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Aminu Ahmed BUBA, Mr.

Federal University, Dutse – Nigeria, amah556@gmail.com

Usman Muhammed SONG, Mr.

Federal University, Dutse – Nigeria, usmansong330@gmail.com

Zainab Mohammed ABDULLAHI, Dr.

Modibbo Adama University of Technology, Yola – Nigeria, talk2zainabmautech@gmail.com

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Library Philosophy and Practice (e-journal). 4992.

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**INFORMATION LITERACY SKILLS AND USE OF E-RESOURCES BY
UNDERGRADUATE STUDENTS IN NIGERIA IN RELATION TO KUHLTHAU'S
MODEL OF INFORMATION SEARCH PROCESS (ISP)**

BUBA, Aminu Ahmed

*The Head Librarian, Technical Services Division, University Library
Federal University, Dutse – Nigeria
Telephone: +2348035711900; email: amah556@gmail.com*

SONG, Usman Muhammed

*The Head Librarian, Serials Division
Federal University, Dutse – Nigeria
Telephone: +2348035671947 email: usmansong330@gmail.com*

ABDULLAHI, Zainab Mohammed

*The Head of Department, Department of Library and Information Sciences
Modibbo Adama University of Technology, Yola – Nigeria
Telephone: +2348036055067; email: talk2zainabmautech@gmail.com*

ABSTRACT

The study investigated the level of information literacy skills and use of EIRs through the application of Kuhlthau's Information Search Process (ISP) by undergraduate students of Federal Universities in Nigeria and developed a conceptual model framework to represent the findings. The study adopted the principles of positivist assumptions using Cross-Sectional survey and a Two-Stage Cluster sampling technique on a sampled 2,402 undergraduate students. Data were collected using questionnaire and analyzed through descriptive statistics. The study found out that the Model is effective to this study as it describes the information search process from the perspective of the user which developed a principle of uncertainty that initiates the process of information seeking. The findings revealed that undergraduate students have adequate knowledge about information literacy program (mean=4.0) and are aware of a programs that teach users about how to use e-resources in seeking for information to increase self awareness (mean=4.3). The study found out that ICT facilities enable undergraduate students acquire more information (90.3%) and have adequate knowledge about information literacy program and search terminologies (1,034/51.2%) which initiate the search process. The general conclusion of the research is that undergraduate students have adequate information literacy skills but experience heightened uncertainty with inconsistent information that requires construction and interpretation. The study recommended that librarians need to re-evaluate their roles and be more active in the task of inculcating the principles of information literacy and apply its various aspects in appropriate situations for the promotion of information literacy programs.

Keywords: *Kuhlthau's Information Search Process, e-Resources, Information Search Process, Literacy Skills, Undergraduate Students*

Introduction

Information literacy is the ability to make effective use of information in decision making of an individual to locate and critically evaluate information. The university libraries are the heart of the academic institutions as they help to provide, inform and educate the students about the availability, access and use of information resources such as books, journals, audio visual materials and services. Undergraduate students are faced with countless information choices to decide on which information resource to use for their research activities in determining the authenticity, validity, and usability of the information they discover. This paper focuses on the impact of information literacy skills and programs while applying Kuhlthau's Information Search Process (ISP) to determine the level of information literacy skills possessed by undergraduate students for effective use of electronic information resources in Federal Universities in Northern Nigeria.

The Kuhlthau's Information Search Process (ISP) is among the most widely recognized and frequently studied and cited model which has the potential to teach students about information literacy and information-seeking behavior in the field of library and information sciences. The model is used in determining the level of information literacy skills of undergraduate students which assists in understanding their own search process and become more successful in searching. Kuhlthau's ISP model has been applied in several studies (Idoniboye-Obu, 2013; Odede and Zawedde 2018) in exploring comprehensively the processes of students being actively engaged in searching for information to become informed by infusing information literacy skills.

Cognitive processes were increasingly recognized in the field of library and information science as significant components for understanding information behavior, but there was insignificant empirical research output presented to this regard. Using the understanding of information seeking behavior as provided by the Information Search Process (ISP) will introduce the experience of information literacy skills and seeking from undergraduate students' perspective. The Information Search Process (ISP) presents a view of information seeking from the user's perspective in six stages: task initiation, selection, exploration, focus formulation, collection and presentation.

The influence of computer literacy is paramount to the academic performance of every student. With the abundant potentials embodied in the use of electronic information resources, lacking requisite skills affects the undergraduate student' ability to use and harness the immeasurable advantages embedded to satisfy their information needs. To corroborate this view, Mittal and Bala (2013) identified problems in the adoption and usage of electronic information resources which include low basic information literacy skill and competencies levels. Studies revealed that different types of electronic information resources such as Internet, databases, CD-ROM, Telefax, reports on CD ROM, electronic journals are available and accessible by undergraduate students (Kumar and Singh, 2011; Omoike, 2013; Aina, 2014; Gayathri and Sadik, 2015). Adeniran (2013) gave a list of electronic information resources available in Nigeria as Internet source, Online Databases, CD-ROM, OPAC (Online Public Access Catalogue) and electronic Journals.

