeria.

Statement of the problem

Information literacy skills are essential for coping with the quantum of information in today's world. However, literature suggests that students, especially undergraduates, may not be taking advantage of available information resources due to deficiencies in information literacy skills. This no doubt hinders their ability to navigate the world of information thereby, limiting their chances of academic success. It is against this background that this study examines the information literacy competencies of students in Colleges of Agriculture in South-West, Nigeria.

Objective of the study

The primary objective of the paper was to ascertain information literacy competency level of students in colleges of Agriculture in South-West, Nigeria. Within the scope of this objective, the following questions were raised:

- What is the level of information literacy knowledge of students in Colleges of Agriculture in South-West Nigeria?
- What is the level of information literacy skills of students in the study area?
3 What is the difference between information literacy knowledge and skills of students in Colleges of Agriculture in Colleges of Agriculture in South-West Nigeria?

Literature review

Information literacy is associated with the ability to access, evaluate, and use information effectively(Ojedokun & Lumade, 2005; Adeyemi, 2010).The Association of College and Research Libraries (ACRL) (2000) describes an information-literate person as somebody who is able to: (a) recognize and understand an information need or problem, (b) discern the appropriate sources to satisfy the information need or problem, (c) evaluate, synthesize, and apply the information as it applies to the need or problem, (d) discern when enough information has been gathered to satisfy the need or problem, and (e) use information and information technology appropriately.The Society of College, National and University Libraries (SCONUL) (2004) also proposed a model of information literacy popularly known as the seven pillars of information literacy. This model outlines the following components of information literacy: recognizing information need; distinguishing ways of addressing information gap; constructing strategies for locating information; locating and accessing information; comparing and evaluating information; organizing, applying and communicating information; synthesizing and creating information. It is expected that as a person becomes information literate, he/she will demonstrate the attributes in each pillar.

In the view of Anttiroiko, Lintilä and Savolainen (2001), information literacy competence has two dimensions (knowledge and skills). While knowledge may be seen as our understanding of how things work, skills involve the ability to apply pragmatically, consciously or even unconsciously, our knowledge in practical settings. By implication, information literacy competency goes beyond the knowledge or perception of one's understanding of information literacy to the acquisition of the skills necessary for sourcing, interpreting and transforming information into new knowledge. This line of argument is supported by competency theory which suggests that individuals with low-level skills in a particular domain tend to overestimate their skill level and, moreover, have trouble recognising proficiency in others (Kruger & Dunning, 2009).The importance of assessing information literacy competency using both the perceived measures of knowledge as well as a practical assessment of skills is acknowledged by Perrett (2004) who points out that self-assessment may not always match actual skills. To avoid mistaken conclusions; therefore, it is better to match perception with skills.

In a study, Geffert and Christensen (1998) found no correlation between student's test scores in information literacy and their levels of self-confidence, comfort in libraries, or self-assessment of library skills. Another study

conducted at the University of California-Berkeley compared undergraduates' self-reported information literacy skills with their ability to complete a test designed to measure their lower-order information literacy skills (e.g., ability to retrieve and locate information). The results indicated that students believed that they know more about accessing information and conducting library search than they were able to demonstrate when put to test (Maughan, 2001). Hadimani and Rajgoli (2010) in a survey of information literacy competency of undergraduate students of a college of agriculture in India, found out that students had over-estimated their self-assessed information abilities than their actual level of skills. The majority of the respondents were found to have the ability to recognise a need for information, the ability to locate needed information but needed assistance either by library staff or faculty members. Likewise, among those who indicated that they were competent to evaluate the information gathered, 8.89% did not deem it necessary to evaluate the gathered information with respect to its authority, usefulness, currency, and authenticity. Respondents were also found to be competent in developing search strategies, classifying and storing gathered information for future use, but however, lacked competency in institutional policies related to the access and use of information. Caspers and Bernhisel (2005) in their study of first-year students at Linfield College, however, correlated knowledge of information literacy with skills. In a related study, Omeluzor, Bamidele, Onuoha and Alarape (2013) while investigating the information literacy skills of postgraduate students at Babcock University affirmed that most graduate students acquire information literacy skills through seminars, user education (library instruction), orientation, one-on-one discussion, and tutorial. The study also concluded that majority of the respondents (90%) could identify information in their study area. A study at the University of Dhaka by Islam and Rahman (2014), however, revealed limited information literacy skills among students.

