

## CHALLENGES OF ONLINE DATABASE SEARCHING AMONG MEDICAL STUDENTS OF KADUNA STATE UNIVERSITY, KADUNA-NIGERIA

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**Abstract** - *This study set out to explore the challenges medical students of Kaduna state university encounter during online databases searching. Using three constructs of Vygotsky social development theory as a guide to understand and identify strategies for overcoming the challenges. A qualitative research methodology and case study research design was adopted. Data were collected using in-depth interview to study ten medical students out of 29 whom were selected through purposive sampling technique. Data from this study was analyzed using thematic Analysis. Findings from the study revealed that, medical students of Kaduna state university encounter challenges during online database searching due to lack of information literacy skills to strategize online database search and evaluate clinical journals, technical difficulties, such as frequent power outage, poor network, system problem. Further findings also revealed that, medical students believed librarians are not easily accessible for help during online database searching, revealing that he is the only one managing the library and always busy. Findings revealed that medical students are assisted by librarians in the library through referral service and user orientation. Following these major findings, it was recommended that, stable power supply and backup systems, the management of KASU should introduce information literacy course for all new medical students. The courses should be taken by library staff and staff from computer science department. Additional library staffs should be provide to attain to students always for quality services, user satisfaction and retention*

**Key Words:** Kaduna State University Students, Searching, Online database, Medical students, Challenges encountered.

### 1. INTRODUCTION

Online databases searching has become a common learning activity in university teaching and have the advantage of providing services that does not require the students to be physically present (Lesk, 2005). With databases available online, students can easily access information resources remotely to solve a learning process or to conduct a research on any topic and improve their knowledge (Kumar 2012). This is why university libraries have invested a huge sum of money in online databases subscription, so that students can gain access to them irrespective of their location (Akpoido 2014). Despite the importance of online databases and the huge sum of money invested in online databases subscription, many studies reported the challenges or difficulties face by the information seekers or students to locate, evaluate, communicate, use and access quality information during online databases searching (Bashorun, et al. 2011; Derosa et al 2005; Wilson, 2000; timothy 2014).

To understand the challenges face or encounters by the students during online databases searching, scholars have explored the problem from different perspectives: lack of orientation, problem of low or non-use, poor skill in navigating online databases, information overload, lack of information literacy skills, over usage of web resources by users, (Tsai and Tsai, 2003; Jones and Madden 2002; Wilson, 2000; Kadli and Kumbar, 2011). Nevertheless, these studies are presented in isolation without the use of any theoretical framework. While these studies have helped in understanding issues of challenges students encounter in online databases searching. However, to have a better understanding of this problem. This study set out to explore the challenges medical students experience in online databases searching. Using Vygotsky social development theory, to identify strategies for overcoming the challenges.

#### 1.2 Online database searching

Timothy (2014) define online database searching as finding materials of an structured nature that satisfies an information need from within large collections stored on networked computers. Online database means providing data or specific information, retrievable or otherwise, to any person, in digital form through a computer network (Hillary 2009). Database search is characterized as a process in which a user describes a request via a query and the system

locate that matches or satisfy the request (Chen et al, 1998). Online database searching depends on search strategy that relates to a query. According to Kadli and Kumbar (2011) define online database searching as information technology which has offered today's information seekers different opportunities to search and access the materials or information in variety of formats, including commonly-available electronic information sources, such as CD ROMs, online-Database, web-OPACs and the internet. Madden (2002) conducts a study on databases use among medical students, which reveals that, 73% of the medical students conduct online database search using the internet in contrast to 9% of the students who uses physical materials or resources in the library.

This shows that majority of the medical students of the study prefer online database searching over physical information in the library. Efforts have been made by institutions including teaching hospital to provide access to these internet-based information resources electronic libraries, like the Medical E-library in BarauDikko Teaching Hospital of Kaduna State University.

### 1.3 Medical Library, BarauDikko Teaching Hospital of Kaduna State University

Kaduna state university medical library is located at BarauDikko Teaching hospital and designed to provide sustainable access to up-to-date medical information resources in both electronic and physical format. It also provides medical students with access to varied Medical online databases such as, link to web science database, Hinary database, ScienceDirect, EBSCOHOST, Scopus, springer and Nation medicals press database are also provided where medical student can access the surface web using search strategies and search engines such as, Google, Ask.com, Aol.com, Bing, DuckDuckGo, etc. However, due to the lack of information literacy and information overload caused overabundance of online databases and hence, searching through the pool of these databases has become a complex and difficulty to medical students of Kaduna State University (KASU).

### 1.4 Statement of Problem

Information seekers such as students encounter challenges in online databases searching while university libraries have invested in online databases subscription and provide computer based technologies so that students can have access to the services and encourage quality teaching, learning and research (Tsai et al, 2012). Unfortunately, the universities libraries are losing huge sum of money due difficulties face by the students on how to locate, evaluate, communicate, access and use quality information during online databases searching (timothy 2014). However, several studies have found out that there are generally challenges or difficulties online databases searching (Bashorun, et al. 2011; Derosa et al 2005; Wilson, 2000; timothy 2014).