In view of the above, undergraduate students in Nigerian Universities are finding it difficult to utilize e-resources as a result of their inability to navigate through the complex world in the present global information explosion. It was based on the above problems that the researchers carry out this investigation to determine the level of information literacy skills possessed by the undergraduate students through the application of Kuhlthau's Information Search Process (ISP) for effective use of information resources in Nigeria.

Research Objective

The general purpose of the study is to investigate the information literacy skills and use of electronic information resources by undergraduate students in Nigeria analyzing them in relation to the constructs of Kuhlthau's Information Search Process (ISP). While specifically, the research sought to:

1. Identify the nature of information literacy programs in Nigeria in conformity with Kuhlthau's Information Search Process (ISP) model;
2. Investigate the level of information literacy skills possessed by undergraduate students through an analysis of Kuhlthau's Information Search Process (ISP) model;
3. Identify the e-resources used and determine the level of satisfaction derived from the utilization of the e-resources by the undergraduate students under study;

Review of Related Literature

Information literacy is a fluid concept, shaped by our experiences, and changes in our information rich society. The concept of ‘information literacy’ cannot be traced to the work of a single author, a single study, a single stream of research, nor a single driving force or cause, such as poverty, disease, illiteracy, or unemployment. Rather, the idea reflects a convergence of thinking from many developments, disciplines, sectors and areas of research.

Many studies conducted showed the impact of information literacy skills on the use of electronic information resources by undergraduate students. Unfortunately, observations and available literature such as Omoike, 2013; Aina, 2014; Gayathri and Sadik, 2015, have indicated low usage of e-resources by undergraduate students particularly in Nigerian universities and they are lagging behind their counterparts.

