INFLUENCE OF INFORMATION TECHNOLOGY ON INTELLECTUAL DEVELOPMENT OF LIS UNDERGRADUATES OF KWARA STATE UNIVERSITY, MALETE, NIGERIA

By

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CERTIFICATION

This is to certify that this project titled **"*Influence of Information Technology on Intellectual Development of LIS Undergraduates of Kwara State University, Malete, Nigeria*"** by Abdulrasaq Islamiyyah Babamale meet the regulations guiding the award in National Diploma in Kwara State Polytechnic Ilorin and is approved.

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DEDICATION

This project is dedicated to God for being my ultimate source of strength and inspiration. In Him, I derived all powers needed to live, weather the storms and become an embodiment of hope to myself and the people around me.

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ABSTRACT

The research was on influence of information technology on intellectual development of LIS undergraduates of Kwara State University, Malete, Nigeria. Four research questions guided this study. 269 copies of questionnaire were administered to the LIS undergraduate respondents from 200l to 400l but 264 copies of the questionnaire were returned and used which is the total population through face-to-face method in order to collect data. Simple Random sampling technique was also used for the study. In the data analysis, descriptive statistics including percentages and mean were used. The findings revealed that the information technology mostly used by respondents is Smartboards and other communication products (e.g. smartphones). This makes them possess effective communication/dissemination of information skills and problem-solving skills. The findings show that information technology has a moderate or average impact on intellectual development of the respondents. Furthermore, the findings show the challenges confronting the respondents' use of information technology as poor Internet access, insufficient funding, inadequate training or knowledge about IT, availability of constant electricity, unreliable devices and software, negative attitudes and beliefs about IT. This study concluded that the influence of information technology on the intellectual developments of students in KWASU was on the average. The findings recommended that the Institution should organize orientation for the students, provide good internet access at little or no cost, funds should be made available to equip e-libraries with sophisticated technological equipment needed for information technology.

CHAPTER ONE
INTRODUCTION

1.1 Background to the Study

The Information technology (EIT) is one of the important innovations for modern development. The term EIT springs up from the convergence of telecommunication, computing, and broadcasting using digital information. It covers any product that will store, retrieve, manipulate, transmit and receive information electronically in a digital form. EIT encompasses the broad fields of information and communications by means of computer and telecommunication; tools that are being increasingly used for organizational or personal information processing in all sectors of economy and the society (Sharkins et al., 2016). Information technology (EIT) can also be any or all devices that have the capacity to process data and or information, both systemically and sporadically, whether applied to the product or applied in the process.

The 21st Century has experienced a remarkable proliferation of EIT which have tremendously change the information seeking attitude of students and researchers globally. In recent times, information technology (EIT) has been identified as the major sources for information dissemination in the universities, especially for researchers (Lefuna, 2017). It is more comprehensive and refers to all types of technology that operate with information, whether in an information system, in the automation of an industrial process, in the communication between computers of two organizations, or even in the personal use of computational resources. At present, EIT is considered as an important means to promote new methods of instruction (teaching and learning).

For Burgelman (2013), Information technology "refers largely to the resources applied by a firm in the processing and management of its data. These resources include hardware, software, communications (voice, data, and video) and associated personnel".

According to Graham (2013) the term "information technology (EIT)" appears not to be used consistently; they may be referred to as electronic information resources (EIR), information communication technology (ICT), library automation, and telecommunication. Digital resources, digital materials and soft library resources are other terminologies used for information technology (EIT) and all this can be categories into computer hardware, software, E-book, websites, mobile apps and E-learning platform. No institution or organization can still rely on only traditional printed information resource to perform effectively and efficiently (Ebijuwa, 2015). To librarians, information technology (EIT) is a significant development that provides tools for managing the avalanche of information generated by modern society.

Consequently, the academic community has undergone tremendous changes during these years, assuming new dimensions influenced by technology-driven applications. Sharma (2019), states that "the transition from print to electronic medium apart from resulting in a growth of electronic information, has provided users' intellectual development with new tools and applications for information seeking and retrieval. The intellectual development of users brings about free access to information resources and becomes easy using the electronic gadgets.

The importance of information technology (EIT) to intellectual development of students cannot be over emphasized. They influence the intellectual development of students in creating the chance to access relevant and current information from different subject areas. The emergence of information technology (EIT), according to Ani and Edem (2012), has tremendously transformed or influenced the handling and management of information in Nigerian academic environments and university libraries. In fact, it is now difficult to imagine a world without information technology. The provision and use of EIT is part and parcel of the entire educational system, to the students, information professionals and the

institutions. It is one thing to recognize the importance of EIT and another to know if they effectively influence the intellectual development of students and academics.

Intellectual development refers to the changes that take place as a result of growth, and experience, in thinking, reasoning, relating, judging, conceptualizing, etc. These are the changes evident in students as a part of intellectual development. Cognitive development is how student think, explore and figure things out. Basically, it is the development of knowledge, skills, problem-solving, and dispositions that help students to think about and understand the world surrounding them. Lowe and McAuley (2014) defined intellectual development as "the skills and abilities that will enable the use of computers and related information technologies to meet personal, educational and labour market goals".

Intellectual development in students is generally characterized by the development of important mental processes: attention span, understanding information, reasoning, learning, remembering, problem-solving, and thinking from birth until adulthood. Understanding this area of development gives insight into students' ability for logical reasoning at different age levels (Mazur, 2013).

The term technology refers to digital technologies in the form of hardware (e.g., interactive whiteboards, tablets), stand-alone software (e.g., CDROMs, e-books), and online learning tools (e.g., Monster Exchange, ABRACADABRA). So, the advancements in technology have enabled new forms of handling information and has created more dynamic and flexible tools for managing and making it accessible than the print formats. This has created a major shift from the traditional set up of library which focuses on the physical collection of information resources, to a stage where information is predominantly stored in digital formats. This advancement has caused changes both in the way users access information and the way libraries provide and manage resources (Luka, 2015).

Libraries and information centres are becoming more attractive as a result of Information and Communication Technologies (ICTs) that have broken every barrier that hinders access to information. It is obvious that some of the information resources in the university libraries are accessed 24/7 and beyond the physical boundary of libraries. Abinew and Vuda (2013) opined that libraries have transformed into digital and virtual libraries where books, journals and magazines have changed into e-books, e-journals, and e-magazines. It is against all these backdrops that this research deem it fit to examine how EIT can have influence of information technology on intellectual development of LIS undergraduates of Kwara State University, Malete, Nigeria.

1.2 Statement of Problems

It has been observed that upcoming scholars, especially university freshmen and undergraduates often have trouble searching and using information effectively. Lack of information literacy skills seem to be at the root of students' search difficulties and poor performance in school. Information technology offers the 21st Century students new opportunities that were not available to previous generations, yet large number of students leave universities without necessary skills to cope within the information-based society.

Abilities to think, reason and do things very well have reduced with this generation but with the advent of EIT, things should have been different, but it seems not so due to lack of equipment, unreliability of equipment, lack of technical support and other resource-related issues as well as lack of knowledge/skill regarding the use of EIT. Preliminary observation also shown that the effective use of information technology in academic institutions are marred by a variety of factors such as lack of training, knowledge on usage and unfamiliarity with the technology and resources as well as poor information literacy and evaluation skills. Arising from the foregone, this study is therefore set out to investigate the influence of

information technology on the intellectual development of students in KWASU using students of LIS department as a case study.

