

# Cognitive Styles, Information Needs and Utilization of Library Information Resources as Predictors of Teaching Effectiveness of Educators in Library and Information Science Schools in Nigeria

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## Abstract

Contrary to government and parental expectations, many students are still performing poorly in library and information science programme at the university level in Nigeria. This has been linked with low level of teaching effectiveness of educators. This paper, therefore, examines the contribution of cognitive styles, information needs, and utilization of library information resources to teaching effectiveness of educators in library and information science schools in Nigeria. Total enumeration technique coupled with a questionnaire was used to collect data on a population size 265 lecturers in 24 universities in Nigerian, out of which 200 responded given a response rate of 76%. The study found that cognitive styles, information needs, and utilization of library information resources had significant relationship with teaching effectiveness of the respondents. In addition, cognitive styles, information needs, and utilization of library information resources significantly predict teaching effectiveness of the respondents. More so, each of the independent variables: cognitive styles, information needs, and utilization of library information resources have relative contribution and significantly predicts teaching effectiveness of the respondents. The paper concludes that more focus needs to be on the practice of teaching at the university level. Consequently, it is recommended that the university authorities should consider cognitive styles, information needs, and utilization of library information resources for teaching effectiveness of educators.

**Keywords:** Cognitive Styles, Information Needs, Utilization, Teaching effectiveness, Educators, Nigeria

## Introduction

The need to improve students' performance through effective teaching and learning strategies at various levels of education is one of the major concerns of educationist today. Research in education aims at developing better ways of teaching so as to help the students learn and perform well in school (Okoronka and Wada 2014). The teacher is known to be the fulcrum about which the entire business of curriculum implementation in schools revolves. The teacher's attitude and personality combined with his choice of instructional strategies and resources determine not only the interest and attitude of the learner but also the aspirations and achievement in school subjects (Okoronka 2011).

Hammer, Piascik, Medina, Pittenger, Rose, Creekmore, Soltis, Bouldin, Schwarz, and Steven (2010) identify three predominant sources for teaching excellence assessment which include: students, colleagues, and the teachers. Students complete evaluations at the end of the semester to provide formative and summative feedback about the course and its outcomes. Colleagues provide constructive feedback for their peers by acknowledging strengths, as well as areas for further improvement. Self-evaluation requires self-reflection and enables the educator to assess his or her growth over time in order to highlight and acknowledge improvement.

One of the most common concepts that comprise debates in teaching literature has revolved round the definition of teaching effectiveness and how it should be measured. Existing literature has defined teaching effectiveness as "perfection or the optimum level of efficiency and productivity on the part of the teacher (Sawhney and Kaur, 2011). It is the ability of the teacher to create a meeting and an interaction between the physical, intellectual and psychological interests of students. Teaching effectiveness is important because effective teaching helps student learning. It has become even more important as the emphasis on quality in higher education has increased.

Past studies reveal that all the resources required for education production processes are in short supply in universities in Nigeria in general and library and information science (LIS) schools in particular (Kolawole, 2012). More so, some educators in LIS schools in Nigeria are not professionals across board and may not have been properly trained in the act of teaching and examination administration. Students' outcomes do not match the government and parental investment. This is linked to low level of teaching effectiveness of educators in library and information science schools in Nigeria. (Ochogwu, 1992, Saleh, 2011). Thus, raising educational standards should be the government's concern. Akinsolu (2010) citing Lassa (2000) claims that education cannot be provided by just anybody; it requires a teacher who plans and delivers the lessons or instruction in such a way that objectives can be achieved. Based on the foregoing, the study aims at examining the contribution of

cognitive styles, information needs and utilization of library information resources to teaching effectiveness of educators in library and information science schools in Nigeria.

Cognitive style refers to a psychological dimension representing consistencies in an individual's manner of cognitive functioning, particularly with respect to acquiring and processing information (Ausburn and Ausburn, 1978). Witkin, Moore, Goodenough and Cox (1977) characterize cognitive styles as individual differences in the way people perceive, think, solve problems, learn, and relate to others. Investigators in numerous applied fields have found that cognitive style can be a better predictor of an individual's success in a particular situation than general intelligence or situational factors (Kozhevnikov, 2007). In the field of education, researchers have argued that cognitive styles have predictive power for academic achievement beyond general abilities (Sternberg and Zhang, 2001). This implies that the cognitive styles of educators in the library and information science (LIS) schools in Nigeria can be used to determine the success or predict their teaching effectiveness.

The assessment of the information needs and seeking behaviour of various professionals, such as library educators, is essential for assisting them to access and use library information resources. The roles and responsibilities of university faculty members are closely tied to the central functions of higher education. According to Joughin (1969), the functions of universities are "to promote inquiry and advance the sum of human knowledge, to provide general instruction to the students, and to develop experts for various branches of the public service." Correspondingly, library educators undertake research, teaching, and service roles to carry out the academic work of their respective institutions. Each of these roles enables library educators to generate and disseminate knowledge to peers, students, and general audience.

Based on current trends, it is expected that the roles and responsibilities of library educators will determine their information needs. As an indispensable information seeking centre, libraries have been established in all universities across the globe and Nigeria is not an exception (Okogwu and Nnam, (2013). Bhatti (2009) submits that university libraries' responsibility is to ensure that the use of information resources and services are maximized to benefit their users. The university library happens to be one of the physical facilities to provide a functional learning environment for students and faculty; enhance the opportunities for research, teaching, service (Council of the American Library Association, 2008). Therefore, university libraries are expected to meet up the information needs of library educators in LIS schools in Nigeria.

University libraries are often considered as the most important resource centre of an academic institution. University libraries collect a variety of information resource for preservation and use of the library patrons which include both print and e-resources. Apart from these resources, university libraries provide Internet facilities serving as links that provide users with access to information at remote sites (Oyewusi and Oyeboade, 2009). The library information resources (LIRs) are expected to be adequate in provision and accessible so that users can obtain and utilize them. Availability and accessibility of LIRs are believed to be a precondition to utilization.