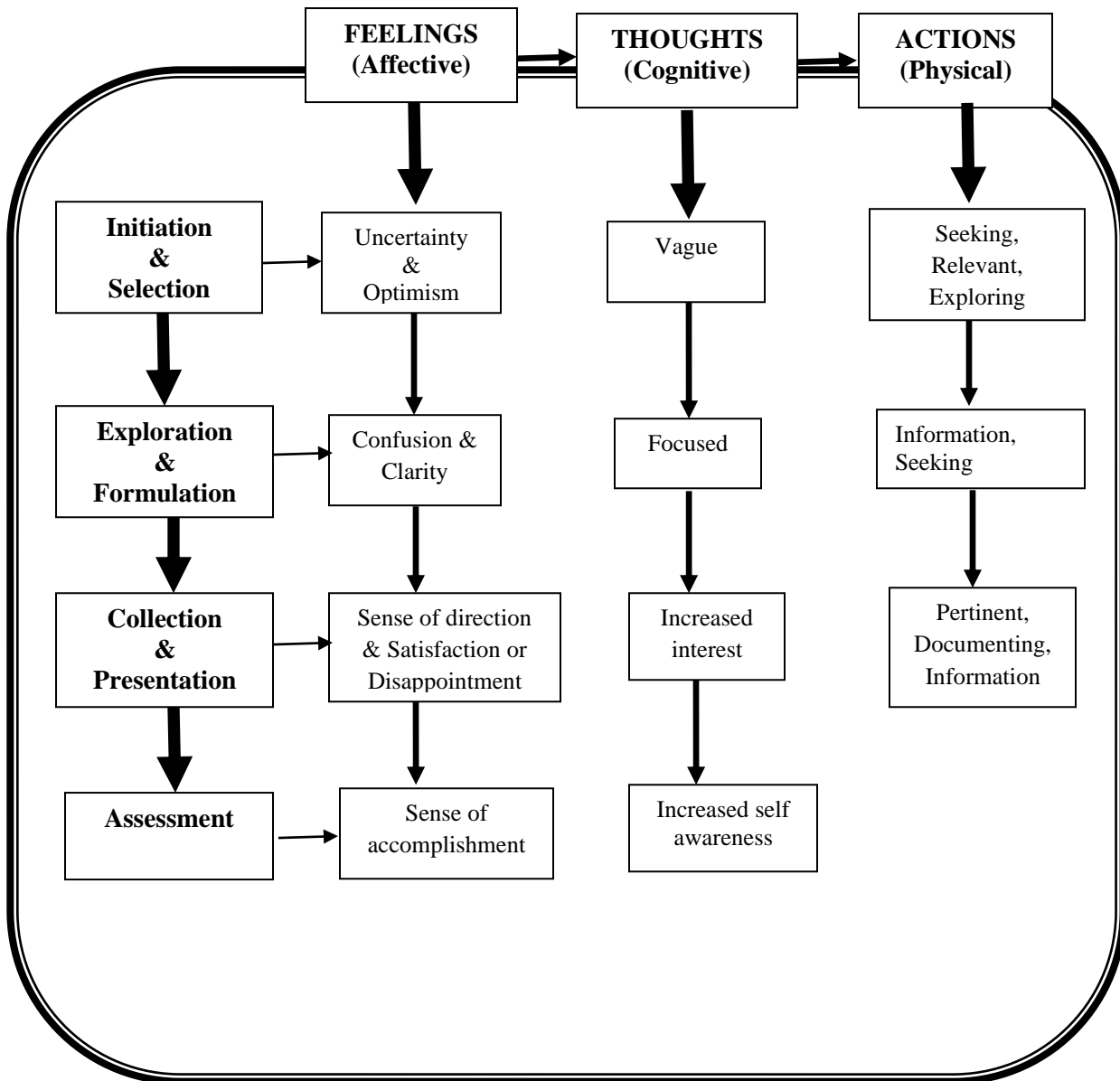
Theoretical background

There have been efforts in advancing more suitable theories to guide the conduct of this research. After reviewing various learning theories on information literacy, Kuhlthau’s Information Search Process models of information literacy was adopted. The model describes users’ experience in the process of information seeking as a series of thoughts, feelings and actions.

Kuhlthau’s Model of Information Search Process (ISP)

Odede and Zawedde (2018) opined that Kuhlthau’s Information Search Process (ISP) model describes users’ experience in the process of information seeking as a series of thoughts, feelings, and actions. Thoughts that begin as uncertain, vague, and ambiguous become clearer, more focused, and specific as the search process progresses. Feelings of anxiety and doubt become more confident and certain. Through their actions, people seek information relevant to the general topic in the beginning stages of the search process and pertinent to the focused topic toward closure. Formulation of a focus or a personal perspective of the topic is a pivotal point in the search process. At that point, feelings shift from uncertain to confident, thoughts change from vague to more clear and interest increases. The model was verified in longitudinal case studies and large scale studies of diverse samples of library users (Kuhlthau, 1988; Kuhlthau et al., 1990).

Figure 1: Model of the Information Search Process (Kuhlthau, 2004)



The model reveals a search process in which a person seeking for meaning begin with the sense of uncertainty in the course of seeking for the information which is articulated in a holistic view of information seeking from the user’s perspective in six stages:

1. **Initiation:** - This is the starting process where students first become aware of a lack of knowledge and feelings of uncertainty to establish a searching process.

2. **Selection:** - At this stage, a general area, topic, or problem is identified and initial uncertainty often gives way to a brief sense of optimism and a readiness to begin the search.
3. **Exploration:** - The student will encounter inconsistency and incompatibility of information and doubt frequently increase. But the student will start to develop confidence in himself that a solution is on the way.
4. **Formulation:** - When the student developed confidence, a focused perspective will be formed and the state of uncertainty will gradually diminish with increase in confidence.
5. **Collection:** - At this stage, after the formation of a focused perspective, the uncertainty the user has will subside as interest and involvement deepens.
6. **Presentation:** - This is the last stage of the model where the search is being completed with a new understanding that enable the student to explain his or her learning to others through sharing the experience gained thereby putting the learning into use

Conceptual Review

Skills involve the ability to pragmatically apply, consciously or even unconsciously, the knowledge in practical settings. In this setting, 'skills' can be conceived as the technical aspects of competence. According to Abbas (2014), the significance of information literacy education lies in its potential to encourage deep, rather than surface learning, and in its potential to transform dependent learners into independent, self-directed, lifelong learners.

Information literacy skills are exemplified by ideas such as the ability to discover, retrieve, and use information, the ability to manage information, and the ability to make critical choices about information resources. Information literacy skills is a far more comprehensive concept encompassing abilities such as critical thinking, synthesis, communication, and research methodologies. Therefore, the definition and understanding of the concept seems to be related to the way in which the concepts of competence and skills are defined and perceived.

Without being primed, undergraduate students display a low level of proficiency in identifying the source of information and weighing source credibility (Enite, 2014). Identifying credible information is challenging for young web users because they are less cognitively developed than adults and are at greater risk for falsely accepting a source's self-asserted credibility. This can be seen in the study of Song and Buba (2017) who investigated the information literacy skills of

extension workers, the findings of the study shows that majority of the respondents possess information literacy skills to utilise e-resources, this is as a result of their maturity and ability to distinguish sources.

Odede and Zawedde (2018) investigated Information Literacy Skills in using e-resources and found out that students' use of e-resources is determined by their ability to evaluate information critically. Majority 52 (45.2%) of the respondents agreed that their use of e-resources is determined by their ability to decide to adopt continually emerging innovations in information technology with 22(19.1%) who strongly agreed. The findings also show that 62(54%) of the respondents agreed that they use e-resources because they can compare and critically evaluate if the information collected is credible and relevant, and 53(46.1%) of the respondents agreed that they could format and publish ideas electronically in textual form. This is an indication that critical literacy that enables students to evaluate information sources and resources is important, especially in this era of ICT.