1.3 Objective of Study

The main objective of this study is to investigate the influence of information technology on intellectual development of LIS undergraduates of Kwara State University, Malete, Nigeria. The specific objectives are to:

1. examine the various information technology available for use to LIS students in KWASU;
2. investigate the various intellectual development skills possess by LIS students in KWASU;
3. Find out the impacts of information technology on intellectual development of LIS students in KWASU;
4. Ascertain the obstacles faced in using information technology by LIS students in KWASU.

1.4 Research Questions

The following research questions are raised to guide the study:

1. What are the various information technology available for use by the students in KWASU?
2. What are the intellectual development skills possessed by LIS students in KWASU?
3. What are the impacts of information technology on intellectual development of students in KWASU?
4. What are the obstacles faced by students on the use of information technology in KWASU?

1.5 Scope of the Study

The title scope is influence of information technology on intellectual development of LIS undergraduates of Kwara State University, Malete, Nigeria. The study is limited in scope to LIS students of Kwara State University, Malete.

1.6 Significance of the Study

The outcome of this study on influence of information technology on the intellectual development of students in KWASU are expected to be of benefit to the library users (students and lecturers), the library management, librarians in the universities and other academic libraries, university management, the government, the library users who are all stake holders in the following ways:

The study will bring to the attention of students and management of university in Kwara State University, Malete and library users the relevance of EIT to intellectual development. It will go a long way in the assessment of such initiatives with a view to strengthening its capabilities for better service delivery. It will provide the basis towards proffering solution to the problem of non-utilization of information technology in Kwara State University, Malete.

It will also be beneficial to academics, students and professionals who are interested in this area of study. It will be a guide for the University Library to improve their services. More so, it will contribute to the depth of literature on information technology and will also serve as a reference material for further studies on information technology use by libraries.

1.7 Definition of Operational Terms

Influence: the capacity to have an effect on the character, development, or behaviour of someone or something, or the effect itself.

Information technology: any activity that involves information processing and integrated communication through electronic equipment.

Intellectual development: this means the growth of a student's ability to think and reason. It is about how they organize their minds, ideas and thought to make sense of the world they live in.

Students: People who are studying at a school, college, and university.

CHAPTER TWO

REVIEW OF LITERATURE

2.0 Introduction

This chapter presents a review of literature related to the study. It is arranged under the following sub-headings:

2.1 Concepts of Information technology (EIT)

2.2 Concepts of Intellectual development

2.3 EIT and Intellectual development

2.4 Benefit of EIT to Intellectual development of students

2.5 Challenges affecting the use of Information technology (EIT)

2.6 Appraisal reviewed literature

2.1 Concepts of Information technology (EIT)

Today's world is a world of information explosion. This information explosion is taking place in such a fast speed that even a literate person is feeling as if he or she is illiterate being unable to cope with such an information explosion. It is Information technology (EIT) that can help in coping with the information explosion. According to Bracken (2015) Information technology (EIT) is the acquisition, processing, storage and dissemination of vocal, pictorial, textual and numerical information by a micro-electronics based combination of computing and telecommunications. The term in its modern sense first appeared in a 1958 article published in the Harvard Business Review, in which it was commented that the new technology does not yet have a single established name but shall be tentatively called Information Technology. It spans a wide variety of areas that include but are not limited to things such as processes, computer software, computer hardware, programming, languages, and data constructs (Liew, Foo, & Chennupati, 2016).

According to Shields (2014), Information technology consists of three words Electronic, Information and Technology. The term electronic refers to any communication of knowledge that is in electronic device or pertaining to the internet. Information refers to any communication or representation of knowledge such as facts, data, or opinions in any medium or form, including textual, numerical, graphic cartographic, narrative, or audio-visual forms. Agomou (2013) referred to information as facts, instructions and processed data that have been organized in any medium or form; such organized facts or data which is meaningful to the end users or recipients. It can also be seen as data which has been processed, while technology according to Galbraith (2013) is the systematic application of scientific or other organized knowledge to practical tasks. It can also be seen as the equipment, machine and devices used in the application of knowledge to practical tasks. Technology is the practical form of scientific knowledge or the science of application of knowledge to practical.

Robson (2016) defined Information technology as the phase that covers all the machineries or skill concerned with the capturing, storage, transmittal, or presentation of information. Olive and Chapman (2016) saw EIT as technology which supports activities involving the creation, storage, manipulation, and communication of information together with their related method, management, and application. Osuagwu (2016) agreed with Robson (2012) as he saw Information technology as the convergence of microelectronics, telecommunications computers, and storage facilities. Osuwa (2014) defined Information technology as the application of scientific study or the art of using skills in making things, the mastery and utilization of manufacturing and industrial methods. Ohakwe (2011) on the other hand considered Information technology beyond hardware and software. He rather considered it as a process of acquisition, processing, storage, and dissemination of vocal, pictorial, textual and numerical information.

Ochai (2017) defined EIT as any equipment interconnected system or subsystem of equipment, that is used in the automatic acquisition, storage, manipulation, management, retrieval, movement, control, display, switching, interchange, transmission, reception of data. Kayoma (2014) stated that EIT are basically information handling tools, a varied set of goods, application and services that are used to reproduce, store, process, distribute and exchange information. Alkadi (2014) defined Information technology as a collection of individual technology component that are typically organized into computer based information systems. EIT is concerned with the aspect of managing and processing information through the use of electronics, computers, and computer software to convert, store, protect, process, transmit and retrieve information. EIT is also defined as computer-based tools used by people to work with information and communication processing needs of an individual or an organization. It encompasses the computer, its hardware and software, the network and several other devices that converts information (text), images, sounds and motion and so on into common forms (Onuma, 2017, Okute, 2013).

Boritz (2013) saw EIT as the emergence of tools of microelectronic and telecommunications that are used in the automatic acquisition, analysis, storage, retrieval, manipulation, management, control, movement, display, transmission, reception, and interchange of quantitative and qualitative data. Lastly, Jimoh (2017) defined EIT as the handling and processing of information (texts, images, graphs, instruction etc) for use, by means of electronic and communication devices such as computers, cameras, telephone. In a nutshell, Information technology is any equipment or interconnected system or sub-system of equipment that is used in the acquisition, storage manipulation, management transmission or reception of data or information. It is anything that renders data, information, or perceived knowledge in any visual format whatsoever, via any multimedia distribution mechanism.

The impact of Information technology (EIT) is becoming more pronounced worldwide. It has become such that rarely is anything mentioned in any area of human endeavour without reference to this type of technology. EIT cuts across all sectors, and it is becoming the driving force for effective and efficient operations of trade and commerce, government, medicine, education, human resources development, arts and culture, agriculture, national security, and other areas of human endeavour. Information and communication technology could be said to encompass all those gadgets that deal with the processing of information for better and effective communication. According to the United Nations (2014), EIT covers Internet service provision, telecommunications equipment and services, Information technology equipment and services, media and broadcasting, libraries and documentation centres, commercial information providers, network-based information services, and other related information and communication activities.