Methodology

The survey research design was used for the study. The study population consisted of 1769 students in the second year of study in six colleges of Agriculture, in South-West, Nigeria. A self-constructed questionnaire was designed using items constructed from the seven pillars of information literacy by the Society of College, National and University Libraries (SCONUL) (2004). Two statements/questions were used to represent each pillar/construct in the sections measuring information literacy knowledge and skills respectively.

Purposive sampling technique was used for selecting colleges offering Agricultural Technology and Agricultural Engineering to have a homogenous group. Three colleges were found to meet these criteria, namely Federal College of Agriculture Moor Plantation Ibadan; Federal College of Agriculture Akure; and Oyo State College of Agricultural Technology, Igbo-Ora. A total of 437 students in the second year of study were found to belong to these departments, thereby, forming the sample size for this study. This number was considered adequate using Krejcie and Morgan sample formulae as cited in Patten (2005).

Results:

Distribution of the population of the study is presented in Table 1

TABLE 1: POPULATION OF THE STUDY.

S/N	NAME OF COLLEGE	DEPARTMENT	POPULATION
1.	Federal College of Forestry Technology, Ibadan	*Agricultural Technology	77
		*Horticultural& Landscape Technology	34
		*Forestry Technology	73
		*Wood &Paper Technology	11
		SUB-TOTAL	**=195**
2.	Federal College of Fisheries and Marine Technology, Lagos	*Fisheries Technology	23
		*Nautical Science	106
		*Marine Engineering	145
		*Maritime Transport & Business Studies	61
		SUB-TOTAL	**=335**
3.	Federal College of Agriculture Moor Plantation, Ibadan	*Home & Rural Economics	22
		*Agricultural Technology	120
		*Agricultural Engineering	80
		SUB- TOTAL	**=222**
4.	Federal College of Animal Health & Production Technology, Ibadan	*Fisheries Technology	31
		*Science Laboratory Technology	50
		*Statistics	76
		*Computer Science	34
		SUB-TOTAL	**=191**
5.	Oyo State College of Agricultural Technology, Igbo Ora	*Animal Health & Production	197
		*Agricultural Technology	74
		*Home & Rural Economics	167
		*Computer Science	49
		*Science Lab Technology	97
		*Agricultural Engineering	66=
		SUB-TOTAL	**650**
6.	Federal College of Agriculture, Akure	*Agricultural Technology	72
		*Animal Production	80
		*Agricultural Engineering	25
		SUB-TOTAL	**=177**
		TOTAL=	**1,770**

A total of 437 copies of the self-constructed questionnaire were administered while 384 were retrieved, which represented a return rate of 83%.