Various types of e-resources are used in education, including e-books, e-journals, web based resources, e-databases, data archives, manuscripts, maps, magazines, theses, e-newspapers, e-mail, research reports and online catalogues (Adeniran, 2013). Shukla and Mishra (2011); Dhanavandan and Tamizhchelvan (2012) described electronic collection as the collection of information stored and accessed only by the use of electronic gadgets in a networked environment. Kumar and Singh (2011); Okon, et al., (2014) opined that the general types of electronic information resources include OPAC, CD-ROMs, and Online electronic databases, e-journals and e-books. In the same vein, Buba, et al., (2019) in the study, gave a list of electronic information resources as: Internet source, Online Databases, CD-ROM, OPAC (Online Public Access Catalogue) and electronic Journals.

The results of a study by Okon, et al., (2014) revealed that there was a significant positive correlation between accessibility and utilization of electronic information resources and productivity in Nigerian universities. Song, et al., (2018) reported high usage of the library's OPAC by students in Federal University Libraries in Northern Nigeria.

Rani (2011) reported the rapid growth and use of electronic books in schools colleges and universities in developing countries. Omoike (2013) also mentioned the potential advantages of

electronic books including easier access, speedy publications space saving and lower costs. The study further revealed that majority of the respondents to a great extent made use of the available e-resources mostly for knowledge acquisition and learning purposes.

Emwanta and Nwalo (2013); Okon, et al., (2014); Aina (2014); Omoike (2013) observed that, although electronic information resources hold great potentials in supporting and augmenting existing educational programs, the fact remains that there are various problems militating against the effective use of electronic information resources. Foremost among the problems, is the lack of skilled manpower to manage available system, inadequate training facilities, irregular power supply and poor Internet connectivity. These factors are not exhaustive but represent the major problem faced in the development of electronic information resources in Nigeria. If these challenges are not addressed, the effectiveness of electronic information resources will be adversely affected.

Methodology

Cross-Sectional survey design was used in the study on a population of undergraduate students in Nigeria. Since the population has homogenous characteristics, a two-stage Cluster sampling technique was adopted to have more filtered elements. The first stage was to sample federal universities out from the other universities and the second stage was to sample North-East Region out of the six regions in Nigeria.

Therefore, the study was conducted on undergraduate students of the six (6) Federal Universities in North-Eastern Nigerian which includes Modibbo Adama University of Technology, Yola (14,603); Federal University of Kashere (2,905); University of Maiduguri (25,243); Federal University Gashua (2,246); Federal University Wukari (3,129) and Abubakar Tafawa Balewa University, Bauchi (13,674) with a total population of 61,804 undergraduate students.

A total sample size of 2,402 undergraduate students was drawn from the population using Sloven's formula $\{n = \frac{N}{(1+N\epsilon^2)}\}$. Questionnaire was used as the research instrument consist of four (4) sections with thirty (30) items analyzed using descriptive statistics.

Findings

Table 1: Response Rate

Institution	Expected Respondents	Missing/Not Returned	Actual Respondents	Valid Percent (Returned Rate)
Modibbo Adama University of Technology, Yola	567	60	507	25.12%
Federal University Kashere	114	13	101	5.00%
University of Maiduguri	980	248	732	36.27%
Federal University Gashua	87	7	80	3.96%
Federal University Wukari	122	16	106	5.25%
Abubakar Tafawa Balewa University, Bauchi	532	40	492	24.38%
Total	2402	384 (15.9%)	2,018 (84.0%)	100%

Table 1 represents the response rate of the respondents, where it revealed that all the 6 sampled universities are adequately represented. From the analysis on the table, out of the 2,402 distributed questionnaire, 2,018 (84.0%) were returned and found useful while 384 (15.9%) were missing or not valid for the study. From the analysis of the 6 universities, 507 samples were returned and 60 missing from Modibbo Adama University of Technology, Yola, 101 samples were returned and 13 missing from Federal University Kashere, 732 samples were returned and 248 missing from University of Maiduguri, 80 samples were returned and 7 missing from Federal University Gashua, 106 samples were returned and 16 missing from Federal University Wukari and 492 samples were returned and 40 missing from Abubakar Tafawa Balewa University, Bauchi. This gives a returned valid rate of 2,018 (84.0%) samples of questionnaire.

Research Question Analysis

The research questions was analyzed using a 5-point Likert Scale of Strongly Agree (SA), Agree (A), Undecided (UD), Strongly Disagree (SD) and Disagree (D) on 5, 4, 3, 2 and 1 grades respectively, and a bench mark mean of 2.5 was set as a decision to accept.