Nonetheless, to overcome the difficulties student face or encounters during online databases searching, scholars have explored the problem from different perspectives: lack of information literacy skills, over usage of web resources by medical students, information retrieval system (IRS) and disorientation problems (Jones and Madden 2002; Wilson, 2000; Kadli and Kumbar, 2011). However, these studies are presented in isolation without the use of any theoretical framework. While these studies have helped in understanding issues of challenges students encounters during online database searching. Using Vygotsky social development theory, this study set out to investigate the challenges medical students of Kaduna State University encounters during online databases searching and also identify strategies for overcoming the challenges.

### 1.5 Research Questions

1. What type of online databases is available for medical students in medical library of Kaduna State University?
2. What are the challenges medical students encounters during online databases searching in medical library of Kaduna State University?
3. How effectively does three constructs of Vygotsky social development theory explain the challenges medical students of Kaduna State University encounters during online databases searching?

### 1.6 Vygotskys' Social Development Theory

It is always important that a good research is linked to theory. This is because theory is used for choosing a methodological approach as well as for developing analytical tools for the research. There are a number of theories that can be used to explain the challenges medical student face or encounters during online databases seaching. For the purpose of this study, Vygotskys' Social Development Theory would be used to aid in the choice of the methodology and also in the analysis. The significance of the theory to the study and previous studies that adoted the theory will also be explained. The basic concern and purpose of this theory is knowledge construction through social interaction. The theory was built around some basic constructs. For the purpose of this study, three basic constructs are adopted: construct of MKO, construct of ZPD and construct of social interaction. These constructs are discussed below:

### 1.7 More Knowledgeable Other (MKO)

The More Knowledgeable Other (MKO) construct is somewhat self-explanatory. It refers to anyone who has a better understanding or a higher ability level than the learner with respect to a particular task, process, or concept. The key to MKO is that they must have more knowledge about the topic or task being learned than the learner does. The MKO can raise the learner's competence through the Zone of Proximal Development (ZPD). (Vygotsky, 1998).

### 1.8 Zone of Proximal Development (ZPD)

Vygotsky define the zone of proximal development as the distance between the actual development level and the level of potential development. In Vygotsky's theory, the level at which the learner can do or achieve a given task independently is identified by scholars as the learners' "level of actual development". It is at this level that a standard IQ test measures. More so, in Vygotsky's theory, what the learner can do in future after receiving help from MKO is known as the learners' "level of potential development". To further emphasize, the learner can only reach this level when he/she received assistance of the MKO (Blanton, 1998; Kearsley, 2005) meanwhile, in between the level of actual development and the level of potential development of the learner is the Zone of Proximal Development (ZPD). This refers to the level or zone at where the learner cannot successfully perform or perform with difficulties a given task unless he is assisted by MKO. According to (Vygotsky, 1987), it is at this level that learning takes place.

## 2. SOCIAL INTERACTION

According to Vygotsky's theory, much important learning by the children occurs through social interaction with a skillful tutor or More Knowledgeable Other (MKO). The social interaction occurs within the Zone of Proximal Development. Some scholars adopted Vygotsky's theory to investigate issues related to online learning, information seeking and information searching.

### 2.1 Previous studies that adopted Vygotsky Theory

Several scholars adopted Vygotsky theory to investigate online learning and online search from different disciplines. This section discussed some of the previous studies that adopted Vygotsky Theory of social development. Jalil, et al (2008) conducted a study using vygotsky theory to find out if tutors and students offer assisted performance within online discussion threads. The study asked the following research question: do tutors and students offer assisted performance within online discussion threads? What types of assistances are provided by both tutors and students? The study adopted qualitative research methodology. The study found out that, tutors remains the main source of learning support in terms of providing assistance to studies. It also ascertained that both tutors and students offer assistance but it is more of simpler form of scaffolding and feedback.

A study by Paulus (2005) conducted a study on collaborative and cooperative approach to online learning in university of Tennessee, U.S.A. The study adopted Vygotsky's theory of social development. Therefore the study asked the following research questions: do small online groups take a collaborative or cooperative approach to completing assigned tasks when specifically asked to collaborate? Is there a difference in the approach used by groups completing different types of task? The study adopted qualitative methodology. Findings from the study

revealed that despite instructions to the contrary, the vast majority of the discussion (61%) was not collaborative. And also that synthesis groups exchanged more conceptual moves (62%) than non-conceptual moves (38%). This reveals an overall focus on collaboration.

