AFRICA INTERNATIONAL UNIVERSITY

AN INVESTIGATION ON THE EFFECTS OF DIGITAL TECHNOLOGY ON THE
LEARNING BEHAVIOR OF STUDENTS IN THE JOS STUDY CENTER OF
NATIONAL OPEN UNIVERSITY OF NIGERIA

BY
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A Thesis submitted to the University in partial fulfillment of
the requirements for the degree of Masters of Education
(Leadership and Administration).

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July, 2017

STUDENTS' DECLARATION

AN INVESTIGATION ON THE EFFECTS OF DIGITAL TECHNOLOGY ON THE
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NATIONAL OPEN UNIVERSITY OF NIGERIA

I declare that this is my original work and has not been submitted to any other
College or University for Academic credit

The views presented herein are not necessarily those of Africa International
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(Signed) ————————————————————————————————
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July, 2017.

ABSTRACT

This study investigated the effects of digital technology on the learning behavior of students in the Jos study Center of National Open University of Nigeria (NOUN). Investigation was made on three learning behaviors that the use of digital technology could affect; social, health and academic. The target population for this study was the Jos-study center of NOUN and the sample population that was selected for the study was 50 final year students.

This study used the quantitative research method to analyze the primary data that was collected with the use of a closed and open-ended structured questionnaire. The data collected was coded and analyzed using SPSS 22, the research questions were answered and presented in frequencies and percentages while the hypothesis of the study was tested with the use of spearman's correlation at 0.05 significance level. The correlation research design was applied to investigate correlation between the variables of this study.

Findings of this study revealed that student's use of digital technology for learning does not significantly affect this three aforementioned learning behaviors of students (social behavior, academic behavior and health behavior). What is evident from the study is that students enjoy the use of digital technologies for learning because it increases their desire to learn, it makes information accessible for the learners which in turn boosts the academic behavior of students. However, a few respondents noted that it affects their health by causing shoulders and neck pain, eye diseases and stress.

From the evidence of the findings, some of the students do not have funds to purchase laptops amongst many other technological required materials for their academic pursuit, consequently, the researcher recommended that the Federal Ministry of Education in Nigeria should use the findings of this research study to put in more effort in ensuring that the digital technologies used for learning by students are readily available at affordable rates and provided in schools because it will motivate the learning behavior of students as they use digital technology for learning purposes.

TO

God Almighty who gave me the grace to endure and complete this research study.

All those who believed in me and helped me to successfully finish my studies in

Africa International University.

ACKNOWLEDGEMENTS

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List of Abbreviations

1. JSC of NOUN; Jos Study Center of National Open University of Nigeria

2. HBM; Health Belief Model

3. TTM; Trans-theoretical Model of Change

4. TLT; Transformational Learning Theory

5. SPSS; Statistical Package for Social Sciences

6. H_o; Research Hypothesis

7. HQ; Research Question

CHAPTER ONE

INTRODUCTION

This study investigated the effects of digital technology on students learning behavior in the Jos-Study Center of the National Open University of Nigeria (JSC of NOUN). This chapter explains the reasons why the researcher chose to carry out this research, it also reveals the methods the researcher used to make investigations in relation to the questions and hypotheses of this research. This chapter further describes the significance, background, problems, purpose, and objectives of the study, its limitations, delimitations, and conceptual framework and the operational definition of key terms that were used in the course of this study.

Background of the Study

Over the past twenty years, the people of our planet have become widely interlinked via worldwide telecommunications, technology, trade and travelling (Marquardt, Berger, and Loan 2004, 3). The interest and desire to carry out this research arose as a result of the researcher observing how the educational sectors use technology in virtually every aspect of education regardless of the fact that there could be some consequences on the students learning behavior. The researcher became interested to know how the use of these technologies may have affected the learning behavior of learners. "In most developed countries students use digital technologies and the Internet in all facets of their daily lives (school, work and

leisure)" (Gallardo-Echenique et al. 2015, 2). The world has become a global village because of the influence of technology (Buendia 1995, 3). Digital technology in education can be explained as the use of computers such as PCs, laptops, mobile phones and handheld smart devices to make information easily accessible for students while the teachers engage in critiquing, analyzing, supporting students to understand content and how to use information to face real life situations (Morris 2014, 2). Could this be the reason why technology was integrated into education? Technology was integrated into education to foster productivity (Ramorola 2013, 656).

The misuse of technology in our society today has become worrisome because of its effects on the learning behavior of persons who use it for one reason or another. A study was taken by the American Life Project on the Pew Internet, analysis of the data collected indicated that one third of teenagers were victims of online harassment and other prominent problems that are frequent due to the misuse of technology including: hacking, internet plagiarism, free access to pornography and addiction to video games (Ribble, Bailey & Ross 2004; Boyle 2010). This is to say that it is possible that the behavior of students can be affected through the use of technology.

In 2011, two researchers from Johns Hopkins University in Baltimore carried out a study on how technology can affect the behavior of students towards their mathematics achievement. A meta-analysis was conducted with over 56, 000 students and the researchers discovered that the use of technology had very little positive effect on the mathematics achievement behavior of students (Vega 2012, 2). The results of the research study emphasized that the students did not achieve much in Mathematics when the teachers use technology for teaching.

The National Educational Technology Standards (NETS) of the United States of America, pointed out that there is an increase in evidence on the abuse of

technology in the United States schools and the most prominent abuse is illegal download of materials from the internet, playing games during class and plagiarizing of information from the internet (Ribble, Bailey, and Ross 2004, 2). In as much as technology has been very much impactful in the teaching-learning process, it has also caused some negative impact on how students behave towards education and these challenges need urgent attention. Kurt Lewin's Social Psychology model says "both social situation (physical settings, the presence of other people, real or imagined) and individual characteristics (physical traits, attitudes and habitual ways of thinking perpetual and cognitive processes, needs and tasks) influence behavior" (Bordens and Horowitz 2002, 6). Therefore, since humans have diverse characteristics from one another, our natural traits can affect our behavior towards phenomena. Digital technology may not affect every student's behavior. No two persons are alike psychologically, that is a person behaves, thinks and feel different from any other person on earth.

Health effects have increased due to the exposure of knowledge even though several interventions have been made to provide change in health behavior. Some of the organizations that have been providing health behavior solutions include: the United States Clinical Preventive Services Task Force, Centers for Disease Prevention and Control Task Force on Community Preventive Services. The clinical Preventive Services, for example, provides treatment for health behavior problems such as sedentary lifestyle and diabetes management (Glanz, Rimer, and Viswanath 2008, 15). Therefore, health behaviors may exist as a result of exposure to knowledge.

Description of Study Area

The National Open University of Nigeria (NOUN) was established in 1983 as a springboard that provides distance learning to Nigerians but was suspended in 1984

by the government. Olusegun Obasanjo the former president of Nigeria resuscitated distance learning in 2001 and the establishments of study centers began to increase across the country and as at March 2017, there is 63 study centers of NOUN spread across the country offering 50 programmes. The selected study center for this study was the Jos Study Center which is located at Lomay International Hotel road, Sabon Barki, Jos Plateau State. It is one of the approved accredited centers in the North central zone where students who registered under the Jos Center do their examinations using the computers provided by the government. The motto of the institution is "work and learn" which creates a platform for students to access their courses online and respond according to the required assessments called TMA (Tutor-Marked Assignment) where students are expected to study and submit their TMA for every unit read (NOUN 2017). The researcher was able to find out the effects of the use of digital technology on the social, health and academic behavior of final year students from the sample size of JSC of NOUN.

Statement of the Problem

Students in the JSC of NOUN uses digital technology for every facet of their education, and the researcher intends to find out those possible effects the constant use of digital technology may cause on the health, social and academic behavior of the students. The problem is related to the research of Damian Bebell (2005), who conducted a study to evaluate the effect of technology on promoting the academic excellence of students in six New Hampshire middle schools. findings generated from the analyzed results of this research study indicated that students participation, motivation and ability to work in groups independently increased as they used digital technology for teaching-learning process which also promoted the academic excellence of the students (Blazer 2008, 13). However, the researcher focused on

discovering how the use of digital technology affected the health behavior, social behavior and academic behavior of the JSC of NOUN students.

Purpose of the Study

This study investigated how the learning behaviors of students were affected by the use of digital technology. Students are prone to encounter some risk factors as a result of daily and constant exposure to the use of digital technology and so the social development of the students can become affected due to the social isolation of students from their peers and families (Corcoran 2012, 15). It further examined how the use of digital technology affected the health behavior of students', the prolonged use of digital technology may tend to have adverse effects on the health of students such as carpal tunnel syndrome, strain of eyes and brain, stress, concentration difficulties and sleeping challenges (Ives 2012, 47). Recent studies indicated that the use of digital technology has an effect on the health behavior of students in the aspects of poor nutrition, sleeping disorders and obesity. Researchers advised students to take note of the health behavior that students may possess as a result of the use of technology (Melton et al. 2014, 516).

The study also examined how the use of digital technology may affect the academic behavior of the JSC of NOUN students. Recent findings indicated that the use of digital technology in teaching-learning process increases a positive impact on the academic performance of students (ISTE 2008, 7).

Significance of the Study

Practitioners and the educational professionals might use this study as a reference to inform their practice by improving on their use of digital technology to

educate students and by consciously ensuring that their use of digital technology does not affect the learning behavior of students negatively (Ives 2012, 100).

This study is also significant for students to become aware of the dangers that they might encounter as a result of the use of digital technology and how to manage those liable dangers (Ribble, Bailey, and Ross 2004, 4). The research will be useful for policy makers, curriculum designers and even other researchers will find this study useful for further studies.

Higher institutions who use digital technology for teaching-learning purposes such as NOUN and Africa International University Karen, Nairobi, will find this research significant because if technology can affect the learning behavior of students negatively, it will be necessary for institutions to put some restrictions and have a line of discipline that can help reduce the chances of exposing students to any form of improper learning behaviors that can tarnish the reputation of both individuals and the institution. If this is done, the institution will be able to achieve its mission (Lamar 1976, 7).

The Research Objectives

This research study had the following objectives;

1. To explore the effects of digital technology on the social behavior of students.
2. To explain the effects of digital technology on the academic behavior of students.
3. To explain how digital technology affects the health of students.

Methodology

Quantitative research method was used for this study because it had the ability to provide descriptions about the experiences of people in regards to the research

problems (Hancock, Ockleford, and Windridge 2009, 6). This study was carried out in the JSC of NOUN and a total of 50 final year students were conveniently selected as the sample size for the research study. The data of this study was obtained through the use of questionnaire schedules, to provide answers to the research questions and hypotheses of the study. Data acquired was used in predicting, explaining and developing answers to the problems of this study (Berry and Berry 1994, 40).

Research Questions

Below are the research questions that were used for this study:

1. What is the effect of digital technology on student's social behavior?

2. How does digital technology affect student's academic behavior?

3. What health behavior do students develop as a result of the use of digital technology?

Research Hypotheses

The following hypotheses were generated based on the research questions:

1. Digital technology has no relationship with student's academic behavior.

2. The use of digital technology has no relationship with students' social life.

3. The use of digital technology has no relationship with students' health.

Scope of the Study

This study considered only the JSC of NOUN for the purpose of this study because the university uses digital technology mainly for teaching and learning process (Okonkwo 2012, 2). Therefore, the study did not consider all the 63 study centers of NOUN in all the states of Nigeria (Adewale, Ajadi, and Inegbedion 2011, 642).