Table 2: Nature of Information literacy programs

S/N	Awareness of Information Literacy Program	SA & A	UD	SD & D	Mean	Decision
1	I have adequate knowledge about information literacy program that educate users about search terminologies during library orientations and exhibitions	1,591 (78.8%)	127 (6.3%)	300 (14.9%)	4.00	Accepted
2	I have knowledge about using e-resources from e-sources which prepares me for searching information through departmental courses	983 (48.7%)	223 (11.1%)	812 (40.2%)	3.10	Accepted
3	I am aware of a program that teach users about how to use e-resources in the library to explore ways of seeking for information which increase self awareness	1,911 (94.7%)	12 (0.6%)	95 (4.7%)	4.39	Accepted
4	I am aware that CD-ROM and databases influences research activities through the information literacy programs in the library	1,931 (95.7%)	12 (0.6%)	75 (3.7%)	4.38	Accepted
	Average Mean				3.97	Highly Significant

Table 2 represents the analysis of the nature of information literacy programs, and it revealed that majority 1,591 (78.8%) of the respondents have adequate knowledge about information literacy program that educate users about search terminologies during library orientations and exhibitions (mean=4.0), 1,911 (94.7%) of the respondents are aware of a program that teach users about how to use e-resources in the library to explore ways of seeking for information which increase self awareness (mean=4.3) and 1,931 (95.7%) are aware that CD-ROM and databases influences research activities through the information literacy programs in the library (mean=4.3). The analysis also showed that the respondents have knowledge about using e-resources from e-sources which prepares them for searching information through departmental courses (mean=3.1) and are accepted as the nature of information literacy programs undertaken by the respondents. The analysis further showed that the average mean is highly significant (mean=3.97) which indicates that the respondents are engage in one program or the other about information literacy skills which influences their utilization of electronic information resources and information literacy instruction is adequate enough to provide the literacy skills to undergraduate students..

The result is in agreement with the study by Abbas (2014) which found that majority of Nigerian schools use various information literacy programs for inculcating information literacy skills to their students. The result has disagreed with the assertion by Enite (2014) that the type of user education given in Nigeria is inadequate and not up to standard.

Table 3: Level of Information literacy skills

S/N	Level of Literacy Skills	SA & A	UD	SD & D	Mean	Decision
AFFECTIVE DOMAIN LITERACY SKILLS						
5	Ability to formulate questions based on my information needs even if I don't know where the information is located	1,034 (51.2%)	221 (10.9%)	763 (37.8%)	3.2	Accepted
6	Ability to recognize a need for information resources	1,711 (84.8%)	218 (10.8%)	89 (4.4%)	4.17	Accepted
7	Ability to distinguish potential information resources	1,823 (90.3%)	92 (4.6%)	103 (5.1%)	4.28	Accepted
8	Recognize different methods of accessing information sources and resources	378 (18.7%)	92 (4.6%)	1,548 (76.7%)	2.10	Rejected
COGNITIVE DOMAIN LITERACY SKILLS						
9	Recognize vagueness in the search process	607 (30.1%)	92 (4.6%)	1,319 (65.4%)	2.50	Accepted
10	Ability to use information in critical thinking and problem solving	1,823 (90.3%)	38 (1.9%)	157 (7.8%)	4.30	Accepted
11	Ability to organize, apply and communicate information	670 (33.2%)	137 (6.8%)	1,211 (60.0%)	2.60	Accepted
12	Ability to synthesize and build on existing information	65 (3.2%)	131 (6.5%)	1,822 (90.3%)	1.80	Rejected
PHYSICAL DOMAIN LITERACY SKILLS						
13	Browse online and offline databases to locate pertinent information	903 (44.7%)	85(4.2%)	1,030 (51.0%)	2.91	Accepted
14	Ability to construct strategies for locating information	484 (23.9%)	53 (2.6%)	1,481 (73.4%)	2.30	Rejected
15	Decide when to adopt emerging innovations in ICT	1,021 (50.6%)	59 (2.9%)	938 (46.5%)	3.10	Accepted
16	Ability to integrate new information into an existing body of knowledge	208 (10.3%)	38 (1.9%)	1,772 (87.8%)	1.85	Rejected
17	Ability to evaluate information obtained from different sources.	102 (5.1%)	147 (7.3%)	1,769 (87.7%)	1.70	Rejected

Table 3 above represents the level of literacy skills of the respondents analyzed in relation to Kuhlthau's Model of Information Search Process (ISP).

The analysis of the "Affective Domain Literacy Skills" variable revealed that majority (1,034/51.2%) of the respondents have the ability to formulate questions based on their information needs even if they don't know where the information is (mean=3.2), ability to recognize a need for information resources (1,711/84.8%) and ability to distinguish potential information resources (1,823/90.3%) are accepted as their affective domain level of information literacy skills, while majority (1,548/76.7%) rejected that they recognize different methods of accessing information sources and resources with mean mark of 2.1 less than the bench mark.

The analysis of the "Cognitive Domain Literacy Skills" variable revealed that even though majority (1,319/65.4% and 1,211/60.0%) disagree that they recognize vagueness in the search process and have ability to organize, apply and communicate information respectively, it is still accepted based on the accepted mean mark of 2.5 as their cognitive literacy skills level. The analysis further revealed that 1,823/90.3% of the respondents have the ability to use information in critical thinking and problem solving, while ability to synthesize and build on existing information was rejected (mean=1.8) because majority (1,822/90.3%) disagree to it.