## Literature Review

Effective teachers have become good at what they do because they evaluate their practice. Educational evaluation is a professional responsibility for academic staff, arising from commitment to understanding the effects of teaching on students and to enhance student learning. Akiri and Ugborugbo (2009) found that effective teachers produced high performing students. This agrees with the earlier studies of Adu and Olatundun (2007), Lockhead and Komenan (1988) and Maduka (2000). Ojo and Falaye (2012) submit that an effective teaching is one that results in the students learning maximally what is taught them.

Good and Brophy (1994) cited in MacGregor (2007) describe effective teachers as teachers who: 1) make maximum use of instructional time, 2) present material in a way to meet students' needs, (3) monitor programmes and progress, 4) plan opportunities for students to apply in learning, 5) re-teach when needed, 6) maintain high, but realistic goals. Akinsolu (2010) concludes that "there is a positive and significant relationship among quantity and quality of teachers and students' performance. In other words, teachers' competency and adequacy is a panacea for attainment of educational goals and objectives.

In the same vein, the executive summary of a review of research on effective teaching by Ko, Sammons and Bakkum (2013) suggests that effective teachers: 1) are clear about instructional goals, 2) are knowledgeable about curriculum content and the strategies for teaching it, 3) communicate to their students what is expected of them, and why, 4) make expert use of existing instructional materials in order to devote more time to practices that enrich and clarify the content, 5) teach students meta-cognitive strategies and give them opportunities to master them, 6) address high- and lower-level of cognitive objectives, 7) monitor students' understanding by offering regular appropriate feedback, 8) integrate their instruction with that in other subject areas, and 9) accept responsibility for student outcomes. The review shows that in order to achieve good teaching, good subject knowledge is a prerequisite. Also, the skilful use of well-chosen questions to engage and challenge learners, and to consolidate understanding, is an important feature, as is the effective use of assessment for learning.

Kozhevnikov (2007) submits that the field that has generated the largest number of applied studies on cognitive styles is education. In education, research has aimed at understanding individual differences (preferences) in learning process. Some scholars like Okoronka (2009), Fall (2003), Onunkwo and Ekeh (2005) cited in Okoronka and Wada (2014) among others have confirmed the influence of cognitive styles on students performance in science. Consequently, it is assumed that cognitive styles could influence students performance in library education too if applied. Therefore, the need to find new techniques in the classroom which can be used to accommodate the diverse learning styles of the students by the teacher is very important. This will ultimately lead to improved performance of learners.

Robertson (2008) identified three main aspects as to how a knowledge of learners' cognitive styles can assist a teacher to be effective in the classroom: 1) the teacher has to be aware of his/her cognitive style and how this may be reflected in his/her teaching style by consciously planning for the inclusion of different styles within the holistic-analytic and verbal-imagery dimensions, 2) knowing the different cognitive styles of learners gives teachers the opportunity to increase classroom efficiency by presenting material in many different ways, in order to offer a myriad of multisensory, abstract and concrete learning activities that meet the needs of many different learning styles, 3) it is also necessary to help students explore other learning styles, thus promoting flexibility and opportunities for success in tasks and in contexts for which their preferred style is not naturally suited.

People consciously or unconsciously seek information for different needs and from varying sources. Their needs could range from educational, research, professional, recreational to pecuniary or for personal development. Khan and Shafique (2008) study the information needs and information seeking behaviour of the college faculty in The Islamia University of Bahawalpur, Pakistan. The findings of the study show that the college teachers and administrators mostly seek information for lecture preparation, improvement of their personal competencies and current awareness from their institutional libraries. Okogwu and Nnam (2013) investigated the information needs and information seeking behaviour of social science lecturers of Ebonyi State University, Abakaliki, Nigeria. The study reveals that lecturers seek information for educational purposes, which include doing research work, writing and presenting papers and for updating knowledge.

In addition, the study of Nnadozie and Nnadozie (2008) confirms that faculty members need information for their teaching and research responsibilities. The job related nature of faculty information needs was also explored by previous studies like Bruce (2005), Maceviciute (2006), Obasuyi (2007), Sen and Tailor (2007), and Akinola (2009) among others. Ozioko (2005) concludes that every lecturer is expected to be literate in the modern information technologies so as to facilitate information seeking and inquiry process as they embark on their various teaching and research endeavours.

Echezona (2005) found that biological sciences lecturers prefer research reports, periodicals and textbooks and that they rely on local and international journals for teaching and research. Otebelu (2009) found that the users' impression towards library services influence their attitude in the use of library information resources. The study, therefore, suggests improved library services so as to encourage the users to develop positive attitude in the use of library services. Popoola and Haliso (2009) also found that library information resources mostly used by the respondents studied are journals, abstracts and indexes, textbooks, theses and dissertations, conference proceedings, technical reports, newspapers and magazines, government documents and statistical publications. This finding supports the assertion made by Watson (2004) that in general, social scientists rely heavily upon both journals and monographs to almost equal extent.

Emokiniovo and Ogunrombi (2012) evaluate the use of faculty libraries in University of Benin. The study reveals that the faculty libraries are being used maximally and that majority are satisfied with library materials found while a handful of them were dissatisfied. Therefore, acquisition of teaching and researchable materials at regular intervals is recommended. Nwezeh and Shabi (2011) observe that academic work suffers because of failure to use the library resources to its fullest potentials. Satisfying user's needs in the academic libraries should be of paramount importance to the librarians. Librarians are expected to provide the best possible quality service to their users.