In the last few decades, EIT has increasingly played a critical role in all fields of human endeavors. It is readily useful in the areas of agriculture, engineering, education, medicine, law, architecture, aviation, commerce, insurance, banking and finance as well as maritime activities. Information technology (EIT) involves the use of computers, internet and other telecommunication technology in every aspect of human endeavor. It encompasses the hardware and software, the network and several other devices (video, audio, photographic camera, etc) that can convert information, images, and sound into common digital form. It includes electronic information in processing technologies such as computer and internet, as well as fixed-line telecommunication networks. It is an extensive application of computing, communication, telecommunication and satellite technology.

Information technology is daily giving rise to new concepts, new ideas and making impact not only in the industries or businesses but also in the education sector. Relating it to education, Miller and Akume (2013) referred to it as the process of gathering, accessing and

dissemination of data for an enhanced learning. Similarly, Ofodu (2017) referred to EIT as electronic or computerized devices, assisted by human and interactive materials that can be used for a wide range of teaching and learning as well as for personal use. From these definitions, EIT could therefore be seen as processing and sharing of information using all kinds of electronic device, an umbrella that includes all technologies for the manipulation and communication of information.

2.2 Concepts of Intellectual development

Intellectual development is all about learning. It is about how individuals organise their minds, ideas and thoughts to make sense of the world they live in. Intellectual development is about how one uses his/her minds and organizes thinking to understand the world around him/her and it depends upon the student's own pattern of development, the opportunity for playing with technology and experiences of activities and events. Cognitive or intellectual development means the growth of a student's ability to think and reason (Perry, 2012).

Intellectual development refers to the changes that take place as a result of growth, and experience, in thinking, reasoning, relating, judging, conceptualizing, etc. These are the changes evident in students as a part of intellectual development. Cognitive development is how student think, explore and figure things out. Basically, it is the development of knowledge, skills, problem-solving, and dispositions that help students to think about and understand the world surrounding them. Brain development is part of cognitive development. Intellectual development refers to the development of language, memory and thinking skills (Felder, and Brent 2014).

According to Marra and Palmer (2014) the main areas of intellectual development are:

Language development – helps to organize thoughts and make sense of the world around us. It helps an individual to ask questions and develop simple ideas into more complex ideas. Language development depends upon the student's pattern of development, age, the opportunity to experiment and use language. It is a basic individual need to communicate, and language is the tool that allows this.

Cognitive development – is about how we use our minds and organises thinking to understand the world around us. Cognitive development depends upon the student's pattern of development, the opportunity for playing with toys and games, and experiences of activities and events. Cognitive development includes imagination – being able to picture things when they are not in front of you. Using their imagination, student indulge in pretend play, pretend games, tell stories, draw, paint, read, make models, and dress up. Reading is an important intellectual skill. A student is born into an environment where it is continually surrounded by words and symbols. Learning to read is the skill of being able to recognize, interpret and understand hundreds of symbols and the combinations of those symbols so that they have meaning.

For a student's intellectual development, parents and school plays an important role. The role of the parent is to spend time observing and interacting with their students and provide opportunities. Parents also help students to learn and develop through exposure to new things and by making them visit interesting places or making different materials available at home including a household object, toys, and books (Felder, & Brent, 2012)

Felder and Brent (2012) further opined that schools play an important role in every aspect when it comes to student's all-round development. Schools provide a structured pattern of education and promote student's mental and psychological growth and development. The school has effects on student's educational achievement, their acquisition of literacy, numeracy and scientific, knowledge. The school acts as a foundation of a

student's life. The school always tries to provide experiences and situations in which students can consider and reflect on the values and translate this reflection into action with a global dimension. School emphasises inclusive education so that each student's ability can be nurtured. The school provides various skills which help their students learn effectively each and everything, starting from Collaboration, Communication, Imagination, Critically thinking, Being creative, Being digitally literate, Leading and Learning, applying & reflecting (Hammer, 2013).

Intellectual development in student is generally characterized by the development of important mental processes: attention span, understanding information, reasoning, learning, remembering, problem-solving, and thinking from birth until adulthood. Understanding this area of development gives you insight into your students' ability for logical reasoning at different age levels (Mazur, 2013).

Intellectual development refers to the changes that occur, as a result of growth and experience, in a person's capacities for thinking, reasoning, relating, judging, conceptualizing, etc. Hammer (2013) stressed that there are several different approaches to the study of intellectual development in students. As in the history of most branches of scientific knowledge, the study began with observation and description. For many years, descriptive accounts of student's thinking, reasoning, and other intellectual capacities were thoroughly mixed with descriptions of their social and emotional development and of their verbal and motor skills. Moreover, there was at first a tendency to attribute to the students' mental processes that were simply miniature versions of adult thought patterns.

2.3 EIT and Intellectual development

Information technology (EIT) and intellectual development of students according to Moursund, (2015) is a broad, deep, and rapidly growing field of study. It was observed that an increasing number of countries are now undertaking training to develop skills/intellect of students in the use of EIT in learning and other school activities, including classroom management, to ensure the teachers bring their skills to actual classroom teaching (UNESCO, 2013). It has been continuously linked to higher efficiency, higher productivity, and higher educational outcomes, including quality of cognitive, creative and innovative thinking. At present EIT is considered as an important means to promote new methods of develop intellectual development of students. Pajo and Wallace (2014) suggested that the use of EIT could improve performance, teaching, and administration, have a positive impact on education as a whole, and develop relevant skills in the disadvantaged communities.

A research review by Kozma (2005) suggested three significant concerns of consideration regarding EIT impact on intellectual development of students. Firstly, student outcomes such as higher scores in school subjects or the learning of entirely new skills needed for a developing economy. And secondly, teacher and classroom outcomes such as development of teachers‟ technology skills and knowledge of new pedagogic approaches as well as improved attitudes toward teaching. Information technology (EIT) aims to improve intellectual development of students' performance by the intelligent application of technology that will increase the effectiveness and efficiency of intellectual development of students (Yusuf, 2015: Idih, 2016).

Business educator use EIT to make the students intellectual development more effective. It also provides students with individualized instructional activities that accommodate differences in student's level of preparation, abilities and motivation to learn (Nwanewezi and IsifehOkpokwu, 2018). The EIT facilities used in intellectual development

of students process in schools according to Bandele (2016) include radio, television, computers, overhead projectors, optical fibers, fax machines, CD-Rom, Internet, electronic notice board, slides, digital multimedia, video/VCD machine and so on. They have provided innovation for intellectual development of students and have engendered advances in research about how people learn, thereby bringing about rethinking the structure of intellectual development of students (Lopez, 2013; Bolaji and Babajide, 2013 and Ofodu, 2017).

These various applications of EIT have a revolutionary impact on how we see the world and how we live. It also allows us to share experiences across geographical areas and organizations, so that we learn collectively and build on each other's advances. EIT as far as the education sector of the economy is concerned is more critical today than ever before since its growing power and capabilities are triggering changes in the learning environments available for intellectual development of students (Pajo and Wallace, 2016). At present, EIT is considered as an important means to promote new methods of instruction (teaching and learning). Volman and Van Eck (2013) opined that EIT can be a catalyst by providing tools which lecturers use to improve intellectual development of students and by giving students access to electronic media that make concepts clearer and more accessible. It can enhance educational opportunities and outcomes for all categories of students, including students with intellectual disabilities (Anderson, 2009, Ademola, 2013).