The analysis of the "Physical Domain Literacy Skills" variable revealed that even though majority (1,030/51.0%) disagree that they browse online and offline databases to locate pertinent information but it is accepted (mean=2.9) while 1,021/50.6% respondents decide when to adopt emerging innovations in ICT as their physical information literacy skills. The analysis further revealed that majority 1,481/73.4% disagree that they have ability to construct strategies for locating information, 1,772/87.8% disagree with ability to integrate new information into an existing body of knowledge and 1,769/87.7% also disagree with ability to evaluate information obtained from different sources and therefore rejected as physical domain level of information literacy skills of the respondents.

This corroborates the assertion by Song and Buba (2017) that there is no doubt electronic information resources cannot be highly accessed without adequate information literacy skills. The result also supports the assertion by Anunobi and Udem (2014) that information literacy skills empowers people with critical skills and that the effective utilization of electronic

information resources is not possible without skills on how to manipulate the electronic environment.

Table 4: Summary of Kuhlthau’s Model Constructs and Respondents Literacy Skills

Model Construct	Average Mean	Decision
Affective Domain Literacy Skills Mean	3.44	Highly Significant
Cognitive Domain Literacy Skills Mean	2.80	Significant
Physical Domain Literacy Skills	2.37	Less Significant/Not Accepted
Total Average Mean for Level of Literacy Skills	2.87	Significant

Table 4 represents the analysis of summary of Kuhlthau’s model of Information Search Process (ISP) constructs as they relate to the study variables. The analysis on the table revealed that Affective Domain Literacy Skills Mean (mean=3.44) and Cognitive Domain Literacy Skills Mean (mean=2.80) are significant and accepted as the level of information literacy skills of the respondents in relation to Kuhlthau Model of Information Search Process (ISP). The analysis further showed that the Physical Domain Literacy Skills (mean=2.37) is less significant and therefore not accepted as the respondents’ level of literacy skills which means they do not possess adequate physical skills to access and retrieve e-resources.

The result buttressed the findings by Anunobi and Udem (2014) that information literacy skills empower people with critical skills and that the effective utilization of e-resources is not possible without skills on how to manipulate the electronic environment. The result of the findings also corroborate the assertion of Buba, et al., (2018) who posited that for students to be able to find information about a topic from a variety of sources, they are expected to develop knowledge, skills, competencies and understanding of the information environment and also develop their ideas of using Information and Communication Technology tools to enhance the quality of their work.

Table 5 represents the types of e-resources used by the undergraduate students. The analysis showed that majority (1,723/85.4%) of the respondents use Social Media (mean=4.10), The Internet, 2,003/99.3% (mean=4.41), e-Journals and e-Books, 1,031/51.1% (mean=3.10) and e-Databases 1,327/65.8% (mean=3.70) are accepted as the different types of electronic information resources used by the students.

Table 5: Types of e-resources used

S/N	E-Resources used	SA & A	UD	SD & D	Mean	Decision
18	Video and Audiotape	108 (5.4%)	210 (10.4%)	1,700 (84.2%)	1.80	Rejected
19	Social Media	1723 (85.4%)	127 (6.3%)	168 (8.3%)	4.10	Accepted
20	CD- ROMs	627 (31.1%)	45 (2.2%)	1,346 (66.7%)	2.37	Rejected
21	e-Databases	1,327 (65.8%)	404 (20.0%)	287 (14.2%)	3.70	Accepted
22	e-Journals and e-Books	1,031 (51.1%)	170 (8.4%)	817 (40.5%)	3.10	Accepted
23	Internet	2,003 (99.3%)	0 (0.0%)	15 (0.7%)	4.41	Accepted
24	e-Dissertation and e-Theses	401 (19.8%)	113 (5.6%)	1,504 (74.5%)	2.20	Rejected
	Average Mean				3.09	Significant

The analysis further revealed that Video and Audiotape (mean=1.80), CD- ROM (mean=2.37) and e-Dissertation and e-Theses (mean=2.20) are rejected and therefore not among the types of e-resources used by the students. The average mean of the types of e-resources used by the undergraduate students is significant (mean=3.09) which translate adequate information literacy skills of the students.

This finding has implication for the study because CD- ROMs, e-thesis and dissertations which are among the most important e-resources for academic research activities are not being utilized. This may translate to their lack of availability or the student's lack of knowledge about their existence.

This finding contradicted a study by Adeniran (2013) which implied that the various types of e-resources used in schools include web based resources, e-databases, data archives, manuscripts, maps, magazines, e-theses, newspapers, e-mail, research reports and online catalogues.