Another study conducted Tarman and Tarman (2011) used Vygotsky theory of social development to studied children's play and social interaction with the aim to discover the relevance of teachers' involvement in the process. The study asked the following questions: should teacher be involved in children play? How might play centers or classrooms be arranged and equipped?; what are the types of teacher involvement?; and what are the pros and cons of this involvement? And if the involvement is necessary, when and how it should happen? The study used qualitative methodology. Findings from the study revealed that early childhood teacher have important role to promote children Play; the best play time should last 30 to 60 minutes for pre-schooners and kindergarten age; teacher need provide large open space and materials that promote participation for block and dramatic play and teachers are in position to help children build new experience, extend and enrich ideas for play as well as finding way to stimulates children's imaginative play.

Furthermore, Bliss, Askew and Macrate (1996) Conducts study using Vygotsky social development theory on the application of the concept of scaffolding and Zone of Proximal Development (ZPD) to schooling context in three domains; mathematics, science and technology involving teachers working with pupils of 9 to 11 years old. The study used qualitative methodology and asked the following questions: How much time is required to internalize, own, and use new approaches to teaching? How does the model of scaffolding of everyday knowledge transfer to school knowledge? And how can lessons be observed and scrutinize for reasons for absence of scaffolding? Findings from the study revealed that teachers were able to plan lessons with scaffolding but find it difficult to implement it. Findings also revealed that teachers could see no intrinsic differences in scaffolding the different subject areas being studied: further findings also discovered that the teachers recognized the importance of working together but in live observation they don't practice such. Thus, their focus was teaching rather than the pupils learning; the study also revealed a relative absence of scaffolding in most lessons. Two factors became significant to that: the teaching strategies used by teachers and their subject knowledge.

## 3. RESEARCH METHODOLOGY

This paper used qualitative methodology to gather data necessary to answer the proposed research questions and case study research design was also adopted to study medical students using medical library in BarauDikko teaching hospital of Kaduna State University, on the challenges they face during online databases searching, their perception on librarians and how they can be helped.

A case study method selects a small geographical area or a very limited number of individuals as the subjects of study. Therefore, case study as research design allows for an in-depth examination of events, phenomena, or other observations within a real-life context for purposes of investigation, theory development and testing, or simply as a tool for learning (Marshal 2006). It allows the researcher to develop categories and themes surrounding the statements of the research participants, provide a description of the experiences, and extracts information that addresses the primary research question (Maxwell, 1996). Therefore, a case study method are known to be best suited for studies whose purpose is to learn from participants about their difficulties or experience in their own settings and the meanings or interpretations they attach to their experience. The purpose of this study is to gain a thorough understanding of the challenges medical students face during online databases searching in medical library of BarauDikko teaching hospital of Kaduna state university, by learning first-hand information from them. Furthermore, purposive sampling technique was adopted to select ten (10) respondents out of twenty nine (29) medical students base of three criteria; (1) must be a medical student, (2) must be in 400 level and (3) must be used the online subscribed databases in the library and they were purposely selected as they came into the medical library to conduct research, reading or browsing on the available online database subscribed.

**3.1 Data collection**

The data necessary for achieving the objectives of this study was collected using in-depth interview. The interview session began with administration of informed consent form. The consent form solicited participants’ permission to voluntarily participate in the interview and it sought authorization to record the conversations. More so, respondents were assured of privacy and confidentiality concerning their responses. The total duration of all the initial interviews amounted to 12 hours of conversations. During the interviews the researchers used probing technique to solicit for in-depth information and/or to build on their responses. This provided the researchers with rich in-depth information. By the time 10 participants were interviewed, the data was saturated. Marshal (2006) explains data saturation as the point when there are no new categories, themes, or explanations emerging. The data were transcribed for analysis.

**3.2 Data analysis**

In this study, the analysis of interview transcripts was based on inductive approach process through identifying patterns in the data by means of thematic codes. To accomplish these tasks, the researcher followed the three-phase procedure in thematic Analysis as described by Miles and Huberman (1994) which includes: (a) data reduction, (b) data display, and (c) conclusion drawing and verification. Using these three coding steps, the narratives were read and

re-read thoroughly and considered significant statements narrated by respondents to develop meaningful themes that reports about the challenges medical students of BarauDikko Teaching Hospital of Kaduna State University encountered during online databases searching. The narratives were coded into 105 open codes (meaning derived directly) recoded in the spreadsheet. The 105 open codes were condensed into 13 lower categories and identified as classification subcategories. The classification sub-categories were then further collapsed into 6 emergent categories. The quotes from the participants are written, to some extent, in everyday vernacular. They are presented in this style to allow the reader an opportunity to draw on the reflection of thought given to the participants’ responses. The strategy for the data analysis is summarized in the table below as adopted in this study from Miles and Huberman (1994) p.429

**Table 1. Summary of data analysis adopted in this study**

Data Reduction	Data Display	Conclusion Drawing & Verification
Initial read and re-read interview transcripts while searching for similarities and differences in themes by underlined using pen (open code). Recoded in a plain-sheet of papers. The aim is to condense the data in to a smaller, more manageable size.	Data display began by listed all the codes and Creating meaning out of relevant text segment (open codes) Narratives coded into 105 Open codes. Related open codes were identified and grouped together to form sub-categories. 13 sub-categories	18 number of sub-categories labels and narrowing down to final overarching themes or categories in to 6 Emerging categories (wider categories). The final categories were then narrowed and Fitting wider categories into 3 theoretical constructs.