Table 2: Information literacy knowledge of respondents

S/N	Statement	Strongly Agree (%)	Agree (%)	Disagree (%)	Strongly Disagree (%)	NR (%)
1	I have the ability to use PowerPoint in making presentations	109 (28.4)	158(41.1)	65 (16.9)	50 (13)	2 (0.5)
2	I have the ability to formulate the right keywords in searching for information online	106 (27.6)	158 (41.1)	69 (18)	46 (12.0)	5 (1.3)
3	I know when to include flowchart in my presentation	149 (38.8)	112 (29.2)	68 (17.7)	54 (14.1)	1 (0.3)
4	I have the ability to find the information resources I need	96 (25)	165 (43)	57 (17.4)	48 (12.5)	8 (2.1)
5	I have the ability to use the right keywords to find specific books, journals titles on a subject	102 (26.6)	158 (41.1)	53 (13.8)	60 (15.6)	11 (2.9)
6	I have clear understanding of my information needs	74 (19.3)	176 (45.8)	72 (18.8)	61 (15.9)	1 (0.3)
7	I have the ability to identify the type of information that would best meet my need	83 (21.6)	165 (43)	59 (15.4)	69 (18)	8 (2.1)
8	I have the ability to differentiate between types of information sources	82 (21.4)	163 (42.4)	67 (17.4)	54 (14.1)	18 (4.7)
9	I know when I have enough information to meet my need	116 (30.2)	127 (33.1)	56 (14.6)	82 (21.4)	3 (0.8)
10	I have the ability to evaluate online sources based on its criterion	90 (23.4)	143 (37.2)	83 (21.6)	58 (15.1)	10 (2.6)
11	I have the ability to describe articles published in a scholarly journal	58 (15.1)	164 (42.7)	97 (25.3)	58 (15.1)	7 (1.8)
12	I have the ability to understand the issues of copyright and plagiarism	90 (23.4)	132 (34.4)	84 (21.9)	64 (16.7)	14 (3.6)
13	I have the ability to cite bibliographic references using APA or MLA styles in research report	59 (15.4)	160 (41.7)	98 (25.5)	57 (14.8)	10 (2.6)
14	I have the ability to know how to broaden or narrow a search using Boolean operators (AND, NOT, and OR)	68 (17.7)	133 (34.6)	107 (27.9)	71 (18.5)	5 (1.3)

Findings from Table 2 indicate that respondents' knowledge of information literacy is high as the percentage of agreement to all the statements ranged from 52.3% to 69.5%. There was no area of information literacy where respondents' level of agreement was below 50%. The highest level of agreement, however, was in the use of PowerPoint as affirmed by 69.5% of the respondents who agreed/strongly-agreed to the statement. This was followed by 68.7% who acknowledged their ability to formulate the right keywords in an online search. A total of 68% also affirmed knowledge of when to use flow chart in a presentation. The least level of knowledge was in the areas of bibliographic referencing and use of Boolean operators.

Table 3: Respondents level of information literacy skills

S/N	Questions	Answers	Correct	Wrong
1	How does one know when he needs information?	D	247 (62.7%)	137 (37.3%)
2	The flow chart is best used to…..…..……	C	209 (53%)	175 (47%)
3	How would you determine that you have enough information for research?	A	204 (51.8%)	180 (48.2%)
4	Failure to give credit to your source of information is called?	A	175 (44.4%)	209 (55.6%)
5	APA and MLA styles, both refer to……	B	163 (41.1%)	221 (58.9%)
6	The easiest way to locate information is…..…..…...	C	159 (40.4%)	225 (59.6)
7	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:	A	156 (39.6%)	228 (60.4%)
8	Which of the following is a characteristic of a scholarly journal?	C	141 (35.8%)	243 (64.2%)
9	How would you choose terms for your search?	B	140 (35.5%)	244 (64.5%)
10	Which of the following best describe articles published in a scholarly journal?	C	135 (34.3%)	249 (65.7%)
11	PowerPoint presentations are most effective when…..…..……..	C	135 (34.3%)	249 (65.7%)
12	When searching in a research database, the use of Boolean operators, 'AND', 'OR' and 'NOT' can be useful in narrowing or widening your search results. Which word would you use to increase the number of the items retrieved?	C	104 (26.4%)	280 (73.6%)
13	Which of the following information sources gives you a broad understanding of a topic?	C	101 (25.6%)	283 (74.4%)
14	An important criterion used to evaluate the quality of internet site is:	C	69 (17.6%)	215 (82.4%)

From Table 3, it is evident that respondents' information literacy skills are below average. Only three out of 14questions had a score of 50% and above. Respondents were found to have scored well on questions addressing the identification of information need (Questions 1 and 3). This was followed closely by questions 4 & 5 which addressed ethical use of information, even though the scores obtained were a little below average. Although respondents fared well on the use of flow chart, the same cannot be said of the use of PowerPoint. Other aspects of information literacy skills such as knowledge of information sources and evaluation of websites had low scores of 25.6% and 17.6% respectively.