Table 6 represents the level of satisfaction derived from utilization of the e-resources by undergraduate students. The analysis revealed that majority 1,823 (90.3%) of the respondents agreed using ICT facilities enable them acquire more information for their course of study while 1,093 (54.2%) of the respondents gained more experience after using e-resources in the

university library. Therefore, accepted as the level of satisfaction the students gained from using e-resources in the library. The analysis further revealed that majority 1,468 (72.7%) of the respondents disagreed that they made better grades after relying on the available e-resources due to sufficient skills, adequate computers and its technologies are provided in the university library (1,480/73.3% disagreed), there are adequate e-resources available for students to access (1,599/79.2% disagree), Information literacy skills are adequately provided for students by the university library (1,548/76.7% disagreed) and therefore rejected as part of the level of satisfaction of the students.

Table 6: Level of Satisfaction

S/N	Rate of Satisfaction	SA & A	UD	SD & D	Mean	Decision
25	I made better grades after relying on the available e-resources due to my sufficient skills	380 (18.8%)	170 (8.4%)	1,468 (72.7%)	2.20	Rejected
26	Using ICT facilities enable me acquire more information for my course of study	1,823 (90.3%)	97 (4.8%)	98 (4.9%)	4.27	Accepted
27	I have gained more experience after using e-resources in the university library	1,093 (54.2%)	172 (8.5%)	753 (37.3%)	3.20	Accepted
28	Adequate computers and its technologies are provided in the university library	327 (16.2%)	211 (10.5%)	1,480 (73.3%)	2.10	Rejected
29	There are adequate e-resources available for students to access	208 (10.3%)	211 (10.5%)	1,599 (79.2%)	2.00	Rejected
30	Information literacy skills are adequately provided for students by the university library	378 (18.7%)	92 (4.6%)	1,548 (76.7%)	2.10	Rejected
	Average Mean				2.65	Significant

The average mean of the level of satisfaction is significant (mean=2.65) statistically even though some of the items were rejected but is justified since majority (54.2%) of the respondents gained more experience after using e-resources in the university library. But it can be deduced that the students are partially satisfied with using e-resources in the libraries under study.

These findings support the study of Omoike (2013) which revealed that majority of the respondents made use of the available e-resources mostly because of their satisfaction with the results found for knowledge acquisition and learning purposes.

Applying Kuhlthau Model of Information Search Process to the Study Findings

From the findings of the study, the researchers using the assumptions of Kuhlthau developed a conceptual model framework to represent the findings. The model is designed to be generally applicable and not region-specific in information search process.

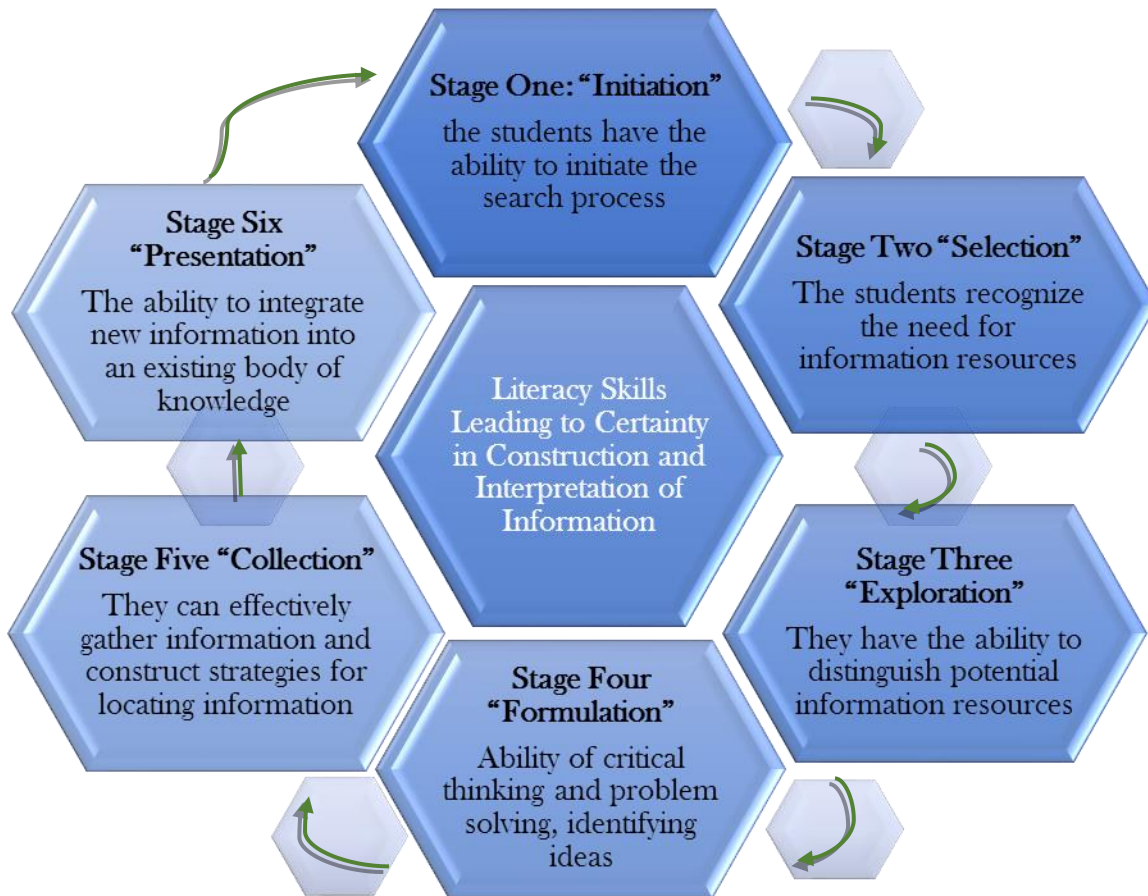


Fig. 2: Kuhlthau’s Model of Information Search Process (Source: The Authors, 2021)