Source: Summary of data analysis adopted from Miles and Huberman (1994) p.429

Next paragraph described the result of the study. The categories, sub-categories and quotation from the participants are written to some extent in everyday vernacular and were arranged properly. They are presented in this style to allow the reader an opportunity to draw on the reflection of thought given to the participants’ responses.

**3.3 Findings**

**Availability of subscribed online scholarly databases** This category provides some explanations quotes from the participants’ responses on various types of subscribed online scholarly databases available for medical students in medical library, as mention by the following respondents: “i only knew databases such as, hinari, springer and national university commission

virtual library” another respondent interviewed mention databases like “science Direct, ebscohost, Scopus, hinari, proquest”

### 3.4 Lack of information literacyskills

This category contains narratives explaining the challenges medical students encounter during online databases searching in medical library and inadequate skills require for the medical students to recognize and identify their information needs, ascertain where to find the information that will meet the identified need, how to find the information and how to evaluate the quality of the information when obtained and also how to use it effectively and efficiently. This category is generated from three sub-categories. (1) Inadequate of search strategy (2) lack of evaluation skills (3) information explosion, these sub-categories are explained below.

### 3.5 Inadequate of search strategy

This sub-category explaining lack of search skills or strategy during online database searching, which can determine the success or failure about the information needed on online database, to search for information on the database online, a person needs adequate knowledge or skills on how to strategize the search, as expressed by the following respondents: “most of the publications on the database are very specific, you either enter by title or by author, or by publisher and i don’t know how or where to enter” Lack of online databases search strategy knowledge can results to less successful or unsuccessful search, as explained by these respondents “this database is not giving me directly what i wanted...” Another respondent revealed that: “I always find it difficult to get what I wanted” Additionally, a respondent affirmed that “sometimes if there is current information you hardly find it in the database.”

### 3.6 Lack of evaluation skills

This sub-category also explained narrative quoted from the respondents over the skills require to assess information from the database which can results to waste of time during online databases searching, as described the following respondents: “ sometime i use to spent mothan two hour before getting the good articles especially in Hinary database” In the same vein, another respondent, further concerned that: “when we are given an assignment, our lecturers directed us to come to the library and search for three or more articles, we hardly get two articles and even when we get it, we can’t say or don’t know wither the articles are relevant or not” another respondents revealed that: “before you get an articles you have to navigate through and it is not fast as i want.”

### 3.7 Information explosion

This sub-category contains narratives from the respondents on challenges encounter during online database

searching this sub-category revealed that too much information (information overload) encountered when searching for just specific journal in the databases. Much of this information is not relevant to the user’s need, as mention by these respondents: “sometime when am searching specific journal many irrelevant publications would appear” Another respondents expressed that: “the challenge I face during online database searching is that, sometime i use to get confused and ended of getting nothing because of too much publication on the databases” this respondent further stated that: “i use to encounter a lot of difficulties because the information is so enormous and it gives me much more”. In the same vein this respondent discovered that “I don’t know why many irrelevant documents are retrieved on the database when am searching for information”

## 4. TECHNICAL DIFFICULTIES

This category provides some explanations quotes from the participants’ responses on technical problems that interrupt medical students during online database searching. These technical problems affect the functionality of the retrieval systems which in turn also affects the online databases search process. The category is generated from three sub-categories: (1) system problem (2) network failure (3) power outage

### 4.1 System problem

This sub-category contains narratives from the medical students on the technical issues encounter during online database searching. computer problem is also one of the problems as explained by theses respondent: “one of the difficulties we face during online database searching computer problem, sometime the computer use to restarted and we lost all the journals we got” another respondents claimed that: “sometime there is antivirus that use to block you from accessing important articles, ....respondents further expressed that sometime to save the articles you got is also another problem” apart from the computer restated, this respondents complained that: “sometime when you want click some journals that you browsed the mouse cannot move to the place, it take sometimes before it move, I use to spent some 5 to 10 minute waiting for it”

### 4.2 Network failure

This sub-category contains some explanations from the medical students on the poor network or network problem encounter during online database searching as articulated by the following respondents: “sometime when you are searching for a particular journal on the database you may spend much of your time because of the network problem, the network are very slow”

The problem of network also resulted to low streaming of some clinical video as, expressed by these respondents: “the challenges i face is that sometimes when am watching a

clinical video is not clear or it will not open due to poor network” Another respondent interviewed complained that: “sometime when am searching the database trying to get medical articles it keep showing computer connects to the wrong network” The failure of network sometimes results to medical students not being able to access medical journals, as voiced by these respondents “The challenge i usually face is that, there's no network menu in the menu bar” similarly this respondent discovered his difficulty during database searching as “sometime i can't see medical library wireless network in the list”