Table 4: Difference between information literacy knowledge and skills of respondents

Construct	Knowledge of information literacy		Information literacy skills	
	Mean	Std. Dev.	Mean	Std. Dev.
A Ability to identify an need for information	67.15	23.69	57.31	38.22
B Ability to assess and distinguish information sources	65.63	22.65	30.94	34.88
C Ability to construct search strategies	66.24	19.63	30.94	31.74
D Ability to locate and access information resources	68.86	21.53	40.08	36.21
E Ability to evaluate information accessed	64.65	20.39	25.72	30.62
F Ability to manage, organize and make ethical use of information	64.21	20.39	42.95	35.44
G Ability to present and disseminate information	72.19	22.20	44.12	35.37

Table 4 compared the mean/standard deviation derived from information literacy knowledge and skills. Construct A was the only construct were the mean scores for knowledge of information literacy and information literacy skills tallied with a score of 50% and above. For other constructs, it was evident that respondents had a higher perception of their knowledge of information literacy than actual skills as they failed to get at least an average score of 50% for information literacy skills.

Discussion of findings

The findings revealed high knowledge of information literacy especially in the areas of presenting and locating information. Although 57.1% and 52.3% of the respondents affirmed having the abilities to cite bibliographic references and conduct searches using Boolean operators respectively, these abilities, however, ranked lowest in respondents knowledge of information literacy skills. This is in partial agreement with Maughan, (2001) whose report on University of California-Berkeley's undergraduates' self-reported information literacy skills indicated that students believed that they know more about accessing information and conducting library search. It also gives credence to the findings of Omeluzor, Bamidele and Onuoha (2013) which found out that majority of the postgraduate students at Babcock University could identify information in their study area.

In the test of information literacy skills, findings, however, revealed below average performance on most of the questions. Respondents scored well in the aspects of identifying information need and utilising flow chart. Scores were; however, very low in the use of Boolean operators, understanding of information sources and evaluation criteria for Internet sites. This finding endorses the findings of Islam and Rahman (2014) which revealed limited information literacy skills among students at the University of Dhaka.

A comparison of mean and standard deviation for the seven constructs under which statements and questions were raised affirmed a lack of correlation between the constructs. Respondents were able to get 50% and above in understanding and test of information literacy for construct A alone. The findings corroborate those of Geffert and Christensen (1998); Hadimani and Rajgoli (2010) whose studies revealed a lack of correlation between knowledge of information literacy and actual test of information literacy skills. It was, however, not in line with those of Caspers and Bernhisel (2005) whose study revealed a correlation between knowledge of information literacy and skills. The findings are not surprising based on the assumptions of competency theory which postulates that individuals with low-level skills in a particular domain tend to overestimate their skill level.

Recommendations

Based on the findings, the study recommends the following:

- To correlate information literacy knowledge with skills, it is necessary for students in Colleges of Agriculture to identify their areas of strength and weaknesses. This would lead to the isolation of information literacy skills to be improved upon.
- Students could also find means of developing their information literacy skills either by self-study or attending library-based literacy programmes.
- School administrators and lecturers can also aid the acquisition of information literacy skills by encouraging class assignments that would warrant information search for students.

Conclusion

Information literacy skills are no doubt essential for academic success in today's environment. It is not enough to know about information literacy, rather, knowledge of information literacy must be put to use if results are to be achieved. Students must, therefore, go beyond the theoretical knowledge of information literacy to actual skills acquisition to navigate the world of information.

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