The first stage in Kuhlthau’s Model of Information Search Process is **“Initiation”**, the feeling of uncertainty, vagueness and willingness to seek for information which signifies students being aware of a gap in knowledge. The study found out that over 78% of the students have adequate knowledge about information literacy program and search terminologies which gives them the ability to formulate questions even if where the information is located is not known

(1,034/51.2%), this shows that the students have the ability to initiate the search process. As the Information Search Process (ISP) Model postulate, students will frequently involve in discussing possible avenues of approach to seek for information which this study affirmed.

In the second stage is “**Selection**”, the task is to show optimism in selecting the general topic to be investigated and the approach to be pursued. The feelings of uncertainty of the students begin to give way to optimism and there is a readiness to begin the search. The study found out that majority (1,711/84.8%) of the students have the ability to recognize a need for information resources (mean=4.17), this shows that the outcome of the possible choice is predicted and the approach to seek for potential for success is selected.

At the “**Exploration**” stage where it is characterized by feelings of confusion and uncertainty which frequently increase during this time, the study found out majority (1,823/90.3%) of the student have the ability to distinguish potential information resources (mean=4.28) the task is to investigate information on the general topic in order to extend personal understanding. At this stage, according to Information Search Process (ISP) model, an inability to express precisely what information is needed can mar communication between the user and the system, in locating information about the general topic, reading to become informed, and relating new information to what is already known. Exploration is considered the most difficult stage in the Information Search Process (ISP) where the information encountered can increase uncertainty prompting a dip in confidence.

The next stage is “**Formulation**”, which is the turning point of the Information Search Process (ISP), when feelings of uncertainty diminish and confidence increases. In this study, majority (1,823/90.3%) the students have the ability to use information in critical thinking and problem solving (mean=4.30) which involves identifying and selecting ideas in the information from which to form a focused perspective of the topic. During this time, a change in feelings is commonly noted, with indications of increased confidence and a sense of clarity.

The fifth stage in the process is “**Collection**” which deals with the interaction between the user and the information system efficiently. At this point, the research found out that the students posses less skills (mean=2.91) in browsing online and offline databases to locate pertinent information as only 903 (44.7%) agreed that they can effectively gather information related to the focused topic. Only students with a clearer sense of direction can specify the need for

pertinent information, thereby facilitating a comprehensive search of available resources. The feelings of confidence increase only among few students from the findings of the study where only 484 (23.9%) have the ability to construct strategies for locating information.

The sixth stage which is also the last stage in the process is “**Presentation**”, the feelings of sense of satisfaction where the task is to complete the search and to present the findings. From the research finding, only 208 (10.3%) of the respondents have the ability to integrate new information into an existing body of knowledge. This showed that majority of the students’ experience heightened uncertainty in inconsistent information that requires construction and interpretation due to lack of enough information literacy skills.

Conclusion

The study sought to find out the information literacy skills and use of electronic information resources using the Kuhlthau’s Model of Information Search Process (ISP) by undergraduate students in Nigeria. The findings of the study revealed that, the importance of information literacy cannot be over emphasized as information literacy skills are important in the use of e-resources and the study provides important implications both in theory and in practice. The study concludes that there is adequate knowledge about information literacy program that educate undergraduate students about search terminologies. The study also concludes, using Kuhlthau’s Model of Information Search Process (ISP), that undergraduate students’ feelings of confidence increase only among few students because majority experience heightened uncertainty in inconsistent information that requires construction and interpretation due to lack of enough information literacy skills. It was also concluded that Information Search Process (ISP) Model is effective to this study as it describes the information search process from the perspective of the user which developed a principle of uncertainty due to lack of skills or limited construction which initiates the process of information seeking.

Recommendations

The following recommendations were made based on the findings of the study.

1. Information literacy is seen as necessary skills in using electronic information resources, therefore, librarians need to re-evaluate their roles and be more active in the task of inculcating the principles of information literacy

2. Libraries and information centers must therefore ensure that students are able to apply the various aspects of information literacy skills in appropriate situations for learning and research
3. The university management needs to improve the content of the information literacy programs in order to inculcate in the undergraduate students the wherewithal of getting relevant, adequate and up to-date information from the e-resources.
4. There is the need to make information literacy programs a stand-alone course in the curriculum, which will improve the information literacy skills of the students.

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