Delimitations of the Study

1. The study is curbed to the JSC of NOUN.

2. This study investigated only three behavioral factors that students may exhibit as a result of using digital technology.

Limitations of the Study

1. The findings of this study cannot be generalized to all the study centers of the country.

2. The researcher did not collect data from all the students but only from 50 final year students of the institution.

Conceptual Framework

Digital technology provides various tools in which learning seems easier and better for the students to understand and also relate with their peers even as they interact together in the teaching-learning process (Zealand 2016). Student's academic, health and social behavior can be dependent on their use of digital technology because it can cause a change in the behavior of students. This research study used questionnaires as a quantitative method of data collection to make inquiries from learners on how the use of digital technology affects their behaviors socially; in the sense of how their relationship with family, course mates and friends are affected; how their health behavior is affected by digital technology in the aspect of overusing and depending on technology for knowledge; and how digital technology has affected the academic behavior of students such as their motivation to learn (knowledge) and perform. Theories and research studies of scholars enabled the researcher to explain the relationship of the independent variables with the dependent variables in the

study. Below is a diagram showing the relationship between the variables of the

conceptual framework.
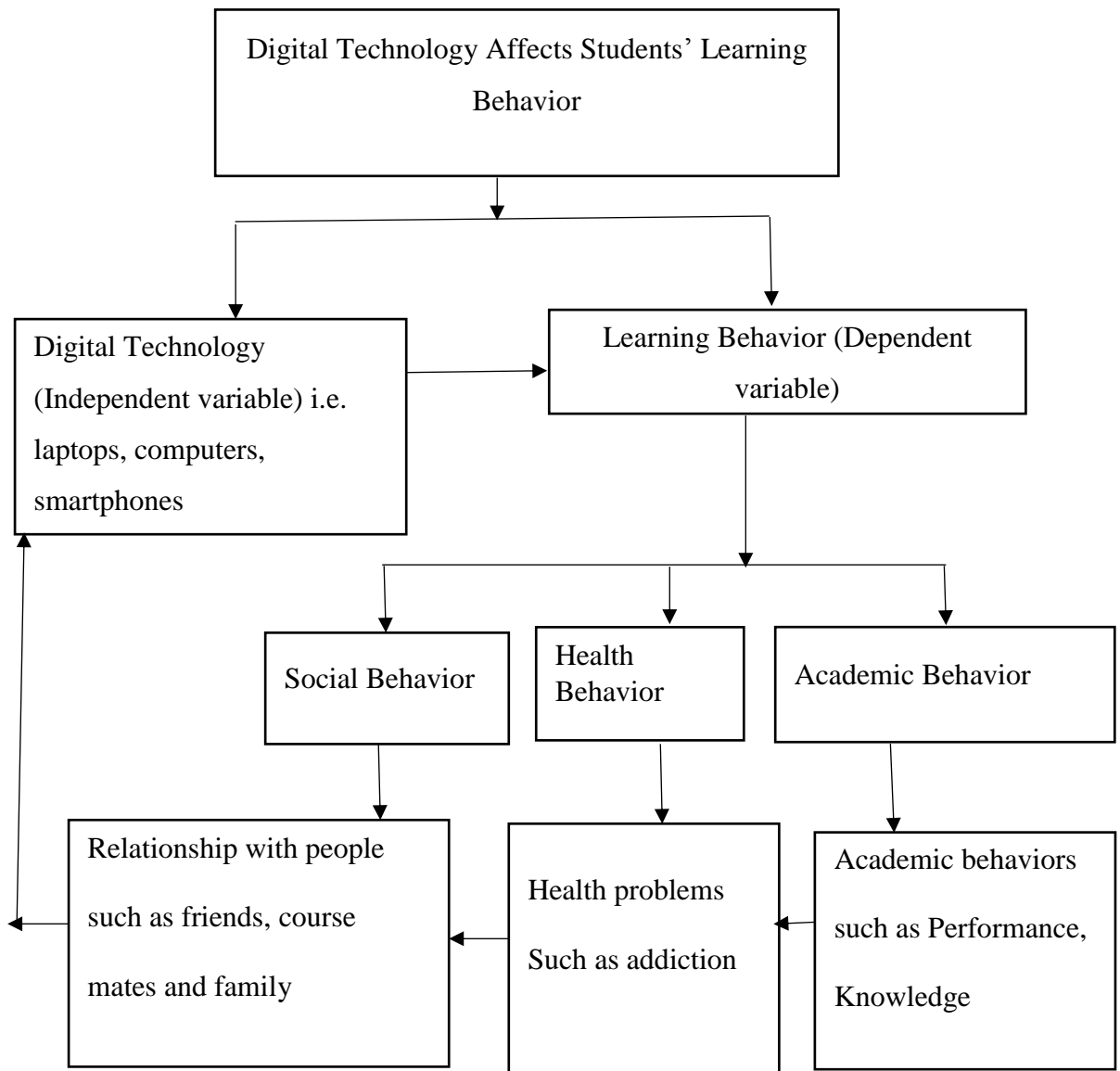
Figure 1.1: A diagram showing the conceptual framework of the study

Definition of Key Terms

Digital Technology

Digital technology is regarded as a computer device which accepts inputs,

stores information, produces output in form of effects and numbers (Evens 2003, 51).

It is used for diverse purposes such as communication, examinations, reading-text,

capturing images, audio and videoing, all of the above is achievable by the use of

smart-phones, laptop, IPad, camera among others (Ministry of Education, and Net-Safe 2015).

Learning Behavior

According to the Merriam-Webster dictionary, behavior is the way or manner in which something reacts or respond to its environment (Merriam Webster 2016), while Learning can be defined as "changes in the behavior of an organism that result from regularities in the environment of the organism" (Houwer, Holmes, and Moors 2013, 1). Learning behavior is the way people learn in relation to the factors that surround them, the behaviors of individuals can be determined by the way they react to certain things (Guez and Allen 2000, 9).

Health Behavior

Health behavior can be defined as any behavior performed by an individual regardless of health status either intentional or unintentional (Wacker 1990, 15). This is similar to the working definition of health behavior that Gochman proposed as those personal attributes "such as beliefs, expectations, motives, values, perceptions, and other cognitive elements; personality characteristics, including affective and emotional states and traits; and overt behavior patterns, actions, and habits that relate to health maintenance, to health restoration, and to health improvement" (Glanz, Rimer, and Viswanath 2008, 50).

Social Behavior

Social behavior can be defined as the attitude of individuals towards a group of people or the reaction that a person uses to show how they feel. (Alexander and Arbor 1974, 326–27).

Academic Behavior

  Academic behavior is the persistent effort and attitude of students towards learning which is evident in students learning oriented actions. Some of the characteristics of academic behavior are; students desire for knowledge, attentiveness to lectures, knowledge acquisition, intellectual curiosity and interest in educational related goals (Chien 2015, 30).

CHAPTER TWO

LITERATURE REVIEW

Introduction

This study aimed at investigating the effects of digital technology on the learning behavior of students in the JSC of NOUN. Therefore, this chapter reviewed the relevant studies that have been carried out in relation to the history of integrating digital technology into education and to explain the social, achievement and health behavior of students due to their use of digital technology and finally, to describe the theological integration of digital technology on students' learning behavior.

History of Integrating Digital Technology into Education

History helps humankind to understand the foundation of thoughts, events and phenomena (Januszewski 1996, 3). Ancient historians' related abacus as a tool used for measurement by the ancient Greek in 3000 BC, as the very first advent of the computer age, and in 1742 a French mathematician Blaise Pascal created the first adding machine that was used for calculations until it was improved by Charles Babbage in 1823 (Ives 2012, 17). The very first computers that were approved for personal use were given in the 1970s even though they were cumbersome, awkward and expensive but they were adopted by government agencies. The government agencies decided to use the computers to help them keep records of data and information. It was at this level that Roger Tomlinson saw the need to create the Canadian Geographic Information System (GIS) in 1968 for the purpose of searching and locating the addresses of places on earth (Ramasubramanian 2010, 21). From

1968-1978, computers became more expedient as it became more reachable to the general public for personal use and from 1978-1998, internet and worldwide web were created for the purpose of enabling people to have access to information easily. VA Shiva Ayyadurai created Emails in 1982 to enable the users of digital technologies such as the computers, Pcs/laptops to communicate faster with the use of emails (Balter 1998, 11).

In the mid-1990s, lecturers began to focus more on using digitized technology for teaching students and communication became easier due to the relative speed on internet access which motivated lecturers to introduce the idea of video lecturing by 1995. In 2002, the Massachusetts Institute of Technology (MIT) produced video lecture notes and began to sell to the general public and by the end of 2007, more digitized softwares' were produced by companies such as Apple Inc. for the purpose of helping lecturers to design the school curriculum and present lectures in a more understandable manner for the learners (Bates 2014).

The use of web-based communication, mobile computing, GIS and the integration of digital technology into education took its steps from 1998-2008 (Ramasubramanian 2010, 22). Digital technologies have become quite prominent in the educational sector because there is a need for students to possess the skills of the 21st century. Hence, digital technology provides new strategies in which students can learn and collaborate, share ideas and knowledge, communicate appropriately and develop new approaches for the purpose of making the educational sector successful (Sadaf, Newby, and Ertmer 2013, 171).

Theories and Models of Learning Behaviors towards the use of Digital Technology

Over the past years, scholars have postulated theories that will enable humankind to understand the behaviors of learners and how to use the knowledge of

behavioral theories to solve real-life situations. Theories can be explained as, "sets of interrelated concepts, definitions, and propositions that presents a systematic view of events or situations by specifying relations among variables in order to explain and predict events or situations (Noar and Zimmerman 2005, 2). Behavioral theories support a large extent of the teaching-learning process by providing various approaches and strategies that will enable the educational sector to have an adequate integrated learning system (Chen 2016, 1). Theories vary on how the individual persons relate to their environment and on how to determine the causes of certain behavior (Noar and Zimmerman 2005, 4).

Social Cognitive Theory

Social cognitive theory is a theory postulated by Albert Bandura which emphasizes the dynamic interaction between people (personal factors), behavior and the environment. The behavior factors, personal factors and environment factors affect each other as they interact together" (Glanz, Rimer, and Viswanath 2016).

Albert Bandura (1977) agreed to the classical conditioning theory by John Watson (1913) that explains how people learn new behaviors by their ways of association and also to the operant conditioning theory by B.F. Skinner (1920) which explains how behaviors can be repeated when reinforcement is provided for learners, Albert Bandura, added to both theories by postulating the social cognitive theory which states that behavior can be learnt through observational learning and behavior can be changed based on stimulus and response (McLeod 2011).