### **Objectives of the Study**

The study aims at achieving the following objectives:

1. To determine the dominant patterns of cognitive styles of educators in library and information science schools in Nigeria;
2. To find out the major information needs of educators in library and information science schools in Nigeria;
3. To determine the major library information resources utilized by educators in library and information science schools in Nigeria;
4. To find out the level of teaching effectiveness of educators in library and information science schools in Nigeria;
5. To ascertain the relationships among cognitive styles, information needs, utilization of library

information resources and teaching effectiveness of educators in library and information science schools in Nigeria;

6. To determine whether cognitive styles, information needs, utilization of library information resources are predictors of teaching effectiveness of educators in library and information science schools in Nigeria; and
7. To find out the relative contribution of cognitive styles, information needs, and utilization of library information resources to the prediction of teaching effectiveness of educators in library and information science schools in Nigeria.

### Research Questions

To achieve the stated objectives, the following major research questions guided the study:

1. What are the dominant patterns of cognitive styles of educators in library and information science schools in Nigeria?
2. What are the major information needs of educators in library and information science schools in Nigeria?
3. What are the major library information resources utilised by educators in library and information science schools in Nigeria?
4. What is the level of teaching effectiveness of educators in library and information science schools in Nigeria?
5. What is the relative contribution of cognitive styles, information needs, and utilisation of library information resources to the prediction of teaching effectiveness of educators in library and information science schools in Nigeria?
6. What is the joint contribution of cognitive styles, information needs and utilization of library information resources to the prediction of teaching effectiveness of educators?

### Research Methodology

The survey research design of correlational type was adopted. The study population comprised of teachers in 24 universities in Nigeria. Total enumeration technique was used to cover a population size of 265 teachers in universities in Nigeria. A set of questionnaire entitled: "Information Needs, Utilization of library information resources and Teaching Effectiveness of Teachers (COSINUTE)", scale was used for data collection. The research instrument had five main sections. Section 'A' focused on demographic information of the respondents such as name of institution, highest educational qualification, academic status, subject background, and work experience (in years). Section 'B' dealt with cognitive styles of the respondents. It is a 40 item cognitive styles inventory developed by Martin (1998). It was measured on a 5-point scale by making the respondents to score each source type as follows: strongly agree = 5, agree = 4, undecided = 3, disagree = 2 and strongly disagree = 1. This subscale had a coefficient reliability of 0.73 using Cronbach-alpha method. Section 'C' dealt with information needs of the respondents, also measured on a 4-point scale by asking the respondents to score each source type as follows: always needed (AN) = 4, sometimes needed (SN) = 3, needed (N) = 2 and never needed (NN) = 1, with a co-efficient reliability of 0.82 using Guttman Slitt-half method. Section 'C' dealt with accessibility of library information resources to the respondents. It was measured on a 4-point scale with responses ranging from very easily accessible (VEA) = 5 to not accessible (NT) = 1. It had a coefficient of 0.93 using Cronbach-alpha method. Section 'D' dealt with utilization of library information resources by the respondents. It was measured on a 4-point scale by making the respondents to score each source type as follows: very highly utilized (VHU) = 4, highly utilized (HU) = 3, occasionally utilized (OU) = 2 and never utilized (NU) = 1. It had a coefficient reliability of 0.92 using Cronbach-alpha method. Section 'F' dealt with teaching effectiveness of the respondents. It is a 22-item teaching effectiveness inventory developed by Popoola (2008). It was revalidated and a reliability coefficient of 0.82 was obtained using Cronbach-alpha method. It is a 5-point scale with response ranging from excellent = 5 to poor = 1.

Six hired and trained postgraduate students drawn from the Department of Library, Archival and Information Studies, University of Ibadan, Nigeria administered the questionnaire on the 265 teachers from the 24 chosen universities out of which 200 responded and their questionnaire were found valid for analysis. The response rate achieved was 76%. The questionnaire administration and retrieval is reflected in Table 1. The data collection lasted for nine months as a result of the trade dispute between the Academic Staff Union of Nigerian University (ASUU) and the federal government, that is, May, 2013 - January, 2014

**Table 1: Questionnaire Administration and Retrieval**

Universities	Copies of questionnaire			Response Rate (%)
	Distributed	Returned	Usable	
MU	10	10	10	5.0
DELSU	10	10	10	5.0
AAU	16	12	12	6.0
ESUST	11	08	08	4.0
UNILORIN	11	05	05	2.5
ASU	08	05	05	2.5
BIU	06	05	05	2.5
FUTM	17	14	14	4.0
ISU	14	10	10	5.0
BUK	16	09	09	4.5
UNIUYO	04	03	03	1.0
UNIMAID	13	03	03	3.0
UNN	14	10	10	5.0
BU	11	07	07	3.5
UMYU	07	05	05	2.5
UI	15	10	10	5.0
ABU	15	10	10	6.0
BSU	12	11	11	5.5
KSU	05	05	05	2.5
AU	05	05	05	2.5
ATBU	05	14	14	2.5
UNIZIK	10	10	10	5.0
UNICAL	10	08	08	4.0
TASUED	07	06	06	3.0
N	265	200	200	76

**Key**

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|--|--|
| MU = Madonna University                  | UNN = University of Nigeria, Nsukka          |
| DELSU = Delta State University           | UMYU = Umaru Musa Yar'Adua University        |
| AAU = Ambrose Alli University            | UI = University of Ibadan                    |
| ESUST = Enugu State Univ. of Sc. & Tech. | ABU = Ahmadu Bello University                |
| UNILORIN = University of Ilorin          | BSU = Benue State University                 |
| ASU = Abia State University              | KSU = Kwara State University                 |
| BIU = Benson Idahosa University          | AU = Adeleke University                      |
| FUTM = Federal Univ. of Tech., Minna     | ATBU = Abubakar Tafawa Balewa University     |
| ISU = Imo State University               | UNIZIK = Nnamdi Azikiwe University           |
| BUK = Bayero University, Kano            | UNICAL = University of Calabar               |
| UNIUYO = University of Uyo               | TASUED = Tai Solarin University of Education |
| UNIMAID = University of Maiduguri        | BU = Babcock University                      |