Promotion of intellectual development in students include:

Develop problem-solving skills: Building problem-solving skills during the formative years of students can be extremely helpful for their lifetime. You can encourage them to play board games, press computer, connect to internet, launch a software, brain games, and puzzles. Motivate them to come up with original ideas of their own, while waiting and listening to them patiently. Developing educational activities for students, educational activities for

preschoolers and educational activities for toddlers is a good way to develop intellectual abilities.

Increase Attention: Increasing attention span can play a vital role in the cognitive/intellectual development of students. How much attention students pay to a task depends on whether they are enjoying it or not. As students entering school have to take part in more structured, repetitive, and academic tasks like writing and reading, their tasks need to be made interesting for them.

Improve memory skills: Memory is a complex process. There is a range of strategies that one can take to help students recall information. One can teach them how to remember the sequence of letters of different words, the names of animals using their unique attributes, and the names of places with specific landmarks. Show oneself as a loving and caring parent. Incorporate best practices to nurture and pamper students. It is important that from early on in their life, their physical, emotional, and intellectual development is focused upon.

2.4 Benefit of EIT to Intellectual development of students

In influencing intellectual development of students, communication process takes place which requires plenty of data to be stored for retrieval as and when required, to be disseminated or transmitted in the desired format. The hardware and software like Over Head Projector, Television, Radio, Computers and related software are used in the developmental process. However, EIT today is mostly focused on the use of Computer technology for processing the data. In this context, according to Trucano (2013) the advantages of EIT on intellectual development of students can be listed down as follows:

1. **Quick access to information:** Information can be accessed in seconds by connecting to the internet and surfing through Web pages.
2. **Easy availability of updated data**: Sitting at home or at any comfortable place the desired information can be accessed easily. This helps the students to learn the updated

content. Teachers too can keep themselves abreast of the latest teaching learning strategies and related technologies.

3. Connecting geographically dispersed regions: With the advancement of EIT, education does not remain restricted within four walls of the educational institutions. Students from different parts of the world can learn together by using online, offline resources. This would result in the enriching learning experience. Such collaborative learning can result in developing:

a. Divergent thinking ability in students

b. Global perspectives

c. Respect for varied nature of human life and acculturation

d. Facilitation of learning

4. Catering to the individual differences: EIT can contribute in catering to individual needs of the students as per their capabilities and interest. Crowded classrooms have always been a challenge for the teacher to consider the needs of every student in the class.

5. Wider range of communication media: With the advent of EIT, different means of communication are being introduced in the teaching learning process. Offline learning, online learning, blended learning are some of the resources that can be used in educational institutions. Collaborative learning, individualized learning strategies can enhance the quality of group as well as individual learning with the real society.

This can ensure the applicability of knowledge. Wider learning opportunities for students' application of latest EIT to intellectual development of students have provided many options to the learners to opt for the course of their choices. Many Online courses are available for them to select any as per their aptitude and interest. Students can evaluate their own progress through different quizzes, ready to use online tests. This can ensure fulfillment of the employment required in the job market thus minimizing the problem of unemployment.

It can also provide more efficient and effective citizens to the society as per the changing needs (Trucano, 2013).

2.5 Challenges affecting the use of Information technology (EIT)

Although EIT has the potential to improve the intellectual development of students to a great extent, some countries are far from reaping these benefits because of certain barriers. Benzie (2015) opined that understanding the pedagogical, psychological and cognitive barriers to the successful use of information technology may be a vital precondition for improving the utilization of computers and other technological aids in the developmental process. The barriers are categorized as external and internal barriers (Keengwe, and Onchwari 2018). According to Snoeyink and Ertmer (2014), the former includes lack of equipment, unreliability of equipment, lack of technical support and other resource-related issues. The later include both institution level factors, such as organizational culture and lecturer level factors, such as beliefs about teaching and technology and openness to change.

The way external and internal barriers negatively influence the use of EIT on intellectual development of students are described below:

1. Inadequate Infrastructure and Resources: The effective use of EIT on intellectual development of students would require the availability of equipment, supplies of computers and their proper maintenance including other facilities and accessories. Where constant electricity is absent, and provision is not made for alternative power supply, it becomes a challenge. Implementing EIT demands other resources, such as computers, printers, multimedia projectors, scanners, etc which are either not available or in short supplies in most of the developmental institutions. Besides, EIT requires up-to-date hardware and software. Using up-to-date hardware and software resources is a key feature in the diffusion of technology (Gulbahar 2017) but a rare experience in developmental institutions.

2. Insufficient Funds: Effective implementation of technology into intellectual development of students involves substantial funding. EIT-supported hardware, software, internet, audio visual aids, teaching aids and other accessories demand huge funds. Sharma (2013) states that the most notable of the barriers to the use of EIT on intellectual development of students in developing countries seems to be the political will of the people in the corridors of power. The allocation of sufficient funds for the educational sector which can be seen from the budgetary allocations in various countries. Mumtaz (2012) stated that many scholars proposed that the lack of funds to obtain the necessary hardware and software is one of the reasons students do not use technology or develop interest in the use the of technology. Afshari, Bakar, Su Luan, Samah, and Fooi (2019) stated that efficient and effective use of technology depends on the availability of hardware and software and the equity of access to resources by students.

3. Lack of Vision and Plan: Although many stakeholders, educators, government, in developing countries, consider that EIT investment enhances the instructional use of computers and improves teaching and learning, they neither provide computer tools in the classroom (Candiotti and Clark, 2018) nor provide state-of- the-art technology in order to make desirable learning changes in education (Kent and McNergney, 2019). This barrier mainly falls into two broad categories:

a. Government vision and plan: Effective implementation of EIT in education is not merely a vision rather; it needs a proper plan, policies, execution and monitoring by respective government agencies.

b. Institution Vision and plan: Ertmer (2012) wrote, “A vision gives us a place to start, a goal to reach for, as well as a guidepost along the way”. Many researchers have pointed out that an institution’s EIT vision is essential to effective EIT integration (Anderson and Dexter,

2013). Also, there are few higher educational institutions that have EIT facilities but cannot integrate it effectively due to lack of a proper vision and plan. So EIT integration is clearly related to actions taken at the institution level, such as the development of an EIT plan, EIT support, and EIT training (Haddad and Jurich, 2012) which is absent at most of the educational institutions.

4. Students' Attitudes and Beliefs about EIT: Students attitudes have been found to be major predators of the use of new technologies in instructional settings (Almusalam, 2014). Mumtaz (2013) stated that, student beliefs about teaching and learning with EIT are central to integration. To be successful in computer use and integration, students need to engage in conceptual change regarding their beliefs about the nature of learning, the role of the leacturers, and their role as students. Hence the successful use of EIT into classroom largely depends on student's attitudes and belief relating to these. In fact, it has been suggested that attitudes towards computers affect teachers‟ use of computers in the classroom and the likelihood of their benefiting from training. It is found that less technologically capable teachers, who possess positive attitudes towards EIT, require less effort and encouragement to learn the skills necessary for the implementation of EIT in their design activities into the classroom. Therefore, teachers who have positive attitudes towards EIT itself will be positively disposed towards using it in the classroom (Moseley and Higgins, 2012).