The purpose of the social cognitive theory is to develop the competences of the learners through modelling, to strengthen the beliefs of the learners and to enable them use their talents, while setting goal systems that will motivate the learners

towards academic achievement (Bandura 1988, 276). A diagrammatic description of the theory is illustrated below.
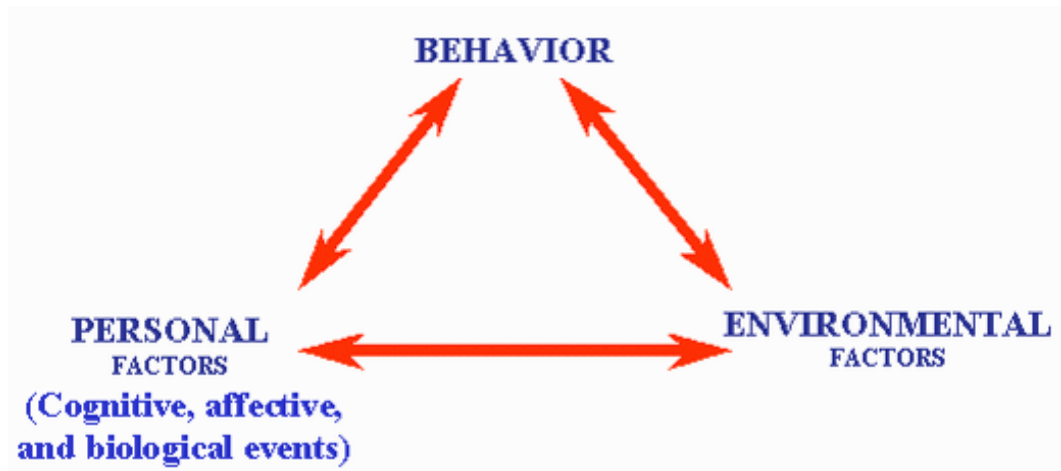
Figure 2.1. Social Cognitive Theory

Source: (Pajares 2002, 2).

Albert Bandura conducted an experiment to find out if the use of technology had effect on children. He called this experiment the Bobo-doll experiment and he conducted the experiment with the use of Media-television. The Nursery school boys and girls watched a film that showed some group of adults aggressively beating a clown. After watching the film, the children were placed in a room with the Bobo-doll (clown) without any adult supervision but the children were observed secretly and the researcher discovered that the children began to beat the Bobo-doll aggressively just as they had earlier watched in the film. The experiment affirmed that the children had acquired an aggressive behavior towards clowns as a result of the film they had watched. The researcher concluded that the behavior of children can be greatly influenced when they use technology and the behavior children learn from their interaction with technology will affect the social behavior of the learners in their respective environments (Koch 2009).

Health Belief Model

The Health Belief Model (HBM) was postulated in 1950 by Hochbaum, Rosenstock and Kegels who were working in the United States Public Health (Glanz 2002, 1). The health belief model is the most commonly used theory in health education and there are possible non-compliance reasons to health actions. The theory was created as a result of a failed free tuberculosis screening program. The purpose of the theory was to assess the health behavior of individuals through perception examination and attitudes some individuals may have developed towards illness and the negative outcome of such attitude towards illness (Jones 2007, 38). The HBM assumes that "the behavior of individuals is influenced by three factors which are; (a) Perceived susceptibility and severity, (b) Perceived threat (c) perceived benefits and barriers" (Burke 2013, 1). The diagram below describes the HBM.
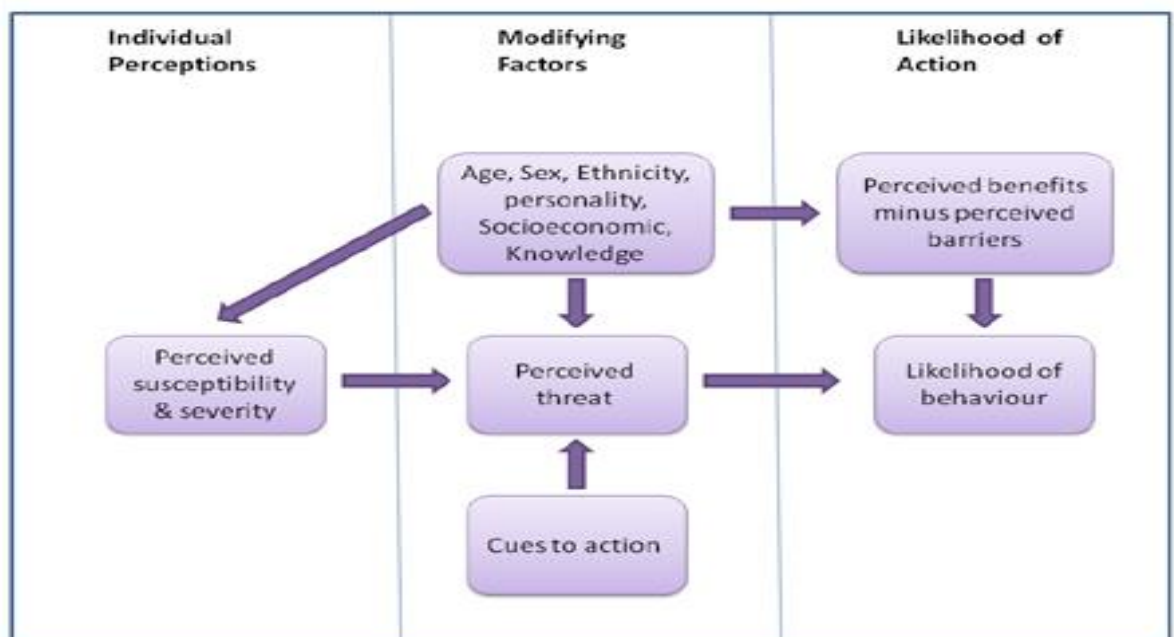
Figure 2.2. Health Belief Model

Source: (Shaw 2012, 2).

The health-belief model proposes that "for someone to perform a recommended health behavior, the person must first believe that he or she is at the

risk of acquiring negative health outcomes" (Fishbein and Yzer 2003, 165). This model was initially developed for the purpose of discovering the behavior of individuals towards chronic diseases but this model was later adopted for the purpose of discovering general health behavior problems (Semenza, Ploubidis, and George 2011). The HBM is also regarded in the health behavior issues that are related to the use of digital technology.

A study was conducted in Malaysia to find-out how the perceived health risk of using internet is related to HBM. A purposive sampling was carried out on the women who had access to the internet. The researcher analyzed the data collected and concluded that, the use of internet caused a proactive behavior in the women of Malaysia and not a reactive behavior. The respondents believed that the use of internet was helpful to their health status because the internet provided answers to every type of ailment they discover and how to prevent themselves from infections (Choi and Yen 2015, 2).

The HBM explains how the health behavior of students can be affected when students become addicted to the interactive features of the internet such as emailing, texting with computers/phones and constant laptop usage. The disadvantage of the internet to the health-behavior of students is that, students are likely to suffer health conditions that may affect them for a very long time such as back-aches, poor eye sight and brain diseases because the students may also rely on the internet for their treatment which could be very much disastrous to their lives (Boase et al. 2006, 13).

Trans-theoretical Model of Change

The trans-theoretical model (TTM) of change was proposed by two psychologists named James Prochaska and Carlo Di-Clemente. This model was created to help people change from a particular behavior (Lehnen 2010, 2). In 1982,

an empirical analysis was conducted to analyze the reasons behind the change of behavior in individuals. The model was used to help people who were encountering health behavior issue and his model posits that there are six stages in change of behavior (Prochaska and Velicer 1997, 38–48). The six stages of change are; Pre-contemplation, contemplation, preparation, action, maintenance and termination (Hergenrather 2003, 1). The idea behind this model is that individuals who have the same form of challenges will pass through the same stages of change (Marzano et al. 2012, 8). For example, a student who is addicted to the use of digital technology for teaching-learning process and desires to stop that behavior will pass through the same stages of change another student who was once addicted passed through. The TTM is an intentional model of change that focuses on the decision of an individual to change some certain form of behaviors.

A study was conducted in 2001 by three researchers who investigated three groups of people were selected; the secondary school students, undergraduate students and the employed adults. The purpose of the study was to find out if the trans-theoretical model was applied in achieving changes in behavior. The researchers used questionnaires to collect data and discovered that the Trans-theoretical model was applied in all the three groups of people that were studied by the researchers. Therefore, the TTM can help students to know how to adjust their behavior towards the changes in their environment and within themselves even as they interact with phenomena (Rodgers, Courneya, and Bayduza 2001, 33–41). Below is a diagrammatic description of TTM.
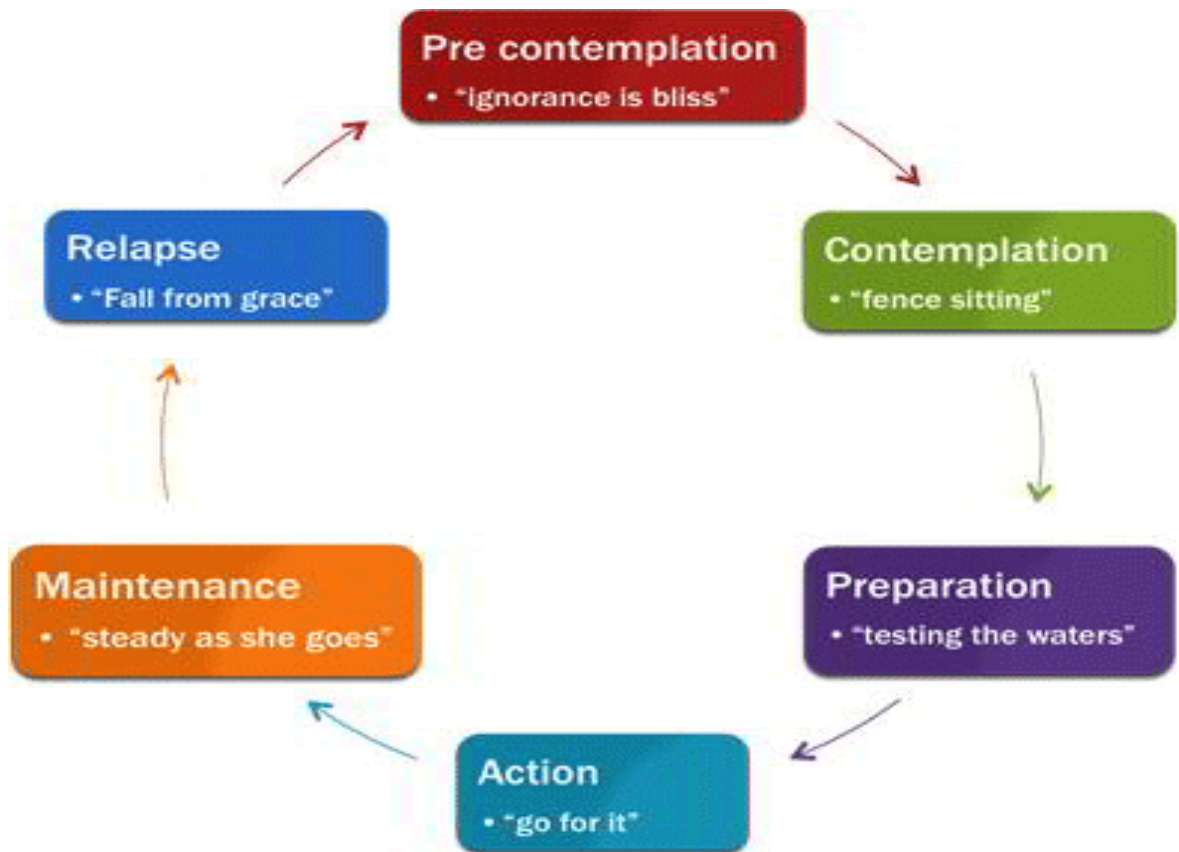
Figure 2.3. Trans-theoretical Model of Change

Source:(Young 2012, 3).