**Findings**

**Demographic Profiles of the Educators (Respondents)**

The gender distribution of the respondents shows that 132 (66.0%) are males while the rest 38 (34.0%) are females. This implies that there are more male educators than female educators in the surveyed library and information science schools in Nigeria. Perhaps this may be connected to low career interest among female graduates in teaching profession as compared to their male counterparts. Ugah (2007) reported that more men were found in most Nigerian federal universities than females. This gender differential is attributed to the culture and traditions in African countries. Aina (2012) also opined that more men enrolled in Nigerian federal universities than females. The overwhelming majority of them, that is, 165 (83%) were adults between the age-group 21-60. The distribution of educational qualifications of the respondents showed that 82(41.0%) had master degree in Library and Information Science, 58 (29.0%) had PhD degree in Library and Information Science, 35 (17.5%) had Bachelor degree in Library and Information Science, while 25 (12.5%) did not indicate their qualifications. This indicates that a good number of the respondents (MLS and PhD combined) have the requisite qualifications to teach in library and information science schools in Nigeria. Their working experience

ranged between 6 and 26 years and above. 60 (30%) of the respondents have education as their subject background, though there might be some of them having a postgraduate diploma in education. This infers that a little above 30% of the respondents have teaching qualification.

### The Level of Cognitive Styles of the Educators

**Table 2: Cognitive Styles of Educators**

S/N	Cognitive Styles	SD	D	U	A	SA	Mean	Std.
1	I attack a problem in a step-by-step, sequential and orderly fashion	6 3.0%	8 4.0%	9 4.5%	100 50.0%	77 38.5%	4.17	.91
2	The most efficient and effective way to deal with a problem is logically and rationally	7 3.5%	6 3.0%	6 3.0%	110 55.0%	71 35.5%	4.16	.89
3	I generally rely on facts and data when solving a problem	4 2.0%	7 3.5%	7 3.5%	134 67.0%	48 24.0%	4.08	.77
4	I analyse a problem or situation to determine whether or not the facts add up	7 3.5%	7 3.5%	15 7.5%	121 60.5%	50 25.0%	4.00	.89
5	I generally conduct an ordered search for additional information and carefully select the sources of data	2 1.0%	10 5.0%	15 7.5%	140 70.0%	33 16.5%	3.96	.73
6	When I work on a problem involving a complex situation, I break it into a series of smaller, more manageable blocks	3 1.5%	16 8.0%	11 5.5%	126 63.0%	44 22.0%	3.96	.86
7	I consider a number of alternatives and options simultaneously	2 1.0%	10 5.0%	22 11.0%	130 65.0%	36 18.0%	3.94	.76
8	Before solving a problem I tend to look for a plan or method of solving it	5 2.5%	15 7.5%	14 7.0%	129 64.5%	37 18.5%	3.89	.88
9	I attack a problem by examining it in its entirety before I look at its parts	6 3.0%	17 8.5%	15 7.5%	122 61.0%	40 20.0%	3.87	.93
10	I carefully solve a problem by examining it in its entirety in relationship to its parts, before I proceed	11 5.5%	10 5.0%	13 6.5%	128 64.0%	38 19.0%	3.86	.97
11	I solve a problem by first "restricting to" or focusing on the critical issues	6 3.0%	13 6.5%	18 9.0%	133 66.5%	30 15.0%	3.84	.86
12	I generally examine many sources of data, letting my eyes scan through the information while manageable blocks	9 4.5%	11 5.5%	19 9.5%	124 62.0%	37 18.5%	3.84	.94
13	I gather data methodically at a chosen level of detail, and in a logical sequence	7 3.5%	14 7.0%	18 9.0%	131 65.5%	30 15.0%	3.81	.90
14	I have an abundance of ideas and an inquisitive nature	7 3.5%	22 11.0%	26 13.0%	95 47.5%	50 25.0%	3.80	1.05
15	When analyzing a problem, I seem to progress from one step to another in a sequential way	6 3.0%	20 10.0%	16 8.0%	126 63.0%	32 16.0%	3.79	.93
16	I seem to return to the same source of data several times, deriving different insights each time	4 2.0%	22 11.0%	29 14.5%	111 55.5%	34 17.0%	3.75	.94
17	I generally sense the size and scope of a problem to produce the "whole picture"	6 3.0%	15 7.5%	36 18.0%	115 57.5%	28 14.0%	3.72	.90
18	I carefully solve a problem by ordering, combining or building its part in order to generate a solution for the whole problem	4 2.0%	26 13.0%	20 10.0%	123 61.5%	27 13.5%	3.71	.93
19	I tend to define the specific constraints of a problem early in the problem-solving process	5 2.5%	21 10.5%	31 15.5%	125 62.5%	18 9.0%	3.65	.88
20	I get a "feel" for a problem or try to "see" it before I attempt a solution	22 11.0%	15 7.5%	14 7.0%	112 56.0%	37 18.5%	3.63	1.19