#### 4.3 Power outage

This sub-category also explained problem of power irregularity or power failure which to can result to a serious challenge to medical students during online databases searching as indicated by these respondents: “as you know the loss of electricity also meant the loss of searching medical journals, sometime when we are searching databases NEPA will took light” Furthermore, another respondents expressed worry over the power failure. Examples of their responses are as follows: “the challenge we encounter is that, sometime when we are searching clinical journals on the database the light will keep shaking.....the respondents further expressed that the light is off and on and by the time the light is off we all loss what we got from the databases” furthermore, these respondents referred to his challenge to loss of power emergency power generator. These are their story on their own words: “the challenge we face is almost the same with our course mate and the hospital had temporary loss of power and the emergency power generator did not work at all for now, so immediately the took light during online database searching it result to getting nothing on the database, all the documents we got will be disappear and cant fine it”

#### 4.4 More Knowledgeable Others

This category provides explanation quotes from medical students about their perception on those they believe they can help them when they encounter challenges during online database searching. This category is generated from two sub-categories: (1) course mate (2) lecturer (3) medical librarian.

#### 4.5 Course mate

This sub-category contains narratives from medical students explained that they consider their colleague or course mate as helpers during online database searching, as described by the following respondents: “ a times when i face any problem in trying to fine journals on the database i use to ask my fellow students” In addition to that, another respondent explained whom to consult when he face any challenges during online database searching “ I usually consult students (course mate) to help me ” similarly these respondents stated that “sometime we talk to our course

mate when they are knowledgeable on searching articles in the database, but within the library”

#### 4.6 Lecturers

This sub-category provides narratives related to the assistance seek by medical students when they encounter any difficulties during online databases searching. Their responses indicated that when they encounter challenges during online database searching they contact their lectures for assistance, as expressed by the following respondents: “like me if i encounter any difficulty use to communicate with my lecturer and seek for help” similarly to these respondents: “regularly we use to consult prof. Ibrahim (my lecturer) to help me because his always available and professor in the field”” In addition, another respondent expressed that: “when we encounter any challenges during online database searching we contact our lectures and talk to them to help me out, because it's our lecture” this respondent revealed that: “sometime our lecturers told us to go to the library and search for clinical journals to read or summarize, when we encounter any problem during searching we told them”

#### 4.7 Medical librarian

This sub-category also explains the perception of medical students on those they believe can help them when they encounter challenges during online database searching, as commented by these respondents: “sometimes when i face challenges i ask the librarian, the respondents further said, especially when am trying to download some journals” in the same vein, another respondents interviewed explained that: “.....i call the librarian for help” furthermore, these respondents believed that: “when i encounter any challenges i contact librarian sometimes”

### 5. MEDICAL LIBRARIAN IS INACCESSIBLE

This category were originated in the course of trying to find out why medical students feel better to seek help from their course mate and lecturers first to assist them overcome a challenge than going to a librarian or vice versa. And it is originated from two sub-categories. (1) Medical librarian is busy (2) Medical Librarian is Database Partitioning

#### 5.1 Medical Librarian is busy

This sub-category provides explanations on the interpretations of medical students on why they feel it is better for them to contact their fellow student and lecturers than go to the medical librarian for help. These are their story on their own words: “i notice that this library (medical library) is managed by only on staff and a time his engaged in doing some other things in the library” Another respondent discovered that: “I discovered that the librarian his busy assisting other students and some lecturers, especially when they want to brow a books” similarly this respondents voiced that: “sometimes the medical librarian is

not around, so I then decided to ask my lecturers during or after lectures time”

## 5.2 Medical Librarian is Database Partitioning

This sub-category provides responses from medical students revealed that they perceived and believed librarians are database separating, managing or dividing and subdividing. When asked why are they choose to seek help from librarians instead of their course mate and lecturers. These are their story on their own words: “Because i believed that, medical librarian knew how database are arranged in order, alphabetically” similarly, these respondents further explained that: “only medical librarian knew where to get clinical video and non-clinical video in the database” Another respondent believed that: “only librarian show you to search using key terms”

## 6. INFORMATION SERVICES

This category contains narratives from the respondents regarding specific services the library have put in place which helps medical students overcome the challenges encountered during online database searching. This category is derived from two sub-categories (1) user orientation. (2) Referral service. These sub-categories are explained below.