Transformational Learning Theory

The Transformational Learning Theory (TLT) is a learning theory that is based on the nature of the communication of humankind. This theory was founded by Jack Mezirow in 1981. The transformational learning theory is a theory "that induces change in the learner especially change that refers to the learning experiences which shapes the learner and produces a significant impact or paradigm shifts which affects the learners' subsequent experiences" (Cooper 2001, 1). This theory points out that learners are shaped based on their expectations, perceptions, feelings, experiences, cognition and environment (Reis 2005, 2). In regards to education, this theory refers to the learner's exposure to learning experiences and the subsequent changes the

learners will develop as a result of the learning experiences (Sahin Izmirli and

Kabakçi Yurdakul 2014, 2294). Below is a diagrammatic description of TLT:
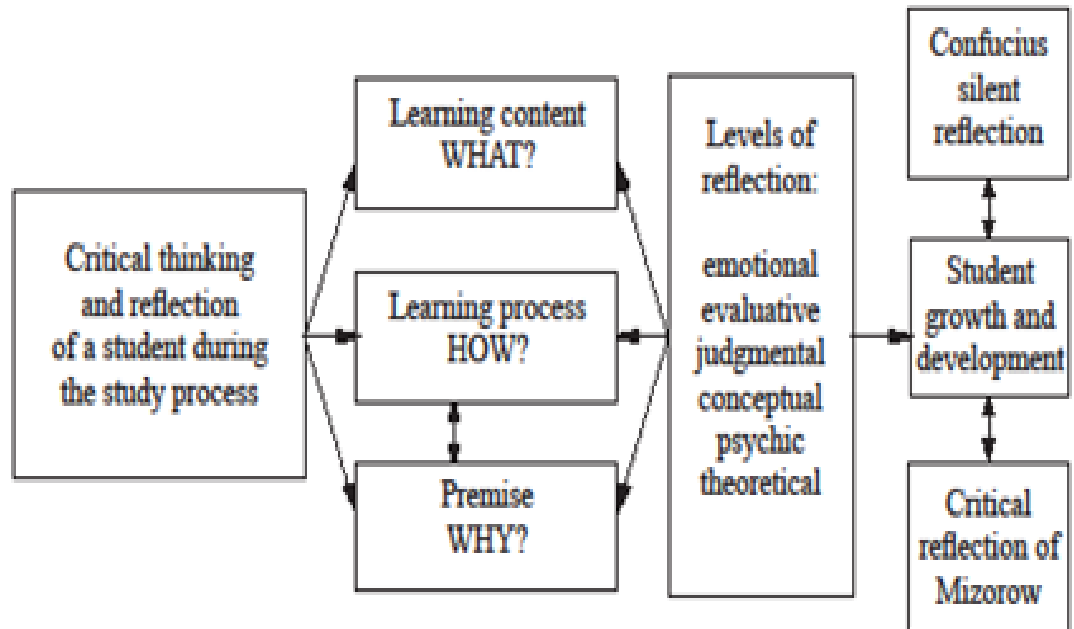
Figure 2.4. Transformational Learning Theory

Source: (Renigere 2014, 1209).

Mezirow further described the transformation learning theory as a practical

theory that requires teachers who know how to communicate effectively to students

when they are using online technologies for teaching-learning process. However, this

theory requires teachers to be well equipped on what, how and why they should make

learners develop the appropriate behavior towards their learning experiences

(Kitchenham 2008, 113). This theory requires educators to use digital technologies to

communicate to learners in such a way that the use of digital technology will not

create negative behavior for the learners. Rather, let the integration of digital

technology to education provide a transformative learning experience for the learners.

Students' Academic Behavior

When students are engaged in the teaching-learning process, it motivates them towards positive academic behavior. There are numerous evidences to prove that digital technology has provided the basic educational needs and requirements. Educators have come to realize that there is great benefit in integrating digital technology to education because it leads to high achievement, improves the behavior of students towards learning, improves opportunities for the development of educational goals, increases communication among stakeholders and learners (Grinager 2006, 2). Research has suggested that digital technology helps students to become intellectually sound and equipped for real life problems.

Digital technology connects students to experts all around the world and allows students to encounter diversity of knowledge as they relate with the digital materials provided for acquiring knowledge (Li and Ma 2010). Students have the will power to choose to regulate their behavior towards their studies. A student may fail to have a positive self-regulated behavior towards achieving academic goals when that student is not motivated (Yu et al. 2015, 98). The performance of students can be improved by the quality of technology the teacher uses in teaching-learning process (Gambari, Yusuf, and Thomas 2015, 13).

Two studies were conducted in Denmark for a primary and junior secondary school by the Danish Ministry of Education in 2015. Both qualitative and quantitative research methods were used for the collection of data in both schools. The aim of the researcher was to find out if those schools had documents that allowed teachers to evaluate the impact of digital processes on students learning. The researchers discovered that the teachers used formative evaluation to assess the performance of students and the teachers in turn, gave students feedback from the evaluation done by

the teachers. The researchers also discovered that the performance of the students depended on how well the teachers used digital processes in teaching students. This research affirmed that for students to assimilate the information that was taught by the teacher through the use of digital processes, the teacher will have to ensure that the contents are designed in such a way that students' academic records will show how effective the teacher's method of teaching was (Ribble, Bailey, and Ross 2004, 1–6). This means that teachers use of digital technology for teaching-learning process may affect the academic behavior of learners.

The use of technology in education can motivate students towards achievement behavior because the goal of studying is to acquire good results that will enable individuals to advance in their academic goals. Therefore, students will strive to be successful academically when teachers measure the achievement level of students through the form of formative or standardized evaluation (Grinager 2006, 8). The desire to have good evaluation results from teachers may prompt students to become motivated and focused on using digital technology effectively for understanding the various subject contents and successfully completing every learning task (Semerci and Duman 2013,138).

A study was carried out in Sawyer Business School of Suffolk University in Boston, Massachusetts to find out if the use of digital textbooks affected the attitude and behavior of learners towards learning. The researchers divided the students into six teams; five out of the six teams were given digital textbooks while the sixth team was given paper textbooks. The findings of this research study indicated that students' behavior did not change over time as the use of digital textbooks increased per semester. The behavior and attitudes of students display that students have accepted the use of digital textbooks and there may be no difference between the behavior of

students who used paper textbooks and digital textbooks (Weisberg 2011, 188–96). The use of digital technology has helped education not to stop in the class room alone but to continue even while students are out of the school premises because students can access text-books and course materials online wherever they go so long as they have access to the internet (Whiteside 2011, 1). This means that students use of digital technology may likely have an effect on the academic behavior of students.

Students' Social Behavior

Technology seems to have taken over the social life of the world, people will rather spend time on their computers, phones and laptops than to interact face-face with their friends, families, lecturers and class mates. Most students have in their possession various forms of digital technologies for the purpose of making the teaching-learning process meaningful and easy to comprehend but most of the attention students give to these digital technologies affect their relationships with their families, friends and classmates (Taylor 2013, 1). Aric Sigman a Medical doctor, noted that students are not expected to spend more than eight hours on digital technologies because it may cause cognitive damage for the learners and when students use digital technologies frequently, it can affect the decision making of teenagers and also damage the relationships of students with their classmates, families, friends and authority figures (Thomas and Thomas 2016, 1). It is important to note that the kind of relationship students have with their peers can affect their behavior towards their studies (McLeod, Fisher, and Hoover 2003, 75).

A study was conducted by Boyle Clifton on the effectiveness of a digital citizen curriculum in an urban school. A quasi-experimental research was used by the researcher to find out how the students exposure to digital citizen curriculum can affect the normative behavior of students in relation to the use of digital technology.

The National Cancer Institute (2016), explained normative behavior as "individual beliefs about the extent to which other people who are important to them think they should or should not perform particular behaviors". Findings from the study indicated that the use of digital citizen curriculum affects the normative behavior of students (Boyle 2010, 105). Students' social behavior can depend on their perception towards digital technology. However, teachers can modify the way students perceive digital technology by ensuring that technology is moderately used in the various aspects of teaching and learning to allow students to discuss and share ideas with their course mates (Kelsey 2014, 2). Parents also can regulate the social behavior of students by having a more frequent face-face interaction with their children rather than through the use of digital technologies (Taylor 2013, 2).

The advent of technology in this 21st century has made it possible for students to communicate with their friends, families and classmates easily with the use of social media sites such as Facebook, Twitter, Instagram, and WhatsApp. Two researchers carried out a study in Youngstown State University to investigate on students' use of social media and how effective students' communication is with others who are not on the social media. The researchers distributed questionnaires to the students to enable them acquire data and the findings from the analysis done on the data indicated that all the students in the university were engaged in the use of one or more form of social media. Also, the researcher discovered that the students used this social media to communicate to their friends, family and classmates more often while they were in school but most students did not get to communicate with friends and families who are not on the social medias while they were in school due to how busy students get with school work (Sponcil and Gitimu 2010, 2–12).

Students' Health Behavior

A study conducted in Michigan University indicated that students who are not engaged with the use of digital technology do not have the same type of health behaviors with those students who use digital technology in the teaching and learning processes. This is because the introduction of students to the internet for the purpose of learning has exposed learners to internet sites that have damaged the intellectual capacity of students (Caitlin 2015, 2). There are indirect evidences that were discovered from the various studies carried out by educational psychologists such as Kristen Purcell which indicated that the use of digital technology for teaching-learning process, affects the brain development of leaners. This has made some learners to become addicted to seeking educational help and general life situations problems from the internet (Richtel 2012, 1).

A study was carried out in 2010 by the Ecological Momentary Interventions (EMI) to critique and synthesize the effect of mobile technology on the health behaviors of learners. The researchers discovered that the effects that mobile technology has on the health behavior of learners was individualistic and not holistic (Heron and Smyth 2010, 1–39). This is applicable to the use of digital technology in teaching-learning process, because health behavior may be individualistic which means that, not all students may exhibit health behavior.

Educators may need to be careful to ensure that students see the link between their behavior in school and out of school. Whatever affects students in school will definitely affect their relationship outside of schools, therefore, the attitude students establish at the course of using digital technologies will affect their behavior towards other things in life (Hunt and Bohlin 1991, 9). Due to the long hours of stay on the use of digital technologies for the purpose of learning or entertainment most youths have

been placed on a high health risk such as constant headaches due to the fact that students usually get addicted to the use of digital technologies and forget about exercising their bodies to keep them fit (Laguador 2013, 382).