**Table 2: Cognitive Styles of Educators (cont'd).**

S/N	Cognitive Styles	SD	D	U	A	SA	Mean	Std.
21	When I solve a problem my approach is detailed and organized as a result arriving at a solution is generally a time consuming process	7 3.5%	35 17.5%	26 13.0%	100 50.0%	32 16.0%	3.58	1.06
22	All problems have predetermined “best or right” answers in a given set of circumstances	10 5.0%	25 12.5%	34 17.0%	105 52.5%	26 13.0%	3.56	1.03
23	I would describe myself and so would others as predictable and reliable	12 6.0%	37 18.5%	25 12.5%	93 46.5%	33 16.5%	3.49	1.15
24	I would describe myself as would others as a risk taker	13 6.5%	35 17.5%	36 18.0%	91 45.5%	25 12.5%	3.40	1.11
25	I create pictorial diagrams\visual images while solving a problem	17 8.5%	38 19.0%	26 13.0%	90 45.0%	29 14.5%	3.38	1.19
26	I generally rely on instinctive feelings and other non-verbal cues to help me in the problem-solving process	7 3.5%	39 19.5%	53 26.5%	86 43.0%	15 7.5%	3.31	.99
27	I create and discard alternatives quickly	12 6.0%	45 22.5%	29 14.5%	98 49.0%	16 8.0%	3.31	1.09
28	I am able to solve a problem quickly and effectively I do not spend a great deal of time on the problem solving process	10 5.0%	50 25.0%	32 16.0%	91 45.5%	17 8.5%	3.28	1.08
29	The most efficient and effective way to deal with a problem is to follow ones intuitive feelings	14 7.0%	50 25.0%	26 13.0%	89 44.5%	21 10.5%	3.26	1.15
30	All problems are open ended by nature, allowing for many possible answers or solutions	11 5.5%	53 26.5%	38 19.0%	72 36.0%	26 13.0%	3.25	1.15
31	I store volumes of data in my memory by adding to the image that is already there and then determining how information “fits” (like the relationship between a jigsaw puzzle and its individual pieces)	15 7.5%	43 21.5%	37 18.5%	96 48.0%	9 4.5%	3.20	1.07
32	I have an excellent memory and a good aptitude for mathematics	17 8.5%	51 25.5%	40 20.0%	79 39.5%	13 6.5%	3.10	1.12
33	I have a classification system (small compartments) in which I store information as I solve a problem	16 8.0%	58 29.0%	40 20.0%	68 34.0%	18 9.0%	3.07	1.15
34	I store volumes of data in my memory, much like a computer by compartmentalizing each entry for easy recall	21 10.5%	50 25.0%	37 18.5%	79 39.5%	13 6.5%	3.07	1.15
35	I solve a problem by first “intensifying\increasing” or broadening the scope of the problems	26 13.0%	52 26.0%	28 14.0%	79 39.5%	15 7.5%	3.02	1.22
36	It is my nature to avoid bringing things into existence or shaping or modifying the existing ones in order to effect change	27 13.5%	52 26.0%	37 18.5%	69 34.5%	15 7.5%	2.97	1.20
37	When analyzing a problem, I seem to jump from one step to another and back	26 13.0%	62 31.0%	41 20.5%	57 28.5%	14 7.0%	2.86	1.18
35	I catch myself taking out loud as I worked on a problem	21 10.5%	75 37.5%	41 20.5%	57 28.5%	6 3.0%	2.76	1.07
39	I am comfortable with uncertainty and ambiguity	41 20.5%	67 33.5%	40 20.0%	41 20.5%	11 5.5%	2.57	1.18
40	I am comfortable with the status quo “new ways” are not always better ways	56 28.0%	66 33.0%	27 13.5%	39 19.5%	12 6.0%	2.43	1.25

From the test norm of cognitive styles scale, the total maximum score of 200 is permissible.

A score of 1-66 indicates low cognitive style, 67-132 suggests moderate cognitive style, and 133-200 shows high

cognitive style. Since the mean score of the respondents is ( $X = 140.13$ ,  $SD = 14.46$ , see Table 4.14) which falls within the range of 133-200, one can then conclude that the level cognitive styles of the respondents is high. More importantly, it is apparent from the rating of the items by the respondents as presented in Table 2.

**Patterns of Cognitive Styles of Educators**

**Table 3: Patterns of Cognitive Styles of Educators**

Cognitive Style	Number	Percent (%)
Systematic Style	14	7.0
Intuitive Style	-	-
Integrated Style	15	7.5
Undifferentiated Style	23	11.5
Slit Style	145	72.5
Others	03	1.5
Total	200	100.0

To determine the patterns of cognitive styles of the respondents, the inventory responses/numbers to the appropriate blanks were added together. The scores obtained were later transferred into the cognitive-style inventory interpretation sheet. Each lecturer's degree of systematic specialization as well as degree of intuitive specialization was determined by scanning the number listed against each cognitive style listed one at a time. The style that lists both degrees is the respondent's own cognitive style. For each style, the more extreme degrees of that style were listed at the top.

The result reflects a diversity of cognitive orientations of the respondents. The study reveals that split style has the highest number of respondents 145 (72.5%), followed by undifferentiated style 23 (11.5%), integrated style 15 (7.5%), and systematic style 14 (7.0%) while none of the respondents identified with intuitive style. Three of the respondents (representing 1.3%) that did not complete Section B of the questionnaire could not be classified. From the result, split style is dominant when compared to other styles. Furthermore, split, undifferentiated, integrated and systematic styles are adopted by the respondents

**Information Needs of the Educators**

Table 4 shows the mean and standard deviation scores of different items measuring the information needs of educators in LIS schools in Nigeria. The results show that educators tend to exhibit high information needs. This is indicated by high mean scores for all 10 statements. The majority of the respondents indicated that they would always need information on: teaching and research ( $X = 3.78$ ); other educational matters ( $X = 3.60$ ); current affairs ( $X = 3.53$ ); health/social welfare ( $X = 3.42$ ); and general administration ( $X = 3.32$ )