Moreover, Harrison and Rainer (2012) found that participants with negative computer attitudes were less skilled in computer use and were therefore less likely to accept and adapt to technology than those with positive attitudes. They concluded that changing individuals‟ negative attitudes is essential for increasing their computer skills. Therefore, if students want to successfully use technology in their classes, they need to possess positive attitudes to the

use of technology. Such attitudes are developed when students are sufficiently comfortable with technology and are knowledgeable about its use (Afshari et al 2019).

5. Lack of Knowledge and Skill: According to Pelgrum (2011), the success of educational innovations depends largely on the skills and knowledge of students. students' lack of knowledge and skills is one of the main hindrances to the use of EIT in education both for the developed and underdeveloped countries (Pelgrum, 2011; Ihmeideh, 2012). Integrating technology in the curriculum requires knowledge of the subject area, an understanding of how students learn and a level of technical expertise (Morgan 2016). Moreover, Berner (2013) found that the student's belief in their computer competence was the greatest predictor of their use of computers. Therefore, lack of knowledge regarding the use of EIT and lack of skill on EIT tools and software have also limited the use of EIT tools on intellectual development of students.

6. Lack of Time: These studies reported lack of time as one of the biggest constraints to the integration of EIT on intellectual development of students. Students need time to learn how to use the hardware and software, time to plan, and time to collaborate with other students. Students also need time to develop and incorporate technology into their skills. Some students are unable to make appropriate use of technology in their own ways, while others are unwilling to try because of anxiety, lack of interest, or lack of motivation (Duhaney 2014).

7. Resistance to Change: Nwaokocha (2014) lamented that some business educators in the teaching profession hold to their obsolete ideas and have refused to accommodate changes in the profession. According to him, they often say "this is how we were taught". Therefore, there are no innovation or dynamism in their dictionaries.

2.6 Appraisal reviewed literature

This chapter reviews various research conducted worldwide that are related to influence of information technology on the intellectual development of students. From the review, it was evident that information technology has occupied a central place in the intellectual development of students to the extent that the success and strength of any students is dependent upon utilization of information technology. It was further discovered that students have over the years been acquiring and assembling information technology in form of computer hardware, software, E-book, websites, mobile apps and E-learning platform.

Information technology plays a vital role on the intellectual development of students due to value of information technology, like speed, error free, saves time not tedious as well as more economical. In view of this, this study intends to investigate the issues related to influence of information technology on the intellectual development of students in Library and Information Science. The various major areas the study examined were grouped under conceptual. The conceptual review included overview of the variables under study which will be applied to this present study on influence of information technology on intellectual development of LIS undergraduates of Kwara State University, Malete, Nigeria.

CHAPTER THREE

METHODOLOGY

This chapter is devoted to the methodology applied in carrying out the research. The procedures used in gathering data and statistical tools used in analysing the data are explained. The following are covered in this chapter:

3.1 Research design

3.2 Population of study

3.3 Sample size and sampling technique

3.4 Research Instrument

3.5 Data collection procedure

3.6 Validity of the Instrument

3.7 Reliability of the Instrument

3.8 Method of data analysis

3.1 RESEARCH DESIGN

The approach to be used for this study is descriptive survey methods. Descriptive survey methods find out and interpret events and deals with them the way they are without any external manipulation (Daraola 2011). This method is preferred because it would enable the collection of data that describes the situation or phenomenon the way it is at that time or duration (Kothari, 2014). The design is also chosen because it allows for the determination of the veracity of the assumptions defining the hypotheses and for the creation of new studies and theories. Descriptive survey research design was adopted because it will enable researcher to collect large amount of information about the influence of information technology on intellectual development of LIS undergraduates of Kwara State University, Malete, Nigeria.

3.2 POPULATION OF STUDY

Research population can be described as the total number of individuals or units in the area of study which form part of the research universe. According to Gay, Mills and Airasian (2015), a target population is a large population from which a sample population is selected. The target population for this study include students of LIS in Kwara State University, Malete. According to the annual report of the University, the total number of students in department of LIS in Kwara State University Malete as at 2024/2025 academic session is 975 across 200 to 400 levels. Please see the table below.

Table 1: Population of the study

S/N	Level	NO
1.	200L	425
2.	300L	280
3.	400L	270
	TOTAL	**975**

3.3 SAMPLE AND SAMPLING METHODS

Sample can be defined as the fraction or small proportion of the entire population. Neuman (2011) opined that the primary goal of researchers is to get a small collection of units from a much larger collection or population, such that the researcher can study the smaller group and produce accurate generalizations about the larger group. Sample sizes are the actual number chosen to represent the population. Sample is a crucial issue in any quantitative research like this. Simple random sampling method was adopted to select the sample population for this study. This is to give LIS Students of Kwara State University, Malete an equal opportunity of being selected. From all the levels except 100level who are still new, a total of 180 respondents was drawn to represent the sample for the study, with the help of research advisor table. The formula used for these calculations was:

$$n = \frac{X^2 * N * P * (1-P)}{(ME^2 * (N-1)) + (X^2 * P * (1-P))}$$

Where:

n = sample size

X^2 = Chi – square for the specified confidence level at 1 degree of freedom

N = Population Size

P = population proportion (.50 in this table)

ME = desired Margin of Error (expressed as a proportion)

See the table below:

Table 2: Sample size

S/N	Level	NO	Sample size
1.	200L	425	95
2.	300L	280	92
3.	400L	270	82
	TOTAL	**975**	**269**

3.4 Research Instrument

The Instrument used for data collection in this study was questionnaire. The questionnaire was a closed ended questionnaire. To secure honest responses from the respondents, they were promised anonymity and assured that any information gave will be treated in strict confidence. The questionnaire was of two parts. Part one elicited the demographic information about the respondents including age, gender, level of study. Part two of the questionnaire, comprises of sub section based on the objective of the study.

3.5 Data Collection Procedure

Copies of the questionnaire was personally administered randomly to students of LIS in Kwara State University Malete inside their respective classes during the second semester of 2021/2022 academic sessions. Official permission was sought from appropriate authority before the administration of the questionnaire. The administration was done within 1week.

3.6 Validity of the Instrument

The instrument was validated to ensure both the content and construct validity. This was achieved by given the instrument to the supervisor including other experts. Their observations were incorporated in the final questionnaire for distribution and in order to guarantee validity the researchers provided enough clear questions to the respondents.

3.7. Reliability of the Instrument

To achieve the reliability of the instrument used for data collection in this study, a Split half reliability method was used and the reliability of the instrument was calculated using person moment correlation.

3.8. Data Analysis

Descriptive statistics including percentages and mean were used in analysing the data. Descriptive statistics was adopted because of its ease and simplicity to understand.