<div align="center">Theological Integration of Technology in Christian Schools</div>

The foundation of virtually every concept and knowledge is from the scriptures (Elliott 2016). Technology has long existed even before Jesus was born on earth, for technology was regarded by the ancient tribes of Israel as the discovery of knowledge and putting that knowledge into use for the benefit of making things better (Hess 2007, 20). Technology is commonly used in various organizations including the church because technology is regarded as a means for making things easier. This is the reason why some Christian schools will adopt every new trend of education technology into their schools without considering its consequences on the future Christian leaders they are training. However, some of these technologies used in the Christian schools could actually influence the mind of the teachers and students in the schools to do things that are against the ethos of the Bible (Sims 2016, 12).

Proverbs 25:2b says "it is the Kings' privilege to discover things"(*Holy Bible, New Living Translation* 1996). It is by discovery that humankind realized how the universe is made and so this Bible passage describes how humankind pursues the things of this world for the benefit of making discoveries and when man has succeeded in his search for knowledge, people became satisfied (Labar 2005, 1). Humankind became conversant with the use of technology for building and creating things right from the ancient days, in the book of Genesis 11, there is a story about the tower of Babel where people gathered together to build a tower that will reach heavens because humankind began to feel that the distance of heaven to earth should not be a limit to them, and so they gave their time, attention, body and strength to the

building of the tower but God in his anger brought division amongst them by making

them speak in different languages (Kaethler 2015, 86).

In the story above, the purpose of building that tower was to have a link

between God and humanity (they had a creative mind for technology), they wanted to

build that tower so that they will not scatter (technology requires creative thinking

about the usefulness of what is being created) but then God scattered them by giving

them many languages (technology has its own consequences). In this present times,

technology translates a lot of languages which has enabled Christians to preach the

gospel to the various languages in the world (Whiting 2011, 6).

Technology was used for the glorification of God by Noah in Genesis chapter

6-9, he built an ark not to show the world how well he could build the ark but rather

he built it in accordance to the will of God. For technology is meant for the

glorification of God and not for selfish gain, 1 Corinthians 10:31 says; "Whatever you

eat or drink or whatever you do, you must do all for the glory of God" (*Holy Bible,*

New Living Translation 1996). The integration of technology into school should be to

the glory of God and to help create stewards who will serve God and work for the

glory of God in the society. For we are in a fallen generation from the time of the

garden of Eden, therefore, whatever educators decide to do should be for the purpose

of reconciling the world back to God by ensuring that technology provides the basic

requirements that will permit students to have time to serve God and the behavior of

students towards God will not be at a disadvantage due to the use of digital

technology for teaching and learning processes (Labar 2005, 2).

The book of Romans 12:2 says; "do not copy the behavior and customs of this

world, but let God transform you into a new person by changing the way you think.

Then you will know what God wants you to do, and you will know how good and

pleasing and perfect his will really is"(*Holy Bible, New Living Translation* 1996).

Students cannot use the integration of technology into Christian education as an

excuse towards the way they worship God and how well they create time for God

because in this passage above, the Bible has instructed humanity not to copy the

behavior of this world but should learn the will of God and plans of God by doing

what is pleasing and acceptable to God. However, God has provided the Holy Spirit

for everyone who accepts God to help and direct man on how not to behave like the

people of the world (Schwarz 1979).

The Holy Spirit, teaches us how to behave in Galatians 5:22-23 "God's Spirit

makes us loving, happy, peaceful, patient, kind, good, faithful, gentle, and self-

controlled. There is no law against behaving in any of these ways" (Kuehn 2011).

Therefore, the Spirit of God will direct students on how to behave when they use

digital technology for teaching-learning process and when they use it for the glory of

God, the grace of God is sufficient to protect students from encountering any negative

effect that may arise as a result of the use of digital technologies. Proverbs 4:20-22

says; "pay attention, my child, to what I say. Listen carefully. Do not lose sight of my

words let them penetrate deep within your heart for they bring life and radiant health

to anyone who discovers their meaning"(*Holy Bible, New Living Translation* 1996).

Obedience should be the key element in the life of every believer.

In conclusion, this chapter enabled the researcher to acquire more

understanding on how the use of digital technology can affect the health, academic

and social behavior of learners. The knowledge acquired from this chapter was

applied to the analyzed results of this research study in chapter five and the research

instrument for this research study was grounded from the knowledge acquired in this

chapter. Furthermore, right from the time of creation, the use of technology was

employed by human beings but there are ethical bases stated in the Bible on which the believers of Christ are expected to use as guidelines for identifying the most appropriate way of using technology which calls for a sense of responsibility. Exodus 15:26 says, "if you will listen carefully to the voice of the Lord your God and do what is right in his sight, obeying his commands and laws, then I will not make you suffer the diseases I sent on the Egyptians, for I am the Lord who heals you"(*Holy Bible, New Living Translation* 1996). This was the promise God made with the Israelites and Christians can use it in the context of using technologies to teach. Therefore, educators, students and the society as a whole should use digital technologies for the glorification of God by doing only what is right in the sight of God.

CHAPTER THREE

RESEARCH METHODOLOGY

Introduction

The aim of this study was to investigate the effects of digital technology on students' social, health and academic behavior. Research methodology means, "those range of approaches used in educational research to gather data which are to be used as a basis for inference and interpretation, for explanation and prediction" (Cohen, Manion, and Morrison 2003, 44). Research methodology comprises of the sequence of activities the researcher used for achieving the objectives of the study (Eguzoikpe 2003, 2). This chapter described the various types of approaches that were used in gathering and interpreting data which consist of the research design, accessible population, the sample size and sample procedure, methods of collecting data, ethical considerations, description of research instruments and data analysis.

Research Design

The correlation research design is a type of research design that determines the degree of direction, association and relationship that exists between two or more variables and it comprises of three main types which are the natural observation, survey research and archival research (Alston 2017, 13). This study used the survey correlational research because it mainly describes the degree of relationship that exists between either two or more variables which is achievable by the use of Pearson (r) correlation method or Spearman (rho) correlation method. The hypothesis of the study was statistical tested with the use of the spearman's correlation because it is a non-

parametric measure that indicates the strength of relationship that exists between two or more variables that are measured on at-least one ordinal scale. (Gay, Mills and Airasian 2006, 191-207). The variables of this research study were correlated using Spearman's correlation because they were measured on an ordinal scale and had monotonic relationships (the independent variable increases as the dependent variable decreases) this was achievable using SPSS 22. The descriptive survey research design was applied for the purpose of describing, explaining and exploring data, which was achievable by collecting data from the sample population and describing it in frequencies and percentages which enabled the researcher to answer the research questions of the study. (Awotunde and Ugodulunwa 2004, 26–27).

Accessible Population

There are 63 study centers of NOUN that are spread across the country of Nigeria and all the study centers are controlled by a study center manager (Adewale, Ajadi, and Inegbedion 2011, 640). The Accessible population can be described as the target population in which the researcher acquired data from (Porter 1999, 6). The accessible population for this study comprised of all the final year students in the JSC of NOUN and the final year students in the university are likely to have more experience with the use of digital technology because they had studied with digital technology for quite a number of years (Hansen 2000, 24).

The researcher was able to distribute the research instruments to the final year students who came to submit their research projects in preparation for their graduation ceremony with the help of Mr. Choji Dafom who was in charge of collecting the final year students project (Remler and Van Ryzin 2011, 157). The researcher had access to the final year students in the JSC of NOUN during the period of their clearance from December 2016-January2017 in preparation for their 6th convocation in mid-January

2017, the total number of final year students from the NOUN centers spread across the country that was set to graduate in mid-January 2017 were 5,975 students.

Sample Size and Procedure

Sample size can be described as a mechanism that is used in choosing a proportion or representation of the whole population (Eguzoikpe 2003, 77). Non-Probability sampling means "the researcher targeted a particular group in full knowledge that it does not represent the wider population but it only represents itself" (Cohen, Manion, and Morrison 2003, 102). In this case, all the study centers of NOUN spread across the country did not have an equal chance of being selected because the researcher intentionally chose the JSC of NOUN due to its accessibility to the researcher and for resource constraints reasons. Therefore, the researcher did not generalize the findings of this research study to all the study centers of NOUN (Awotunde and Ugodulunwa 2004, 100). Convenience sampling was used by the researcher to select a sample consisting of only those sampling units which are conveniently available (Awotunde and Ugodulunwa 2004, 100). The total number of questionnaires that was administered to the final year students who came to school for the submission of their research projects were 50 because that was the sample size the researcher conveniently chose to represent the total population of final students in the JSC of NOUN (Gall, Gall, and Borg 2003, 171). The Final year students were chosen because they may have more experience with the use of digital technology for their teaching-learning process longer than those who were still undergoing their various programs in the school, this enabled the researcher to give every final year student an equal chance of filling the questionnaires.

Methods of Collecting Data

The quantitative approach for collecting data was used to collect data from the sample of this study (Creswell and Plano Clark 2011, 54). The reason why a quantitative method was used is because it helped the researcher to answer the research questions of the study and it also provided numerical data that was analyzed using mathematically-based methods for the purpose of explaining the phenomena of this study (Sukamolson 2010, 2). The quantitative data was collected with the use of closed and open-ended questionnaire. The closes-ended questions were used to confine the responses of the respondents to the questions of this study while the open-ended questions were used to enable the respondents to spontaneously give information in regards to the questions of this study, this is set to also reduce the biases that may be generated from the closed-ended questions (Reja et al. 2003, 161). The questionnaire refers to some set of questions that are related to the objectives of the study, whereby respondents are required to give answers to the questions as it applies to them (Ugodulunwa 2008, 105). The researcher received permission from the director of the school to enable the researcher gain access into the school to distribute the questionnaire to every final year student who came to school to submit their research project (Best and Kahn 1989, 192–93). The questionnaire was distributed to 50 final year students in the Jos study center of NOUN, the total number of research instruments that was distributed is 50.

Description of Research Instruments

The instrument for this study was created for the purpose of answering the research questions of the study. The quantitative instrument that was used for the study is the questionnaire schedule, which was made in both an open-ended structure and closed-ended (Likert scale manner). The Likert scale had five response items for

each question and they were; strongly agree, agreed, Undecided, strongly disagreed, and disagreed but were collapsed into agreed, undecided and disagreed. The questionnaire was administered only to the sample group (Remler and Van Ryzin 2011, 221). The questions in section b, c and d in the questionnaire were used to answer the three research questions of this study.

Validation and Reliability of Research Instruments

The validity of research instrument is the extent to which the test scores achieved the purpose of the study while the reliability of the research instrument is the consistency of the findings discovered from a test score that is related to another same test score findings (Engelhart 1972, 151–52). The validity of this research instrument grounded on the literature review of this study where scholarly information provided a basic grasp on how the researcher could ask questions that were relevant and capable of providing answers to the questions of this study. A pilot test involves the use of a small portion of the population to test the instruments of the study by responding to the questionnaire and the interview schedule (Gall, Gall, and Borg 2003, 50). The researcher further tested the validity of the research instrument by conducting a pilot test with 5 participants for this study and the instruments were found to be valid for the study because it was able to measure what it was intended to measure. The research instrument was subjected to the opinion of research experts who supervised this research work and other education colleagues who were skilled in research writings, they provided critiques and suggestions that enabled the researcher to improve the research instrument for this study.