### 6.1 User Orientation

This sub-category provides explanations on user education about the services render in the medical library which can help the users in general and particularly for the medical students to overcome challenges they encounter during online database searching by means of educating them. Responses from medical students indicated that they are been helped by the medical librarian during library registration and lending services, as articulated by the following respondents. “where was a time i want to borrow a book, the medical librarian asked me, my library registration number, I said to him (medical librarian) I don’t have any, he said I have to register before taking the book out, he then registered me and told me the services rendered by the library including the available databases for medical students and how to search a surgery journals”

Another respondents further explained that: “there was a time I came to library with my system in order to read, the librarian asked me are you enjoying our network, is it working good? I don’t know that they have network, he (librarian) asked me to come for network register he registered me and told me how to use it, including the available online databases and how to access them” in addition these respondents exposed that: “there was a time he (medical librarian) told me about the network and up-to-date database, he said we now have SPRINGER and show me how to login and search he also told me to inform my fellow students”

### 6.2 Referral service

This sub-category provides response from medical students about experiences in terms of the medical library’s effort to direct users to medical librarian for solution to challenges encountered during online searching, as explained by these respondents: “I saw a list of databases posted on the wall each and every databases contains the password and user ID on the list and there is written note at down in case you have a problem when or during searching” more so, the library do guide the medical students by means of instruction on how to overcome a challenge encountered during online database searching, as voiced by these respondents: “sometime when we meet with the medical librarian he use to said if you have any problem when searching materials please just ask me”

## 7. DISCUSSION OF FINDINGS

This section discussed the research findings under the major category emerged including pertinent quotes from the respondents. The findings were arranged in line with the research question asked in the study, in a convincing manner in order to archive the stated objectives of the study.

### 7.1 Type of online databases is available for medical students in medical library of Kaduna State University

Findings from this study indicated that medical students of Kaduna state university are aware of the various types of subscribed online scholarly databases available for medical students in medical library. Further findings of the study revealed that, science Direct, Ebscohost, Scopus, hinari, proquest, springer and national university commission virtual library databases are the only online scholarly databases available for medical students in medical library. Similar findings were evident in the study conducted by Tarman and Tarman (2011) who reported that, ebscohost, science Direct, Scopus, hinari, proquest, springer as the available online databases subscribed for students to improved their leaning ability.

### 7.2 Challenges medical students encounters during online databases searching in medical library of Kaduna State University

Findings from this study revealed that medical students of Kaduna state university are facing many challenges on the available online scholarly database found in this study and need help during online databases searching in the area of information literacy skills. Further findings from this study indicated that medical students during online database searching encounter too much information resource which they find difficult to navigate through and get what they want. Findings also from this study shown that medical students need adequate knowledge or skills on how to strategize the search, this is because for most of the publications on the database are very specific, a person may

either search by title or by author, or by publisher and medical student need an adequate knowledge how to strategize the search for them to get quality information resources.

Apart from inadequate search strategy and lack of evaluation skills related areas, medical students are affected by technical difficulties which affect the functionality of the systems which in turn also affects the online databases search process. Although all the computers in medical library are new and function very well but due network problem medical students encounter many challenges during online database searching this is because the network server is located at main campus (Kaduna state university) and they always having problem of light, whenever there is no light in the main campus the network in BarauDikko Teaching Hospital cannot work and they always having problem and this problem also affected the functionality of computers most especially in areas of updating antivirus.

When antivirus is not functioning some programs cannot be running very well until the system reboot or restart, sometimes the computer will restated automatically. Restating system automatically also cause difficulties during online database searching and also the network is tend to be slow even though, Kaduna state university has good data network that is widely distributed both in the main campus and BarauDikko teaching hospital, at times, the network tends be very slow due to the number of users which can cause slowness of databases access which is challenging to medical students. Moreover, findings from this study also indicated that, BarauDikko teaching hospital has a problem of electricity sometimes and the emergency power generator did not work at all for now, due to non-function of the emergency power generator in the hospital medical students also encounter difficulty in online database searching. These findings are substantiated by another study conducted by timothy (2014) who reported that, lack of information skills, technical problem, Quitting search, librarian not easy accessible, etc are the challenges encounter by students during online information searching.

### **7.3 Explanation of the three constructs of Vygotsky social development theory about the challenges medical students of Kaduna State University encounter during online databases searching?**

The basic concern and purpose of this theory is knowledge construction through social interaction. The theory was built around some basic constructs. For the purpose of this study, three basic constructs are adopted: construct of MKO, construct of ZPD and construct of social interaction. The three constructs of this theory can effectively explain the challenges medical students encounter during online database searching.

### **7.4 The More Knowledgeable Other (MKO):**

This construct is somewhat self-explanatory. It refers to anyone who has a better understanding or a higher ability level than the learner with respect to a particular task, process, or concept. Findings from this revealed that medical students rely mostly on their course mate for help than seeking help from the librarians. This belief is be far from the students' negative perception that librarian is difficult to access for help because the librarians are always busy in comparison to their course mate and therefore rely more on their fellow students for help since they are easily accessible. Finding from this study also revealed that medical students preferred to seek help from their lectures than seeking help from librarian, this is because they belief that there lectures is always available during lectures hours and they are professors in the field. More so, findings revealed that medical students seek help from their lecturers because their lecturers directed them to go the library and look for some journals.