For the responses on a 4-point Likert type scale (SA, A, D, SD), a mid-point mean of 2.5 which is the criterion mean was accepted as a positive response. It was calculated as: (4+3+2+1) / 4 = 10 / 4 = 2.5. Any mean score that ranged from 2.5 and above was regarded as positive while below 2.5 was regarded as negative.

CHAPTER FOUR

RESULTS AND DISCUSSION

This chapter is devoted to the analysis of the data, presentation of results and discussion of findings.

4.1 Response rate

4.2 Demographic information

4.3 Analysis of the data

4.4 Discussion of findings.

4.1 Response rate

A total of 269 copies of the questionnaires were distributed to the students of LIS Kwara State University, Malete**,** out of which 264 were completed and retrieved. Resulting in a response rate of 98.7%.

4.2 Demographic information about the respondents

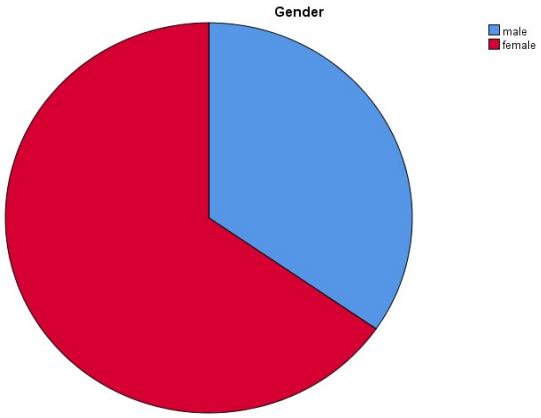

FIGURE 1: DISTRIBUTION OF RESPONDENTS BY SEX

Figure 1 above shows that larger ratio of the respondents were female 177(65.4%) while the remaining 87(34.6%) were male. This implies that majority of respondents were female.

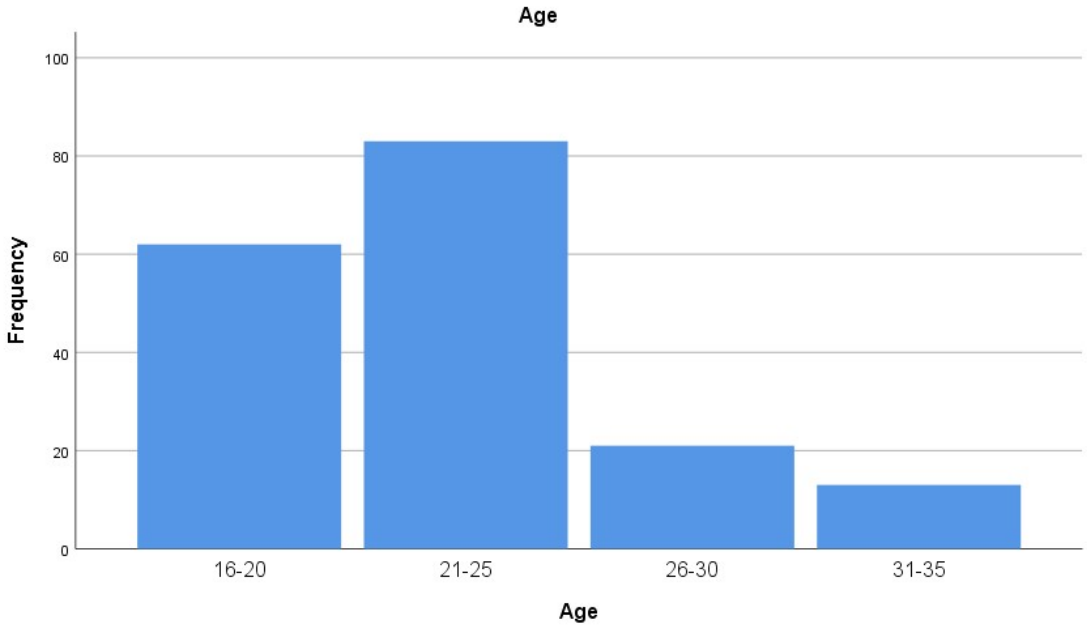

Figure 2: Distribution of respondents by age

The bar chart revealed the distribution of the respondents by age. A total of 91(34.6%) of the respondents were of the age range of 16-20 years, 111(46.4%) are of the age range of 21-25 years, while 39(11.7%) were of the age range of 26-30 years, and 23(7.3%) were 31-35 years. This show that the largest percentage of the respondents for this study are of the age range of 21-25 years follow by 16-20 years' counterpart.

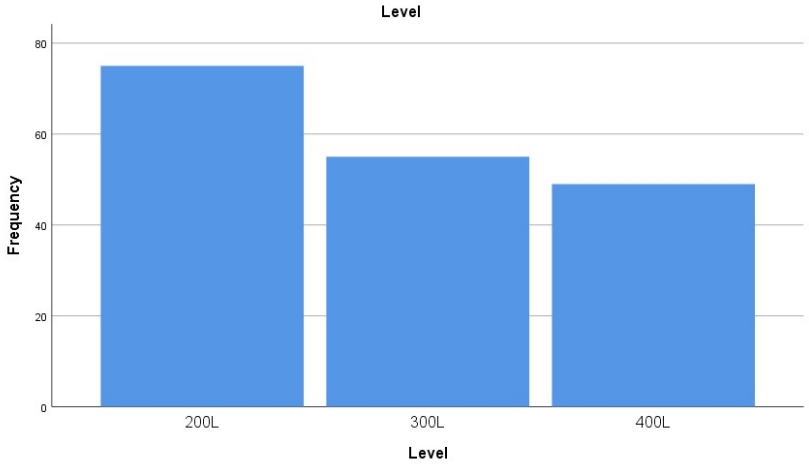

Figure 3: Distribution of respondents by level

A total of 98(41.9%) of the respondents were in 200L, 77(30.7%) of the respondents were in 300L and 89(27.4%) were in 400L. Essentially, the largest percentage of the respondents for this study is two hundred level students followed by three hundred level student's counterparts.

4.3 Analysis of the data

Data analysis was carried out based on the research questions asked.

4.3.1 Research Question 1: what is the information technology used by LIS students in KWASU?

Table 3: Information technology used by LIS students in KWASU

STATEMENTS	SA	A	D	SD	$\bar{x}$	S.D
Computer hardware	207(87.3%)	57(12.7%)	-	-	3.03	0.89
Computer software	247(97.0%)	17(3.0%)	-	-	3.04	0.90
Operating systems	228(91.3%)	36(8.7%)	-	-	3.02	0.93
Web base information and applications	172(61.3%)	92(38.7%)	-	-	3.02	0.96
Smartboards and other telecommunication products (e.g. smartphones)	196(76.0%)	68(24.0%)	-	-	3.15	0.89
Video equipment and multimedia products	247(97.0%)	17(3.0%)	-	-	3.02	0.93
E-Library and Online Public Access Catalogue	237(95.0%)	27(5.0%)	-	-	3.02	0.93
World Wide Web/Internet Services	241(96.0%)	23(4.0%)	-	-	3.03	0.89

Key: SD = Strongly Disagree, D = Disagree, A = Agree, SA = Strongly Agree

Table 3 shows some of the information technology used by LIS students in KWASU. Smartboards and other telecommunication products (e.g. smartphones) ranked highest (3.15 ± 0.89) followed by computer software (3.04 ± 0.90), world wide web (3.03 ± 0.89) and computer hardware (3.03 ± 0.89).