Ethical Considerations

Ethical issues may arise from the "nature of the research project itself, the context for the research, the procedures to be adopted, methods of data collection, the nature of the participants, the type of data collected, and what is to be done with the data" (Cohen, Manion, and Morrison 2003, 49). Ethical considerations are meant to help researchers take in to account the possible ways in which respondents are likely to feel about the outcome of a research study. Therefore, the researcher requested for permission from the director of the JSC of NOUN before distributing the questionnaires to the students and to also assure the director that the study will not bring harm to the reputation of the school or to the students. The questionnaires was designed to include the purpose of the research study to enable the respondents understand what the questionnaires are meant for and the researcher also assured the respondents of the confidentiality of their responses by not requesting for their identities such as their names and student numbers. The letter of consent for receiving data from the school is attached in Appendix B of this study.

Data Analysis

Quantitative analysis comprises of the use of statistical tests to give meaning to the data collected from the field of study (Eguzoikpe 2003, 75). The researcher collected raw data from the field of study through the means of assigning numeric values to each of the responses that were answered by the respondents which enabled the researcher to compute the data with the use of the Statistical Package of Social Sciences (SPSS) (Creswell and Plano Clark 2011, 204). The SPSS is the most widely used and best form of statistics package which was used to make analysis for this study (Muijs 2011, 79). The research instrument of this study comprised of five Likert-scale of strongly agree, agreed, undecided, strongly disagreed and disagreed

but they were all collapsed into agreed, undecided and disagreed to provide a more precise analysis of the data for the purpose of answering the research questions of this study. The data gathered from the field was analyzed with the use of descriptive statistics, this was described in tables to indicate their frequencies and percentages because it enabled the researcher to analyze the data collected from the field of study in small indices of number for the purpose of providing answers to the research questions of this study (Gay, Mills and Airasian 2006, 304).

Once hypothesis have been outlined, it is important to test those hypothesis (Kreinovich and Servin 2015, 94). The three hypotheses for this study were tested with the use of spearman's rank correlation at 0.05 significance level using SPSS 22. When Spearman's calculated value (r) is higher than the tested significance level critical value (p), it means that there is a relationship between the variables hence an alternative hypotheses will be accepted but when the tested significance level critical value (p) is higher than spearman's calculated value (r), it means that there is no relationship between the variables hence, the null hypotheses will be rejected (Muijs 2011, 135). The Section B, C and D in the research questionnaire of this study indicated the questions for the dependent variables of this research study and each of the section comprised of three to four questions that were computed together with the use of SPSS 22 and question A2 and A3 are the questions for the independent variables of this study which were also computed together with SPSS 22. The analyzed data was successfully done with the use of SPSS 22 to present the findings and draw conclusions about the research questions and hypotheses of this study. The guideline which was used in interpreting the spearman correlation coefficient is tabulated below:

Table 3.1: Interpretation of spearman's rank correlation

Value of Rho	Interpretation
0.80 to 1.00	Very high
0.60 to 0.80	High
0.40 to 0.60	Medium
0.20 to 0.40	Low
0.0 to 0.20	Very low

Source; (Ugodulunwa 2008, 225).

CHAPTER FOUR

DATA COLLECTION, ANALYSIS AND INTERPRETATION

Introduction

This chapter comprises of the data collection, analysis and interpretation of the research findings. It provides explanations about the analyzed data for the purpose of providing answers to the research questions and hypotheses of this study.

Return of Questionnaires

The total number of research questionnaires that were distributed in the field were 50 in number. The 50 questionnaires were distributed with the use of the convenience sampling method whereby the final year students of the JSC of NOUN who came to submit their research projects were requested to fill a copy of the questionnaire. The returned questionnaires were 50 which means that the researcher received 100% return of the distributed questionnaire. The table below indicates the return of the distributed questionnaires.

Table 4.1: Returned Questionnaires

Total number of the sample population	Number of distributed questionnaires	Number of returned questionnaires	Percentage of returned questionnaires
50	50	50	100%

Analysis and Interpretation of Research Questions

The research questions of this study were analyzed using the descriptive statistics method for the purpose of describing the quantitative measures that were acquired from the respondents of this study. They were presented in form of tables for the purpose of describing the analyzed data in frequencies and percentages. Below are the research questions that were answered;

RQ1: What is the effect of digital technology on students' social behavior?

RQ2: How does digital technology affect students' academic behavior?

RQ3: What health behaviors do students develop as a result of the use of digital technology?

Background Information of Respondents

The table below are the responses of the respondents in regards to their gender.

Table 4.2: Gender of Respondents

Gender	Frequency	Percentage (%)
Male	27	54%
Female	23	46%
Total	**50**	**100%**

The data above indicates that the total number of the male respondents were 27 (54%) while the total number of the female respondents were 23 (46%), which means that the responses of the male respondents is 8% higher than that of their female counterparts.

Students' Usage of Digital Gadgets for Learning Process

The table below is an analyzed data of the final year students of NOUN responses on their usage of digital gadgets for learning process.

Table 4.3: Students' Use of Digital Gadgets

Responses	Uses digital gadgets for studying
Yes	37 (74%)
No	13 (26%)
Total	**50 (100%)**

The table above reveals that 37 (74%) respondents have used digital gadgets for studying while 13 (26%) respondents have not used digital gadgets for studying. The above analysis led the researcher to say that majority of the final year students of NOUN have used digital gadgets for their learning process which means that the use of digital gadgets for learning process may affect the behavior of students.

RQ1: What is the effect of digital technology on student's social behavior?

This section comprises of the answer to the research question above which was analyzed based on the responses received from the section B aspect of the research instrument for this study. Below was the analyzed data in frequencies and percentages.

Table 4.4: Digital Technology and Students' Social Behavior

Responses	Social Behavior			
	Friends	**Family Members**	**Course-mates**	**Total number of responses**
Agreed	32 (64%)	13 (26%)	16 (32%)	61
Undecided	5 (10%)	7 (14%)	5 (10%)	17
Disagreed	13 (26%)	30 (60%)	29 (58%)	72
Total	50 (100%)	50 (100%)	50 (100%)	150
Open ended responses on Students Social Behavior				
Total Number of administered questionnaire	**Number of responses; effects of digital technology on social behavior**	**Total number of responses**	**Percentage of responses**	
50	- 9 responses; Creates a lesser opportunity for students to relate with the people around them. - 4 responses; it diverts the attention of students to the social media.	13	26%	

From table 4.4 above there are three key effects (friends, family members and course mates) that were investigated to find out if the social behavior of students were affected due to their use of digital technology for learning processes. In response to those effects, 32 (64%) respondents agreed that the use of digital technology affected their social behavior towards their friends and 4 (8%) were undecided on if the use of digital technology affected their relationship with their friends while 14 (28%) respondents disagreed that the use of digital technology has affected their relationship with their friends. In regards to if the use of digital technology affects students relationship with their family members, 14 (28%) respondents agreed, 7 (14%) were

undecided while 29 (58%) respondents disagreed. Furthermore, 17 (34%) respondents

agreed that use of digital technology affected how they relate with their course mates,

5 (10%) respondents were undecided if the use of digital technology affected their

relationships with their course mates while 28 (56%) respondents disagreed on if the

use of digital technology affected how they relate with their course mates. The open-

ended questions for section B received 13(26%) responses and they indicated that the

social behavior of students is affected when they continued to use digital technology

for their learning processes because the use of digital technology for learning

processes tend to consume students' time and diverts their attention from relating with

the people around them.

RQ2: How does digital technology affect students' academic behavior?

The research question two above was answered by the use of the sample data

collected from the field of study through the use of section c in the research

questionnaire. Below is the analyzed data.

Table 4.5: Digital Technology and Students' Academic Behavior

Responses	Academic Behavior				
	Increases the desire for learning	**Acquires knowledge**	**Depends on technology for knowledge**	**Passive towards their studies**	**Total number of Responses**
Agreed	45 (90%)	42 (84%)	29 (58%)	27 (54%)	143
Undecided	2 (4%)	2 (4%)	3 (6%)	2 (4%)	9
Disagreed	3 (6%)	6 (12%)	18 (36%)	21 (42%)	48
Total	50 (100%)	50 (100%)	50 (100%)	50 (100%)	200
Open ended responses on Students Academic Behavior.					
Number of adminstered questionnaire	50				

Total number of responses	27
Percentage of responses	54%
Number of responses; effects of digital technology on academic achievement behavior	- 3 responses; digital technology is limited to power supply which decreases academic behavior. - 8 responses; it limits the thinking ability of the students by making students over dependant on it. - 2 responses; students who do not have funds to purchase a digital gadgets are not motivated to learn. - 10 responses; digital technology provides diverse information in the twinkle of an eye which increases the depth of knowledge. - 4 responses; poor network availability and corrupt documents from the internet discourages students from using digital technology for learning purposes.

The table 4.5 above is the responses of the respondents to research question two where there are four key effects that describes how digital technology may have affected the academic behavior of students. In response to the question, 45 (90%) respondents agreed that use of digital technology increased their desire for learning which in turn boosted their academic behavior and 2 (4%) respondents where undecided about how digital technology affected their academic behavior while 3 (6%) respondents disagreed that the use of digital technology affected their academic behavior. Moreso, 42 (84%) respondents agreed that the use of digital technology affected their academic behavior by enabling them to acquire knowledge, 2 (4%) respondents were undecided on how the use of digital technology has affected their academic behavior and 6 (12%) respondents disagreed that the use of digital technology affected their academic behavior. Furthermore, 29 (58%) respondents

agreed that the use of digital technology affetced their academic behavior because it made them depend on it for knowledge while 3 (6%) respondents were undecided about depending on digital technology for knowledge, 18 (36%) respondents disagreed on depending on digital technology for knowlegde.

Finally, 27 (54%) respondents agreed that the use of digital technology affected their academic behavior because it made them passive towards learning, 2 (4%) respondents were undecided about if the use of digital technology made them passive towards their studies and 21 (42%) respondents disagreed that the use of digital technology made them passive towards their studies. In response to the open-ended question, only 27 (54%) respondents indicated how the use of digital technology affected their academic behavior.

RQ3: What health behavior do students develop as a result of the use of digital technology?

This research question three was analyzed based on the responses of the respondents to section d in the research instrument. Below is the analyzed data;

Table 4.6: Digital Technology and Students' Health Behavior

Responses	Health Behavior				
	Excessive dependence on digital technology	**Health challenges**	**Health issues that affects studies**	**Addicted to the use of digital technology**	**Total number of responses**
Agreed	13(26%)	15 (32%)	16 (32%)	16 (34%)	60
Undecided	3(6%)	2 (4%)	2 (2%)	2 (4%)	9
Disagreed	34 (68%)	33 (64%)	32 (66%)	32 (62%)	131
Total	50 (100%)	50 (100%)	50 (100%)	50 (100%)	**200**
Open ended responses on Students Health Behavior.					
Number of administered questionnaire	50				

Total number of responses	17
Percentage of responses	34%
Number of responses; effects of digital technology on academic achievement behavior	- 1 response; Poor feeding habits. - 11 responses; eye straining which causes frequent headaches. - 3 responses; the rays of light from the gadgets cause eye diseases. - 2 responses; pains on the shoulders and neck.