Further findings from this study also discovered that medical students believe librarian can help them when they encounter challenges during online database searching. Findings also indicated that, this belief by medical students on librarians as helpers during online database search is partially linked to another perception that, librarian are database partitioning. That is medical students seek help from librarian simply because they believe that librarian are person whom were trusted in managing and partitioning of the database, also having skills of dividing the database either by author, publisher, or by numbers or alphabetically and therefore, when any problems occurs, during database searching, help is being sought from the librarian.

### **7.5 Zone of Proximal Development (ZPD)**

Zone of proximal development in, Vygotsky's theory, is refers to the level or zone at where the learner cannot successfully perform or perform with difficulties a given task unless he is assisted by MKO. According to (Vygotsky, 1987), it is at this level that learning takes place.

Findings in this study indicated that, medical students encounter so many difficulties during online database searching and they find it difficult to get their information need. Further findings from this study indicated that medical student also find it difficult to strategize their search in order to evaluate current or quality journals in the database, hence they end up getting nothing, apart from difficulties in strategizing their search, medical students also affected by power outage, system difficulties and network problem is also challenging to them. Further findings from this study revealed that, in order to overcome some difficulties encounter by medical students, library made so many efforts through indirect referral service and user orientation.

## 7.6 Social interaction

According to Vygotsky's theory, much important learning by the individuals occurs through social interaction with a skillful tutor or More Knowledgeable Other (MKO). The social interaction occurs within the Zone of Proximal Development.

This is evident findings from the study indicated that, social interaction occurred through having conversation with medical students as uncovered from the study expressing hospitality to them during user registration or whenever they needed help. Further findings from this study revealed that, library makes provision for informing medical students about the services rendered in the library, including posting the list of the available subscribed online scholarly databases and direct medical students or users to seek assistance from medical librarian when they need any. And also allow them to ask question when the encounter any difficulties and told them how to overcome the challenges during database searching. Further findings of the study also shown that, when medical students encounter some difficulties during online database searching sometimes they use to consult their lectures believing that their lectures are professors and more knowledgeable other. More so, further investigation carried out in this study shows that, when medical students encounter challenges during online database searching they also seek help from their fellow students who are more knowledgeable.

## 8. CONCLUSION AND RECOMMENDATIONS

Based on the findings of the study, it could be concluded that, challenges of online database searching among medical students of Kaduna state university occurred with the three constructs of Vygotsky theory of social development. This three constructs include, More Knowledgeable Other, Zone of Proximal Development, and Social interaction. Therefore, based on this three constructs the study concluded that, medical students encounter challenges in the areas related to non-information skills, technical difficulties during online database searching and seek help from their fellow students, lecturers and librarian. Medical students also considered librarians as database partitioning as well as helpers during online database searching and updating medical students about the services rendered in the library as well as posting the list of the available online database. It could also conclude that sometimes the librarian is not easily accessible for help during online database searching because it is only one person (librarian) managing the library and he is always busy. Furthermore, medical students consider their lecturers and course mate as helper.

Furthermore, in line with the major findings and conclusion reached in this study, it is recommended that, the following type of medical online scholarly databases such as, Medscape, medlineplus, dailymed, entrez should also be subscribe for the medical students because it contains clinical journals, audio and videos it also very easy to access.

More so, the management of Kaduna state university should introduce information literacy course for all new medical students. The courses should be taken by library staff and staff from computer science department. Furthermore, the library and hospital management should make sure that, power back up systems like the UPS, inverters and emergency generator are functioning properly to prevent interruption. Additional library staffs also should be providing to attain to students always.

## 9. REFERENCES

- [1] Akporido (2014) Electronic resources planning and management. Unpublished electronic survey conducted on ERIC from 27 November to 1 December 2006.
- [2] Blanton, M. L. (1998). Prospective Teachers Emerging Pedagogical Content Knowledge during the Professional Semester. Unpublished Doctoral Dissertation. North Carolina State University. Retrieved May 20, 2014. From [http://www.ncsu.edu/crmse/research\\_papers/blanton.diss.doc](http://www.ncsu.edu/crmse/research_papers/blanton.diss.doc)
- [3] Bashorun, M.T., Isah, A. and Adisa, M.Y. (2011). User Perception of Electronic Resources in the University of Ilorin Nigeria. Journal of Emerging Trends in Computing and Information Science. Vol. 2 No. 11. Retrieved at <http://www.ieee-tcdl.org/Bulletin/current/papers/isah.pdf> on 31<sup>st</sup> December, 2014
- [4] Bliss, J., Askew, M. and Marcrate, S. (1996). Effective Teaching and Learning: Scaffolding Revisited. Retrieved 20<sup>th</sup> May, 2014 from <http://www.jstor.org/stable/1050802>
- [5] Chathoth et al. (2013) E-information usage among engineers' academics in college libraries. A case study of electronic journal of academic and speed librarianship.
- [6] Chen, et al (1998). Internet Browsing and Searching: user Evaluations of Category Map and Concepts Space Techniques. Journal of the American society for information science, 49(7): 582-603.
- [7] Derosa, C., et al (2005). Perceptions of Library and Information Resources. OCLC Online Computer Library Centre, Dublin, OH
- [8] Hillary, H. (2009). International Students Experience in Using online information to learn retrieved 30<sup>th</sup> april 2014 from [www.zoominfo.com/p/Hilary\\_hughes/533243208](http://www.zoominfo.com/p/Hilary_hughes/533243208)
- [9] Jalil, A.H et al (2008). Assisted performance- A Pragmatic Conception of Online Learning. International journal of instruction, 1(2).