4.3.2 Research Question 2: what are the intellectual development skills possessed by LIS students in KWASU

Table 4: The intellectual development skills possessed by LIS students in KWASU

STATEMENTS	SA	A	D	SD	$\bar{x}$	S.D
Computer literacy skills	198(79.7%)	66(20.3%)	-	-	2.50	1.11
Database/Information searching skills	191(71.0%)	73(29.0%)	-	-	2.44	1.03
Critical thinking	109(49.3%)	36(10.7%)	73(23%)	46(17%)	2.42	1.05
Creativity skills	163(68.0%)	68(24.0%)	33(8.0%)	-	2.50	1.11
Problem solving skills	226(86.7%)	38(13.3%)	-	-	2.61	1.08
Collaboration skills	176(54.0%)	88(46.0%)	-	-	2.42	1.05
Effective Communication/ Dissemination of information skills	226(86.7%)	38(13.3%)	-	-	2.61	1.08
Good Reading ability	230(91.3%)	34(8.7%)	-	-	2.42	1.05
Criterion mean = 2.5 weighted mean = 19.92 ÷ 8 = 2.49					19.92	

Key: SD = Strongly Disagree, D = Disagree, A = Agree, SA = Strongly Agree

Table 4 shows the intellectual development skills possessed by LIS students in KWASU. Effective Communication/Dissemination of information skills (2.61 ± 1.08) and Problem solving skills (2.61 ± 1.08) ranked highest amongst the skills possessed. These are followed by computer literacy skills and creativity skills (2.50 ± 1.11) respectively. Critical thinking and reading ability ranked lowest (2.42 ± 1.05). Also, the criterion mean and weighted mean have the same value meaning that the intellectual development skills of the LIS students in KWASU is on the average.

4.3.3 Research question three: what are the impacts of information technology on intellectual development of students?

Table 5: The impact of information technology on intellectual development of LIS students in KWASU

STATEMENTS	SA	A	D	SD	$\bar{x}$	S.D
EIT preserves information and thereby improves my intellectual development	188(76.0%)	76(24.0%)	-	-	2.61	1.08
EIT smoothens the progress of easy replication of new media and sharing of data	219(83.7%)	45(16.3%)	-	-	2.51	1.11
EIT assist in improving student's memory skills	171(61.3%)	-	93(38.7%)	-	2.44	1.03
EIT helps develop problem-solving skills in students	185(73.0%)	79(27.0%)	-	-	2.42	1.05
EIT caters for the individual differences of students	147(52.0%)	117(48.0 %)	-	-	2.50	1.11
EIT foster the development of 21st century skills	138(49.3%)	93(42.7%)	33(8.0%)	-	2.50	1.11
EIT has greatly contribute to student's motivation for learning	177(71.0%)	87(29.0%)	-	-	2.42	1.05
EIT improves student's attitudes and performances	147(52.0%)	83(39.3%)	-	34(8.7%)	2.61	1.08
Criterion Mean = 2.5 Weighted mean = 2.50					20.01	

Key: SD = Strongly Disagree, D = Disagree, A = Agree, SA = Strongly Agree

Table 5 shows the impact of using information technology on intellectual development of LIS students in KWASU. The items, EIT preserves information and thereby improves my intellectual development (2.61 ± 1.08) and EIT improves student's attitudes and performances (2.61 ± 1.08) were ranked highest followed by EIT smoothens the progress of easy replication of new media and sharing of data (2.51 ± 1.11). EIT helps develop problem-solving skills in students and EIT has greatly contribute to student's motivation for learning (2.42 ±1.05) were ranked lowest.

4.3.4 Research question four: what are the challenges of using electronic information technology?

Table 6: Challenges of using information technology

ITEMS	SA	A	D	SD	$\bar{x}$	S.D
Inadequate training or knowledge about the EIT	196(76.0%)	68(24.0%)	-	-	3.03	0.89
Insufficient Funding	181(66.3%)	83(33.7%)	-	-	3.04	0.90
Availability of constant electricity	157(52.0%)	107(48.0 %)	-	-	3.02	0.93
Negative Attitudes and Beliefs about EIT	230(91.3%)	34(8.7%)	-	-	3.02	0.96
Unreliable devices and Software	207(88.3%)	57(12.7%)	-	-	3.02	0.89
Lack of time to spare in learning the EIT tools	161(53.3%)	103(47.7 %)	-	-	3.02	0.93
Poor Internet Access	247(97.0%)	17(3.0%)	-	-	3.15	0.89
Resistance to Change	196(76.0%)	68(24.0%)	-	-	3.02	0.95

Key: SD = Strongly Disagree, D = Disagree, A = Agree, SA = Strongly Agree

Table 6 shows the challenges of using information technology**.** It was revealed that Poor Internet Access ranked highest among the challenges (3.15 ± .89) followed by Insufficient Funding (3.04 ± .90). This is followed by Inadequate training or knowledge about the EIT (3.03 ± .89). Unreliable devices and Software (3.02 ± .89) ranked lowest.

4.4 Discussion of findings

4.4.1 Information technology used by LIS students in KWASU

The findings from the study showed that Smartboards and other telecommunication products (e.g. smartphones) ranked highest among the information technology used by LIS students in KWASU. This was followed by computer software, world wide web, computer hardware and the rest. This result correlate with studies by Bandele (2016); Bolaji and Babajide (2013) and Ofodu, (2017) where it was indicated that radio, television, computers,

overhead projectors, optical fibers, fax machines, CD-Rom, Internet, electronic notice board, slides, digital multimedia, video/VCD machine and so on are the information technology used by students.

4.4.2 The intellectual development skills possessed by LIS students in KWASU

The study revealed that Effective Communication/Dissemination of information skills and Problem solving skills ranked highest amongst the skills developed. These are followed by computer literacy skills and creativity skills, Collaboration skills, good reading ability and critical thinking. In a study by Pajo and Wallace (2014), it was suggested that the use of EIT could improve performance, teaching, and administration, have a positive impact on education as a whole, and develop relevant skills in the disadvantaged communities.

From the study, the criterion mean and weighted mean are the same meaning that the intellectual development of the LIS students in KWASU in on the average. Intellectual development in students is generally characterized by the development of important mental processes: attention span, understanding information, reasoning, learning, remembering, problem-solving, and thinking from birth until adulthood. Understanding this area of development gives insight into students' ability for logical reasoning at different age levels (Mazur, 2013).

4.4.3 The impact of information technology on intellectual development of students

The findings of the result shows that Information technology has a moderate or average impact on intellectual development of LIS students in KWASU looking at the weighted mean and criterion means. The weighted mean (2.50) is equivalent to the criterion mean of (2.5) set.

Although EIT preserves information and EIT improves student's attitudes and performances were ranked highest followed by EIT smoothens the progress of easy replication of new media and sharing of data, EIT has greatly contributes to student's

motivation for learning was ranked lowest. This finding was in agreement with Lopez, (2013) who submitted that EIT provided innovation for intellectual development of students, and have engendered advances in research about how people learn, thereby bringing about rethinking the structure of intellectual development of students. Nwanewezi and IsifehOkpokwu (2018) also submitted that EIT provides students with individualized instructional activities that accommodate differences in student's level of preparation, abilities and motivation to learn.