The analysis of research question three is presented in table 4.6 above and it is evident from the responses that 14 (28%) respondents agreed that they could not study without the use of digital technology because they had developed excessive dependence on using it for study while 3 (6%) respondents were undecided about if they are over-dependent on using digital technology for studying, 33 (66%) respondents disagreed because they felt they had not become over-dependent on the use of digital technology for studies.

Information investigated also included the case of if students' develop some health challenges due to the use of digital technology. In response to this, 16 (32%) respondents agreed, 2 (4%) were undecided while 32 (64%) disagreed that they had developed some health challenges due to the use of digital technology. Furthermore, 16 (32%) respondents agreed that the use of digital technology has caused them some health challenges that had affected their academics, 1 (2%) respondent was undecided on if the use of digital technology had created some health challenges that affected their academics while 33 (66%) respondents disagreed that the use of digital technology has caused them some health challenges that affected their academics. Finally, when the respondents were asked if they had developed addictive health problems due to the use of digital technology, 17(34%) respondents agreed, 2(4%)

respondents were undecided and 31(62%) respondents disagreed that they had developed addictive health problems due to the use of digital technology.

However, the open-ended items gave an opportunity for all the respondents to indicate other health challenge behaviors that they may have developed as a result of the use of digital technology, but only 17(34%) respondents noted some of the health challenge behaviors that they had encountered. Many of the respondents stated that they were experiencing diminishing eye sight due to the rays of light coming from their digital gadgets, frequent headaches, poor feeding habits, and pains on the shoulders and neck.

Research Hypotheses Testing and Interpretation

This aspect focused on testing the hypotheses for this study, this was done with the use of SPSS 22 and the non-parametric measure that was used to test the hypotheses is the Spearman's (rho) correlation at 0.05 significance level ($p < .05$). The analyzed table results for each of the tested hypotheses was presented in a tabular form. All the hypotheses for this study were stated in chapter one as follows;

- Digital Technology has no relationship with students' academic behavior.

- The use of digital technology has no relationship with students' social life.

- The use of digital technology has no relationship with students' health.

H_o1: Digital Technology has no relationship with students' academic behavior

Hypotheses one was statistically tested with the use of SPSS 22 to determine the relationship between students use of digital technology and their academic behavior, this was done by coding the responses of section c and analyzing the data using the Spearman's (rho) correlation. Below are the tabulated results of the findings;

Table 4.7: Relationship between Students' use of Digital Technology and their Academic Behavior

Variables	Spearman's rho	Independent (digital technology)	Dependent (academic behavior)
Digital technology	Correlation Coefficient	1	.115*
	Sig. (2-tailed)	.	.427
	N	50	50
Academic Behavior	Correlation Coefficient	.115*	1
	Sig. (2-tailed)	.427	.
	N	50	50

N = 50; Level of significance = 0.05; critical value (p) = 0.427 and rho = 0.115

According to the table 4.7 the Spearman's rank order correlational statistical test was conducted with SPSS 22 to determine the relationship between students' use of digital technology and their academic achievement. The output of the data were presented in a symmetrical table, the number of samples (N) is 50 and there were no missing values hence, the Spearman rank order correlation coefficient (rho) is 0.115* and the asterisk sign above the rho value indicates that the data was tested at 0.05 significance level. This means that there was no correlation between students' academic behavior and their use of digital technology, the outcome of the two tailed test which was tested at 0.05 significance level is 0.427. The spearman's correlational coefficient rho which was 0.115 is lower than the p value (0.427). The null hypotheses was accepted because there is no significant relationship between student's use of digital technology and their academic behavior. This is so because the rho value was lesser than the critical value (p), this indicates that as students continue to use digital technology for learning processes their academic behavior may not be affected.

H₀2: The use of digital technology has no relationship with students' social life.

The hypotheses two of this research study was tested statistically with the use of SPSS 22 to find out if there is a relationship between students use of digital technology and their social life. Section b in the research instrument was coded and analyzed with SPSS 22, below are the findings;

Table 4.8: Relationship between students' use of digital technology and their social life.

Variables	Spearman's rho	Independent (digital technology)	Dependent (social life)
Digital technology	Correlation Coefficient	1	.097*
	Sig. (2-tailed)	.	.503
	N	50	50
Social life	Correlation Coefficient	.097*	1
	Sig. (2-tailed)	.503	.
	N	50	50

N = 50; Level of significance = 0.05; critical value (p) = 0.503 and rho = 0.097

The analysis of the relationship between students' use of digital technology and their social life are presented in the table 4.8 above. The total number of respondents (N) is 50 which means that there were no missing values and the spearman's (rho) is at 0.097, the asterisk sign above the rho value*indicates that it was statistically tested at 0.05 significance level on a two-tailed test which produced a critical value (p) of 0.503. This means that there is no relationship between student's use of digital technology and their social life. Therefore, the null hypotheses two for this research study was accepted because the critical value (p) was greater than the rho value. This means that there is no relationship between student's use of digital technology and their social life. However, according to this test, as students continue to use digital technology for learning, their social life may not be affected.

H₀3: The use of digital technology has no relationship with students' health

The third hypotheses for this research study was also statistically tested using Spearman's rank correlation. The section d responses in the research instrument were coded and analyzed to find out if there is a relationship between students' use of digital technology and their health. Below are the findings of this test;

Table 4.9: Relationship between students use of digital technology and their Health

Variables	Spearman's rho	Independent (Digital technology)	Dependent (Health)
Digital technology	Correlation Coefficient	1	.077*
	Sig. (2-tailed)	.	.597
	N	50	50
Health	Correlation Coefficient	.077*	1
	Sig. (2-tailed)	.597	.
	N	50	50

N = 50; Level of significance = 0.05; critical value (p) = 0.597 and rho = 0.077

In relation to the analysis, the table 4.9 above is a Spearman's correlation statistical test for the hypothesis three of this research study which was successfully done with SPSS 22 to find out the relationship between students' use of digital technology and their health. The total number of respondents (N) is 50 which means that there are no missing values, the calculated Spearman's (rho) correlation coefficient is 0.077* and the asterisk sign above the value indicates that spearman's correlation was conducted at 0.05 significance level The critical value (p) is at 0.597 tested on a two tailed test of 0.05. The test indicates that the critical value (p) is greater than the rho value at 0.077, therefore, the third null hypotheses of this study was accepted. The findings of this statistical test indicates that there is no relationship between students use of digital technology and their health, however, as students

continue to engage with digital technology, their health will not be affected because there is no relationship between the use of digital technology and their health.

Discussion of Findings

In response to RQ1, the findings showed that most of the students disagreed that the use of digital technology affected their social behavior in section B2 and B3 but majority of students (64%) in B1 agreed that the use of digital technology has affected their relationship with their friends. Information in the table indicated that only 13 (26%) students noted that the use of digital technology affected their social behavior because it consumed a lot of their time and their attention is easily diverted from relating with the people around them. The results could imply that the more students continue to use digital technology, the more they are likely not to spend time on socializing with the people around them. Students need skills that are more than just a click on the keystrokes because digital technology makes an impact on the brain and behavior of the students (Richtel 2012, A18). Furthermore, Doug Madden noted that a good online course should be well equipped with just the appropriate amount of course contents for each week (Madden 1999, 1). The probable reason why students' social behavior may be affected by the use of digital technology might be because students are given demanding course content that requires students to dedicate a large amount of their time and attention to the online courses.

The findings of RQ2 on how digital technology affects students' academic behavior, showed that 90% of students agreed that the use of digital technology affects students' academic behavior by increasing the desire of students towards learning, 84% of students agreed that it helps them to acquire knowledge while 58% agreed that it makes students to depend on digital technology and 54% agreed that it enables students to become passive towards their academic achievement.

Furthermore, 27 (54%) students noted how digital technology affects their academic achievement behavior by; limiting the thinking ability of students, making students over dependent on it, providing in-depth educational information which increases the knowledge of students, not motivating students who do not have funds to purchase the digital gadgets and discouraging students from using it for learning because it is limited to power supply. However, motivation is actually a non-cognitive element that correlates with the academic achievement of students which is actually the most pressing need in the 21st century education, this is the reason why the 21st century teachers are highly concerned about seeking skills on how to captivate the attention of their students (Appling 2015, 13). It is worthy to note that if digital technology must be used for the 21st century education, it should be able to affect the academic achievement behavior of students positively.

The findings of RQ3 in regards to the health behavior students' develop as a result of the use of digital technology. About 66% of the respondents disagreed that they develop health behavior due to the use of digital technology although a few respondents did not decide on if they developed health behaviors as a result of the use of digital technology, 34% agreed that they have become addicted to the use of digital technology, 28% agreed that they excessively depend on it, 32% agreed that it caused them health challenges while another 32% agreed that it caused them health challenges that has affected them academically. In the open-ended section, 17(34%) respondents noted some factors about how the use of digital technology has affected their health behavior such as; poor feeding habits as a result of easily getting swayed away from school work, frequent headaches as a result of eye straining on their computer screens, shoulder and neck aches due to their sitting position with their digital gadgets and also eye diseases which are caused by the rays of light in their

computers. For students not to develop poor feeding habits as a result of the use

digital technology for learning, they need to develop the habit of staying hydrated

while they are studying to keep them focused and motivated to study. Recent studies

have shown that people who are always hydrated by taking about eight glasses of

water in a day have the tendencies of behaving in an appropriate manner by being

focused and motivated in their academic studies (Rayment 2006, 76).The findings of

RQ3 from the open ended response indicates that health behaviors are not holistic but

individualistic, and it is also in relation to the study which was conducted by the

Ecological Momentary Interventions (EMI) 2010, in Syracuse University New York.

In critical assessment of the effects of mobile technology on the health behavior of

students, findings from the study indicated that health behaviors are individualistic.

However, the health behaviors students acquire from the use of digital technology

should be controlled or eradicated for the purpose of keeping the students healthy

enough to effectively learn and become efficient for the society.

The findings of H_o1 indicated that the research hypotheses was accepted

because there was no significant relationship between students' use of digital

technology and their academic achievement and the results further indicated that the

relationship between students' use of digital technology and their social behavior is

very low because the rho value was at 0.115. However, students' academic behavior

is not dependent on their use of digital technology because the critical (p) value

(0.427) is greater than the rho value, this means that there was no significant

relationship between students' academic behavior and their use of digital technology.

In regards to the findings of H_o2, results indicated that there was no significant

relationship between student's use of digital technology and their social life because

rho value is at 0.097. Students' social life is not dependent on their use of digital

technology because the critical value (p) 0.503 is greater than the rho value 0.097

which led to the acceptance of the second hypothese. Therefore, students should

maximize their time effectively to enable them know how much amount of time they

are to spend using digital technology. The H_o3 was also accepted because the results

of the study showed that there was no significant relationship between student's use

of digital technology and their health. The correlation that exist between students

health behavior and their use of digital technology is very low (weak) because the rho

value was at 0.077. The critical (p) value 0.597 was greater than the rho value at

0.077. Students' can use digital technology for learning purposes and their health may

not be affected except they over use or misuse digital technology.

Summary

This chapter presented the analyzed data of this study and the findings were

thoroughly discussed to display the outcome of the investigated research questions

and hypotheses of the study which was successfully done with SPSS 22 to present the

results in frequencies, percentages and spearman's correlation statistical test. The next

chapter shall include the summary of the findings, conclusions and recommendations.