- [10] Jones S. and Madden M. (2002) "The internet goes to college: how students are living in the future with today's technology." Retrieved from <http://www.pewinternet.org/on20th>
- [11] June, M. (2010) Online educational materials for use in Instruction. *Teacher Librarian* 28 (1), 21-23.
- [12] Kadli, J and Kumbar, B.D (2011). Faculty Information Seeking Behavior in the Changing ICT Environment: a Study of Commerce Colleges in Mumbai.
- [13] Kearsley, A. (2005) Use of electronic journal by faculty of Istanbul University. Turkey: The results of a survey. *Journal of Academic Librarianship* 76 (3) 89-100.
- [14] Kommula, K and Kusneniwar, L. (2013) A comparative analysis of the use of electronic resources by under graduate students at two Kenyan universities. Retrieved <http://repository.up.ac.za/bristream/handle/2263/1619/ingutiaoyiekecomparative%282010%29pdf?sequence=1>
- [15] Kumar M. (2012). Use of ICT by students. A survey of Faculty of Education at IUB, Library Philosophy and Practice. Retrieved from <http://www.webpages.uldaho.edu/~mbolin/khan-bhatti-khan-htm>
- [16] Illinois, M. (2005) Internet development and connectivity in Nigeria. *Programme: The electronic library and information system* 39(3) 257-265.
- [17] Maroof et al. (2012) Use of electronic resources by researcher scholars of the University of Jos, Nigeria. *The information Scientists, International Journal of Information and Communication Technology (ICT)*, 5(1), (1), 7-8
- [18] Marshall, M. (2006) *Research design: Qualitative, quantitative and mixed methods approaches.* (2nd edition). Thousand Oaks, CA: Sage.
- [19] Maxwell, M. (1996) *Qualitative research methods: A health focus.* Melbourne, Australia: Oxford University Press
- [20] Miles, MB. & Huberman, AM. (1994) *Qualitative Data Analysis* (2<sup>nd</sup> edition). Thousand Oaks, CA: Sage Publications.
- [21] Paulus, M.T (2005). Collaborative and cooperative approach to online group work: the impact of task type. *Distance Education*, 26(1)111-125.
- [22] Tarman, I and Tarman, B (2011). Teachers' Involvement in Children Play and Social Interaction. *Elementary Education online*, 10(1) 325-337 Retrieved 20<sup>th</sup> May, 2014 from <http://ilkogretim-online.org.tr>
- [23] Tsai, M.-J. & Tsai, C.-C. (2003). Information Searching Strategies in Web-based Science Learning: The role of Internet Self-efficacy. *Innovations in Education and Teaching International*, 40(1), 43-50. <http://dx.doi.org/10.1080/1355800032000038822>
- [24] Timothy Y. (2014) Challenges of online information searching among students of Ahmadu Bello university, zaria
- [25] Vygotsky, L. S. (1998b). The problem of Age (M. Hall, Trans.). In R. W. Rieber (Ed.). *The Collected Works of S. Vygotsky: Vol. 5. Child Psychology* (pp. 187-205). New York: Plenum Press. (Original work written 1933-1934)
- [26] Vygotsky, L. S. (1978). *Interaction Between Learning and Development* (M. Lopez-Morillas, Trans.). In M. Cole, V. John-Steiner, S. Scribner, & E. Soubberman (Eds.), *Mind in society: The Development of Higher Psychological Processes* (pp. 79-91). Cambridge, MA: Harvard University Press.
- [27] Vygotsky, L. S. (1987). *Thinking and Speech* (N. Minick, Trans.). In R. W. Rieber & A. S. Carton (Eds.) *the collected works of L. S. Vygotsky: Vol. 1. Problems of General Psychology* (pp. 39-285). New York: Plenum Press. (Original work published 1934)
- [28] Wilson, T. (2001) *Information Overload Myth, Reality and Implications for Health Care.*
- [29] Senthil Kumar, K. R., *Recent Trends of ICT Services and the Present Scenario of Some Selected Engineering College Libraries in Coimbatore District, Tamilnadu: A Study* (February 2017). *Asian Journal of Applied Science and Technology (AJAST)*, Volume 1, Issue 1, Pages 199-202, February 2017 Available at SSRN : <https://ssrn.com/abstract-2928955>

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