4.4.4 **Challenges of using information technology**

Table 6 shows the challenges of using information technology**.** It was shown that there are lots of challenges facing the usage of EIT by students in KWASU. From the study, Poor Internet Access ranked higher, followed by Insufficient Funding. This study is in line with Afshari, Bakar, Su Luan, Samah, and Fooi (2019) who stated that efficient and effective use of technology depends on the availability of hardware and software which procurement is hindered by lack of fund and the equity of access to resources by students. Snoeyink and Ertmer (2014) opined in their study that the major obstacles faced by students on the use of information technology include lack of equipment, unreliability of equipment, lack of technical support and other resource-related issues. The later include both institution level factors, such as organizational culture and lecturer level factors, such as beliefs about teaching and technology and openness to change.

CHAPTER FIVE

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

This chapter presents the summary of the findings, conclusion and recommendations of the influence of information technology on intellectual development of LIS undergraduates of Kwara State University, Malete, Nigeria**.**

5.1 Summary of the Findings

Findings of this study established that:

1. Smartboards and other telecommunication products (e.g. smartphones) are the most used information technology by KWASU students,
2. The intellectual development skills of the LIS students in KWASU in on the average. It was revealed that Effective Communication/Dissemination of information skills, and problem solving skills ranked highest among the intellectual skills possessed by the students**.**
3. In all, EIT has a moderate/average impact on intellectual development looking at the weighted mean and criterion mean. The weighted mean (2.50) is equivalent to the criterion mean of (2.5) set.
4. Insufficient funding, Poor Internet Access**,** Negative Attitudes and Beliefs about EIT, Unreliable devices and Software, Inadequate training or knowledge about the EIT**,** Resistance to Change are obstacles faced by LIS students on the use of information technology.

5.2 Conclusion

Based on the findings of this study, the following conclusions were drawn from the outcomes of the study. The influence of information technology on intellectual development of LIS undergraduates of Kwara State University, Malete, Nigeria was on the average. In the

recent knowledge–based society, the need for universal access and use of information technology is imperative for students to redefine their stand in terms of intellectual development. It is obvious from the finding of this study that most students in KWASU have access to information technology but they are not adequately using these resources for their intellectual development. In addition to the findings of this study, quite a lot of information technology were made available and frequently used in KWASU. In spite of this fact, the study documented some obstacle faced by students in using these EIT which may be due to unreliable devices and Software. As deduced from the study, the students have access to information technology and use them for other purposes. The information professional with high computational skills are more likely to use the information technology more than those with inadequate ICT skills.

5.3 Recommendation

The following recommendations are suggested based on the findings of the study:

1. Negative Attitudes and Beliefs about EIT, Inadequate training or knowledge about the EIT**,** Resistance to Change has been identified as another challenges of using information technology, hence, the university authority couple with university librarian needs to organize orientation for the students of Kwara State University.
2. The study revealed unreliable devices and Software and insufficient funds, hence, funds should be made more available to equip e-libraries with sophisticated technological equipment needed for information technology,
3. Access to internet should be made available at little or no cost for students in other to use information technology often.
4. Information technology should be made available for students' of Kwara State University so as to enhance intellectual development among the students.

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APPENDIX

KWARA STATE POLYTECHNIC, ILORIN
INSTITUTE OF INFORMATION ANDCOMMUNICATION TECHNOLOGY
DEPARTMENT OF LIBRARY AND INFORMATION SCIENCE

Dear Respondent,

REQUEST TO COMPLETE RESEARCH QUESTIONNAIRE.

I am a student of the above-mentioned department and institution, currently undertaking a research on "***Influence of Information Technology on Intellectual Development of LIS Students in Kwara State University, Malete, Nigeria***". We therefore request you to kindly provide answers to the questions as contained in the attached questionnaire and information provided in this questionnaire will be held confidential and used for research purpose only.

Your earliest response will be highly appreciated.

Thanks for your cooperation.

Yours Faithfully,

Researcher

SECTION A

INSTRUCTION: Please tick (√) the appropriate column that reflects your opinion

BIO- DATA

Gender (a) Male ( ) (b) Female ( )

Age range (a) 16-20 ( ) (b) 21-25 ( ) (c) 26-30 ( ) (d) 31-35 ( )

Level (a) 200L ( ) (b) 300L ( ) (c) 400L ( )

SECTION B

I. INFORMATION TECHNOLOGY USED BY KWASU STUDENTS; Kindly attend to the following statement and indicate your level of agreement to the statements (Keys: **SA**= Strongly Agree; **A**=Agree; **D**=Disagree; **SD**=Strongly Disagree)

SN	STATEMENTS	SA	A	D	SD
1.	Computer hardware				
2.	Computer software				
3.	Operating systems				
4.	Web base information and applications				
5.	Smartboards and other telecommunication products (e.g. smartphones)				
6.	Video equipment and multimedia products				
7.	E-Library and Online Public Access Catalogue				

8.	World Wide Web/Internet Services				

II. INTELLECTUAL SKILLS DEVELOPED THROUGH EIT

Kindly attend to the following statement and indicate your level of agreement to the statements (Keys: **SA**= Strongly Agree; **A**=Agree; **D**=Disagree; **SD**=Strongly Disagree)

SN	STATEMENTS	SA	A	D	SD
1.	Computer literacy skills				
2.	Database/Information searching skills				
3.	Critical thinking				
4.	Creativity skills				
5.	Problem solving skills				
6.	Collaboration skills				
7.	Effective Communication/Dissemination of information skills				
8.	Good Reading ability				

III. IMPACT OF INFORMATION TECHNOLOGY ON INTELLECTUAL DEVELOPMENT OF STUDENTS

Kindly attend to the following statement and indicate your level of agreement to the statements (Keys: **SA**= Strongly Agree; **A**=Agree; **D**=Disagree; **SD**=Strongly Disagree)

SN	STATEMENTS	SA	A	D	SD
1.	EIT preserves information and thereby improves my intellectual development				
2.	EIT smooth the progress of easy replication of new media and sharing of data				
3.	EIT assist in improving student's memory skills				
4.	EIT helps develop problem-solving skills in students				
5.	EIT caters for the individual differences of students				
6.	EIT foster the development of 21st century skills				
7.	EIT has greatly contribute to student's motivation for learning				
8.	EIT improves student's attitudes and performances				

IV. CHALLENGES OF USING INFORMATION TECHNOLOGY

Kindly attend to the following statement and indicate your level of agreement to the statements (Keys: **SA**= Strongly Agree; **A**=Agree; **D**=Disagree; **SD**=Strongly Disagree)

SN	STATEMENTS	SA	A	D	SD
1.	Inadequate training or knowledge about the EIT				
2.	Insufficient Funding				

3.	Availability of constant electricity				
4.	Negative Attitudes and Beliefs about EIT				
5.	Unreliable devices and Software				
6.	Lack of time to spare in learning the EIT tools				
7.	Poor Internet Access				
8.	Resistance to Change				