**Table: 4: Information Needs of Educators in LIS Schools in Nigeria.**

S/N	Information Needs	NN	N	SN	AN	Mean	Std.
1	Teaching and research	1 .5%	15 7.5%	10 5.0%	174 87.0%	3.78	.59
2	Other educational matters	4 2.0%	20 10.0%	27 13.5%	149 74.5%	3.60	.75
3	Current affairs	4 2.0%	20 10.0%	43 21.5%	133 66.5%	3.53	.76
4	Health\Social welfare	5 2.5%	17 8.5%	67 33.5%	111 55.5%	3.42	.75
5	General administration	6 3.0%	32 16.0%	55 27.5%	107 53.5%	3.32	.85
6	Governmental\Political issues	4 2.0%	36 18.0%	65 32.5%	95 47.5%	3.26	.82
7	Community service	2 1.0%	28 14.0%	95 47.5%	75 37.5%	3.22	.72
8	Business and economic affairs	4 2.0%	30 15.0%	91 45.5%	75 37.5%	3.18	.76
9	Technical\Scientific	5 2.5%	37 18.5%	97 48.5%	61 30.5%	3.07	.77
10	Environmental management	5 2.5%	47 23.5%	83 41.5%	65 32.5%	3.04	.81

\*Always needed (AN) = 4, Sometimes needed (SN) = 3, Needed (N) = 2, and Not needed (NN)

= 1



### Major LIRs Utilized by the Educators

Table 5 shows the mean and standard deviation scores of utilization on LIRs by the educators. The major LIRs utilized by the respondents are books ( $X = 3.57$ ), Internet facilities ( $X = 3.23$ ), journals ( $X = 3.18$ ), newspapers/magazines ( $X = 3.09$ ), computers ( $X = 3.04$ ), and dictionaries ( $X = 3.02$ ). In addition, bibliographies, atlases/maps, reports, biographies, directories, manuals, almanacs and gazettes are LIRs that are occasionally utilized by the respondents.

**Table 5: Utilisation of Library Information Resources by Educators**

S/N	Utilization of LIRs	NU	OU	HU	VHU	Mean	Std.
1	Books	6 3.0%	13 6.5%	43 21.5%	138 69.0%	3.57	.75
2	Internet facilities	8 4.0%	36 18.0%	58 29.0%	98 49.0%	3.23	.88
3	Journals	6 3.0%	35 17.5%	76 38.0%	83 41.5%	3.18	.83
4	Newspapers\Magazines	9 4.5%	34 17.0%	86 43.0%	71 35.5%	3.09	.84
5	Computers	11 5.5%	49 24.5%	61 30.5%	79 39.5%	3.04	.93
6	Dictionaries	4 2.0%	54 27.0%	76 38.0%	66 33.0%	3.02	.83
7	Theses\Dissertations	10 5.0%	54 27.0%	78 39.0%	58 29.0%	2.92	.87
8	Encyclopedia	8 4.0%	68 34.0%	73 36.5%	51 25.5%	2.83	.86
9	CD-ROM facilities	19 9.5%	57 28.5%	67 33.5%	57 28.5%	2.81	.96
10	Computer printouts	33 16.5%	49 24.5%	49 24.5%	69 34.5%	2.77	1.10
11	Conference proceedings	13 6.5%	73 36.5%	74 37.0%	40 20.0%	2.71	.86
12	Radio\Television	36 18.0%	54 27.0%	52 26.0%	58 29.0%	2.66	1.08
13	Abstracts\Indexes	9 4.5%	104 52.0%	63 31.5%	24 12.0%	2.51	.76
14	Handbooks	15 7.5%	103 51.5%	54 27.0%	28 14.0%	2.48	.83
15	Bibliographies	15 7.5%	117 58.5%	49 24.5%	19 9.5%	2.36	.76
16	Atlases\Maps	15 7.5%	131 65.5%	39 19.5%	15 7.5%	2.27	.71
17	Reports	25 12.5%	116 58.0%	44 22.0%	15 7.5%	2.24	.77
18	Biographies	22 11.0%	121 60.5%	44 22.0%	13 6.5%	2.24	.73
19	Directories	17 8.5%	132 66.0%	44 22.0%	7 3.5%	2.20	.64
20	Manuals	17 8.5%	137 68.5%	34 17.0%	12 6.0%	2.20	.67
21	Almanacs	23 11.5%	129 64.5%	36 18.0%	12 6.0%	2.19	.71
22	Gazettes	43 21.5%	102 51.0%	34 17.0%	21 10.5%	2.16	.88

\*Very heavily utilized (VHU) = 4, Heavily Utilized (HU) = 3, occasionally utilized (OU) = 2, Not utilized (NU) = 1.

### Educators' Level of Teaching Effectiveness

Educators in library and information science schools in Nigeria tend to exhibit high level of teaching

effectiveness (Table 5). This is premised on the high ratings given to items 1 - 11 (>3.40) which indicated that teaching effectiveness was based on crucial factors that can bring about success in teaching like expertise of the lecturer ( $X = 3.65$ ), educator's personal integrity and character ( $X = 3.57$ ), educator's use of the appropriate teaching method and strategy ( $X = 3.55$ ), clarity of the educator's explanation ( $X = 3.54$ ), clarity of the curriculum in stating course objective, course outlines and parameters for grades ( $X = 3.46$ ), communication skills of the educator ( $X = 3.43$ ), human relations of the educator ( $X = 3.43$ ), regular use of continuous assessment as part of final score in the course examination by the lecturer ( $X = 3.41$ ), class management and control of the course educator ( $S = 3.41$ ), educator's respect for students individual differences ( $X = 3.41$ ), and fairness of question and scoring procedure of the educator ( $X = 3.40$ ). Furthermore, from the test norm of teaching effectiveness scale, the total maximum score of 110 is permissible. A score of 1 - 36 indicates low teaching effectiveness, 37-72 indicates moderate teaching effectiveness and 73 - 110 indicates high teaching effectiveness. Since the mean score of the respondents is ( $x = 74.73$ ,  $SD = 19.30$ ) and falls within the range of 73 = 110, one can therefore deduce that the teaching effectiveness of the respondents is high.

**Table 5: Teaching Effectiveness of the Educators.**

S/N	Teaching Effectiveness	Poor	Fair	Good	Very good	Excellent	Mean	Std.
1	Expertise of the course teacher	14 7.0%	13 6.5%	54 27.0%	67 33.5%	52 26.0%	3.65	1.14
2	Teachers personal integrity and character	20 10.0%	18 9.0%	44 22.0%	65 32.5%	53 26.5%	3.57	1.25
3	Teachers use of the appropriate teaching method and strategy	16 8.0%	18 9.0%	48 24.0%	77 38.5%	41 20.5%	3.55	1.15
4	Clarity of teachers explanation	17 8.5%	15 7.5%	53 26.5%	72 36.0%	43 21.5%	3.54	1.16
5	Clarity of the curriculum in stating course objective, course outlines and parameters for grades	22 11.0%	10 5.0%	55 27.5%	80 40.0%	33 16.5%	3.46	1.16
6	Communication skills of the teacher	19 9.5%	16 8.0%	63 31.5%	63 31.5%	39 19.5%	3.43	1.17
7	Human relations of the teacher	20 10.0%	24 12.0%	47 23.5%	68 34.0%	41 20.5%	3.43	1.23
8	Regular use of continuous assessment as part of final score in the course examination by the teacher	16 8.0%	13 6.5%	65 32.5%	85 42.5%	21 10.5%	3.41	1.03
9	Class management and control of the course teacher	14 7.0%	22 11.0%	60 30.0%	76 38.0%	28 14.0%	3.41	1.08
10	Teachers respect for students individual difference	23 11.5%	22 11.0%	48 24.0%	64 32.0%	43 21.5%	3.41	1.26
11	Fairness of question and scoring procedure of the teacher	16 8.0%	20 10.0%	63 31.5%	71 35.5%	30 15.0%	3.40	1.11
12	Teachers class attendance and punctuality	18 9.0%	21 10.5%	51 25.5%	85 42.5%	25 12.5%	3.39	1.12
13	Teachers stimulation of the students interest in this course	18 9.0%	16 8.0%	62 31.0%	79 39.5%	25 12.5%	3.38	1.09
14	Adequacy of the course materials	20 10.0%	15 7.5%	67 33.5%	72 36.0%	26 13.0%	3.35	1.11
15	Teachers ability in relating course materials to real life situation	24 12.0%	17 8.5%	56 28.0%	72 36.0%	31 15.5%	3.35	1.20
16	Clarity of evaluation criteria of the teacher	21 10.5%	18 9.0%	56 28.0%	81 40.5%	24 12.0%	3.35	1.13
17	Time management of the course teacher	21 10.5%	21 10.5%	60 30.0%	64 32.0%	34 17.0%	3.35	1.19
18	Clarity of teachers presentation	21 10.5%	22 11.0%	60 30.0%	62 31.0%	35 17.5%	3.34	1.20
19	Relevant of the course materials to the course outlines	21 10.5%	16 8.0%	67 33.5%	69 34.5%	27 13.5%	3.33	1.13
20	Quick feedback to students on graded assignments, class tests and examination by the course teacher	27 13.5%	25 12.5%	46 23.0%	74 37.0%	28 14.0%	3.25	1.24
21	Teachers record of students class attendance	22 11.0%	21 10.5%	65 32.5%	69 34.5%	23 11.5%	3.25	1.14
22	Adequacy of the tutorial hours and methods	18 9.0%	26 13.0%	70 35.0%	64 32.0%	22 11.0%	3.23	1.10

**Cognitive Styles, Information Needs and Utilization of LIRs of the Educators**

There are significant relationships between the cognitive styles ( $r = 0.402, p < 0.05$ ); information needs ( $r = 0.485, p < 0.05$ ); utilization of LIRs ( $r = 0.427, p < 0.05$ ) and teaching effectiveness of the respondents as shown in Table 6.

**Table 6: Summary of Test of Significant Relationship among the Variables of Interest**

Variable	N	X	SD	Teaching Effectiveness (r)	Sig p
Cognitive Styles	200	140.13	14.46	0.402	0.004*
Information Needs	200	33.51	4.184	0.485	0.009*
Utilization of LIRs	200	58.67	10.211	0.427	0.002*
Teaching Effectiveness	200	74.73	19.301	1.000	-

\*LIRs = Library information resources

The results from the data analysis in Table 7 reveal that the three independent variables (cognitive styles, information needs and utilization of LIRs) had significantly predicted the teaching effectiveness of the respondents ( $F = 5.294, P < 0.05$ ). The result also shows that cognitive styles, information needs and utilization of LIRs had significant multiple correlation (adjusted  $R = 0.7956, P < 0.05$  with the teaching effectiveness of the respondents and a multiple adjusted  $R^2$  of 0.633. This means that 63.3% of the variance in teaching effectiveness of the respondents was accounted for by the independent variables when taken together.

**Table 7: The joint contribution of the independent variables (Cognitive styles, Information needs, and utilization of library information resources) to the prediction of teaching effectiveness among Educators in Library and information schools in Nigeria.**

	Adjusted R			Adjusted R Square	Std. Error of the Estimate
	0.7956			.633	18.9758
A N O V A					
Model	Sum of Squares	DF	Mean Square	F	Sig. P
Regression Residential Total	5307.227	3	1769.076	5.038	.022
	68826.648	196	351.156		
	74133.875	199			

Data analysis as shown in Table 8 reveals that each of the independent variables: cognitive styles ( $B = 0.242, p < 0.05$ ); information needs ( $B = 0.670, p < .05$ ), and utilization of LIRs ( $B = 0.244, p < .05$ ) significantly facilitated teaching effectiveness of the respondents. More so, cognitive styles (Beta = 0.181) had the highest relative contribution of 18.1%, followed by information needs (Beta = 0.145) with relative contribution of 14.5%, and utilization of LIRs (Beta = 0.129) with relative contribution of 12.9% to the prediction of the teaching effectiveness of the respondents.

**Table 8: Relative contribution of the independent variables (Information needs, Library information resources accessibility and Library information resources utilization) on teaching effectiveness among Academic staff in Library and information schools in Nigeria.**

Model	Unstandardized Regression Coefficient		Standardized Regression Coefficient	T	Sig. P
	B	Std. Error	Beta Contribution		
(Constant)	10.328	16.674		3.452	.001*
Cognitive styles	.242	.093	.181	2.607	.010*
Information Needs	.670	.328	.145	2.043	.042*
Utilization	.244	.057	.129	4.281	.021*

\* Sig. at  $p < 0.05$

**Discussion of the Findings.**

Studies have confirmed the influence of cognitive styles on the educators' performance in teaching and how knowledge of learners' cognitive styles can assist educators to be effective in the classroom. If content and learning materials are presented in tandem with a student's cognitive style, this may likely affect the students' learning potential and their attitudes toward learning in general. Split style, undifferentiated style, integrated style and systematic style are the cognitive styles adopted by the educators, and that split styles is found to be dominant. Respondents' level of cognitive styles is high. Findings have added to the volume of literature in support of the position that cognitive styles affect teaching styles. This is in line with the submissions of Kozhevnikov (2007), Sternberg and Zhang (2001) that cognitive styles have predictive power for academic achievement

Educators in LIS schools in Nigeria are unique users of information because they happen to be in an academic environment. Information is said to be job related. Therefore educators need specific information requirements relevant to the job they perform which involves teaching, research, and community service among others. In the process of instructional delivery and conducting research, educators acquire needed information from various sources. Educators' information needs cut across academic, administrative, political, economic, scientific and technological and these are based on the components of their academic environment. The study revealed that the major types of information needs for teaching effectiveness of the respondents were teaching and research, other educational matters, current affairs, health/social welfare, and general administration. Akinola (2009) and Oyedum (2009) established that lecturers in universities in Nigeria prefer and acquire information on teaching, and research among others.

Furthermore, the study found that the major LIRs utilized for effective teaching of the respondents are books, Internet facilities, journals, newspapers/magazines, computers, and dictionaries. The finding is in line with Watson (2004), Echezona (2005) and Otebelu (2009) who report that scholars prefer the use of print materials such as encyclopaedia, dictionaries and periodicals for teaching and research. Anas (2012) also notes a trend among the respondents studied that most of them prefer electronic resources as compared to the conventional resources but at the same time, they strongly believe that the conventional resources should also be maintained side by side. This implies that both print and e-resources are still good materials for the university libraries.

The study also found that the respondents tend to exhibit high level of teaching effectiveness. This implies that they could be seen as impactful educators. Hammer et al., (2010) and Paolini (2015) posit that the most impactful educators pride themselves on having positive student interactions in and out of the classroom, provide prompt feedback, and encourage teamwork amongst students. In addition, they obtain and implement constructive feedback, and use different techniques to encourage active learning oriented towards students becoming self-directed, independent, and critical thinkers. Just as students require support to ensure maximum achievement of educational objectives, lecturers who are delivering instruction require an institutional support structure that enables and encourages them to teach with excellence and effectiveness.

One of the major findings of this study is that there is a significant relationship among cognitive styles, information needs, and utilization of LIRs and teaching effectiveness of the respondents. Okoronka (2009), Fall (2003), Onunkwo and Ekeh (2005) cited in Okoronka and Wada (2014) among others have confirmed the influence of cognitive styles on teachers/students classroom performances. Anyaogu (2015) and Emasealu (2014) assert that information needs are job related. The primary responsibility of the respondents is teaching and that they need LIRs for teaching. This implies that there is a relationship between information needs and teaching effectiveness of respondents. Odunlade (2012) was of the opinion that accessibility of LIRs is a prerequisite to utilization. The fact that a lecturer is aware of the existence of an information resource does not imply that the educator has access to it or utilizes it. However, availability of LIRs would always lead to accessibility. Emasealu (2014) reports that utilization of LIRs is determined by the duty performed and the kind of profession to which one belongs. Educators as academics utilize LIRs for teaching. This further lends credence to the fact that a significant correlation exists between utilization of LIRs and teaching effectiveness of the respondents.

Another major finding of this study is that the joint contributions of cognitive styles, information needs, and utilization of LIRs are significant to the teaching effectiveness of the respondents. It has been established that each of the independent variables (cognitive styles, information needs, and utilization of LIRs) predicts significantly the teaching effectiveness of the respondents. The implication is that the independent variables (cognitive styles, information needs, and utilization of LIRs) are significant predictors of teaching effectiveness of the respondents.

### **Conclusion and Recommendations**

This study to a large extent has provided enough evidence to show that the joint contributions of cognitive styles, information needs, and utilization of LIRs are significant to the prediction of teaching effectiveness of the respondents. Everybody, scholars, researchers, parents, educators, policy makers and even students are interested in the quality of learning outcome in schools. Therefore more focus needs to be on the practice of teaching since every lesson presented by educators in institutions of higher learning is delivered within an academic environment. In the field of education, researchers have argued that cognitive styles have predictive power for academic achievement beyond general abilities. This implies that educators are expected to be flexible in teaching in order to accommodate the diverse nature of individual differences and cognitive orientations.

Information is a critical factor at every stage of lesson preparation. Educators in LIS schools in Nigeria need sufficient, current and timely LIRs for effective teaching, which are expected to be well organized and accessible for effective utilization. There exists a link between information needs and the jobs performed.

Educators perform teaching functions and that they are always in need of LIRs for teaching, research and public service. Availability and accessibility of LIRs are preconditions to utilization of LIRs. The university libraries are established to provide LIRs to meet the information needs of the educators. Based on the findings of the study, it is recommended that the university authorities should consider cognitive styles, information needs, and utilization of LIRs for teaching effectiveness of educators. Furthermore, professional development should be encouraged among educators for effective teaching. As such, functional university libraries should be established to supply much needed LIRs for teaching effectiveness of educators.

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