CHAPTER FIVE

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

Introduction

This chapter comprises of the summary of the findings, conclusions from the analyzed data and recommendations of the researcher in regards to this study. The researcher investigated how students' use of digital technology affects their social, health and academic behavior of students in the Jos study center of NOUN.

Research Problem

The researcher discovered that the use of digital technology was increasing rapidly in schools today. The National Open University of Nigeria (NOUN) uses digital technology for every aspect of their teaching-learning process including their examinations. This study focused on investigating how the use of digital technologies may have effects on the social, health and academic behavior of students. The objective of this study was to explore the effects of digital technology on the social behavior of students, to explain the effects of digital technology on the academic behavior of students and to explain how digital technology affects the health of students.

Research Purpose

The purpose of this research study was to investigate how the use of digital technology affects the learning behavior of students in the Jos Study Center of the National Open University of Nigeria. In conducting this inquiry, the researcher

focused on investigating three learning behaviors which are; social behavior, academic behavior and health behavior. This was possible with the use of quantitative research method to collect data using questionnaire for the purpose of investigating the guided research questions and hypothesis of the study.

Research Design

This research study used the convenience sampling method to acquire data from 50 final year students in the JSC of NOUN. The survey correlational research design was used to describe and analyzed the data collected from the field of study using frequencies and percentages to present answers for the research questions and the spearman's correlation statistical test for answering the research hypothesis of the study.

Research Questions

The following research questions guided the study:

1. What is the effect of digital technology on students' social behavior?

2. How does digital technology affect students' academic behavior?

3. What health behavior do students develop as a result of the use of digital technology?

Research Hypotheses

The research study tested three hypotheses which are:

1. Digital technology has no relationship with students' academic behavior.

2. The use of digital technology has no relationship with students' social life.

3. The use of digital technology has no relationship with students' health.

Summary of Research Findings

The Research findings for this study are summarized accordingly in this section. The findings include both the research questions and the research hypotheses.

HQ1.What is the effect of digital technology on student's social behavior?

The research question one results indicated that the use of digital technology does not affect student's social behavior although not all students agreed that the use of digital technology did not affect their social behavior. About 32% of students agreed that the use of digital technology affects their socializing behavior with their friends, 58% disagreed that the use of digital technology affects their socializing with their family members and 56% disagreed that the use of digital technology affects their socializing behavior with their friends. From the results it is evident that most of the respondents believed that the use of digital technology does not affect their social behavior.

HQ2.How does digital technology affect student's academic behavior?

This research question two was analyzed with the data collected from the sample population and the results of the analyzed data indicated that majority of the students agreed that the use of digital technology affected their academic behavior, this is evident from the results that 90% respondents agreed that it increases their desire for learning, 84% respondents agreed that it helps them to acquire knowledge on diverse level which will motivate learning, 58% respondents agreed that it makes them depend on digital technology for knowledge.

Although a few respondents 54% noted that it discourages and makes them lazy to learn because it is limited to network connections and availability of electricity. This means that the use of digital technology for learning, affects the academic achievement behavior of students.

HQ3.What health behaviors do students develop as a result of the use of digital technology?

The findings of research question three is based on the analyzed data for this study. The analyzed data indicated that the use of digital technology does not affect students' health behavior which means that students may not develop health behavior as they use digital technology for teaching-learning process because 66% of the respondents disagreed that they excessively depend on digital technology and 64% of the respondents disagreed that they had developed health challenges due to the use of digital technology, 66% of the respondents also disagreed that they had developed health challenges that is affecting their studies while 62% of the respondents disagreed that they have become addicted to the use of digital technology.

Although 34% of the respondents noted some change in health behavior they had developed due to the use of digital technology such as; shoulder and neck pain, eye defects, poor feeding habits, insomnia and addiction to learning only through the use of digital technology which makes hard copy educational resources difficult to read. Hence, the findings of the study indicates that the use of digital technology for learning can affect students' health behavior.

H$_o$1: Digital technology has no relationship with students' academic achievement

Hypothesis one indicated that there was no relationship between student's use of digital technology and their academic because the results indicated that the critical value =0.427 is greater than the rho value 0.115, which means that the hypothesis was accepted. As students use digital technology for learning, their academic achievement will not be affected.

H$_o$2: The use of digital technology has no relationship with students' social life

Hypothesis two findings noted that there was no relationship with student's use of digital technology for learning and their social life because the findings from the statistical test for hypotheses two indicated that the critical value (p) =0.503 was greater than the rho value of 0.097. Hence, the hypotheses was accepted, students' use of digital technology for learning will not affect their social life.

H$_o$3: The use of digital technology has no relationship with students' health

Hypothesis three indicated that there was no relationship with student's use of digital technology and their health, which means that as students use digital technology for learning, their health will not be affected. This decision was evident in the results of the statistical test where the critical value (p) =0.597 was greater than the rho value at 0.077 which set a stage for accepting the hypotheses.

Conclusion

The major goal of today's teachings and administrative approaches is to ensure that the various population of students are brought to a greater level of academic achievement that cannot be compared with the past achievements (Kinsler and Gamble 2001, 304). The education of today requires people to be equipped with various technology tools of learning in order to be able to effectively use technology knowledge to provide solutions in the various sectors of our world be it an organization, government agency or cooperative sectors (Mwenda and Muuka 2009, 236).

The purpose of doing this study was to investigate the effects of digital technology on the learning behavior of students in the Jos Study Center of NOUN. The study aimed at investigating three learning behaviors which are social, health and academic. The striking thing about this research study is that digital technology

increases the desire of students to learn and they are motivated by it to study more. What can be more appealing for educational practitioners than to hear that the use of digital technology makes students want to learn more? Perhaps this is the most satisfying aspect of using digital technology for teaching-learning process because the aim of using digital technology is to make learning productive. Therefore, educational practitioners should continue to use digital technologies for learning process because it motivates students to learn (Jonassen, et al 2008, 5-10).

The Health Belief Model by Hochbaum Rosenstock (1950) which was stated in the chapter two of this paper is reflected in the findings of this study because some students perceived the benefits of using digital technology and reported they are using it for studies without realizing that they could be at risk of acquiring some pressing health outcomes. It does not mean that because most of the students do not agree that the use of digital technology affects their health behavior then the few who are already having problems with it will not be considered and provided help. Regular use of digital technology may actually be responsible for a couple of health behaviors that students are likely to develop as they use it for learning frequently. Although learning is a continuous process students should not be compelled to read only online resources for their school work because it will make them strain their eyes on a daily bases on their computers, at least hard copy materials should also be used frequently to help students who are already developing health problems to have some relieve.

It makes sense that the use of digital technology for learning does not affect their social behavior because students can socialize with their course mates through emails, text messages except for a few cases whereby the students noted that the use of digital technology does not permit them to have time to socialize with their course mates, friends and family. However, it is important for students to communicate with

their course mates because it will help them to learn from one another; education is not only formal but informal and non-formal (Ives 2012, 47). This is also indicated in the social cognitive theory of Albert Bandura (1977) explained in the chapter two of this study where it was noted that digital technology can affect how students will socialize with the people around them.

Recommendations

The trans-theoretical model postulated by James Prochaska and Carlo Di-Clemete (1982) which was explained in the chapter two of this study should be adapted by educational practitioners to help them improvise on how to change the negative learning behavior some students may have acquired from the use of digital technology such as poor feeding habit, addiction, shoulders and neck aches.

The study recommends that the Federal Ministry of Education in Nigeria should conduct workshops for all teachers on online education to enable the teachers have a good basic understanding of what online education entails. This will help the teachers to first understand what online education should exhibit and what it should discard, the workshop should also expose the benefits of the use of digital technology for the growth of online education in the country. The workshop should be conducted for all kinds of teachers for the purpose of reaching out to teachers in both urban and rural areas. The focal point of the workshop should be about educating teachers about the use of digital technology for learning purposes and how to manage students who encounter challenges with the frequent use of digital technology. The federal government can further invite experts from other countries who are skilled in areas of online education to come over for the workshop for the purpose of training the teachers on how to use it effectively.

The researcher recommends that NOUN should seek to make their digital technology education more productive by creating it in such a way that all the educational needs of the learners can be met. The transformational theory by Jack Mezirow 1981 was explained in the chapter two of this study for the purpose of educating educational practitioners on how to investigate more about the perception and feelings of their students towards the use of digital technology to help them use digital technologies to provide a significant impact and paradigm shifts that will affect the learning behavior of students positively. Students also need to have time to relate with the people around them and so the course outlines should integrate formal, informal and non-formal ways of education into the online education programs to provide for the needs of the learners. For example, uploading activities that will enable students to discuss weekly topics online, giving students assignments that will require them to acquire information from the field. The school should ensure that students are not given more than they can assimilate per semester to prevent students from stressing their shoulders, necks and eyes. The federal government should donate digital devices to students who may not be able to buy a personal copy for their studies.

Both Christian and non-Christian institutions of higher learning should use the findings of this study to control the social, health and academic behavior of their students as they continue to use digital technologies for learning purposes. This will enable them to mold the character and behavior of their students for the purpose of developing leaders who will bring improvement into the various organizations in the world.

Areas for Further Studies

This research study was only conducted from one center which is the Jos study center of NOUN and the researcher recommends that further studies should be conducted from other centers across the country. This will provide more information on the facts about the use of digital technology for the teaching-learning process on the behavior of students.

This study only considered three learning behavior factors, but further studies can be conducted on more behaviors that students are likely to exhibit as a result of the use of digital technology. Further studies can be conducted on those factors that have motivated students to want to learn more when they use digital technology for learning process. The study used only the quantitative research method, a further study can be conducted using the qualitative research method.

Further studies can be conducted to investigate on how higher institutions have devised means of controlling the learning behavior of students as they use digital technology for teaching-learning processes.

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APPENDIX A

QUESTIONNAIRE

My name is Miss Ann Gabriel a Masters of Education student specializing in Leadership and Administration at Africa International University, Karen, Kenya. I am currently working on my Research thesis which is titled: Effects of Digital Technology on student's behavior in selected universities of Nairobi, Kenya. This study aims at answering three questions which are:

- What are the effects of the use of digital technology on the social behavior of students?

- What are the effects of digital technology on the academic behavior of students?

- What are the health challenges that the use of digital technology has caused on the behavior of students?

I solicit for your support in answering the required questions in this document to enable me acquire information for my research questions. I assure you that your responses will be highly appreciated and kept confidential. This document requires only 5 minutes of your time to read and respond to its questions. You are required to answer every question by selecting the most appropriate suggested answer to each question.

Please tick into the bracket ( ) that which is relevant to you.

Section A. Background Information.

1. Gender

   Male ( ) Female ( )

2. I have been using digital gadgets such as laptops, phones and computers for studying

    Yes ( ) No ( )

Section B. Effects of digital technology on Students' Social behavior.

1. The use of digital technology in learning has affected my relationship with my friends.

    Strongly agreed ( ) agreed ( ) strongly disagreed ( ) disagreed ( ) undecided ( )

2. I don't usually have time to spend with my family members because the use of digital technology for teaching-learning process consumes most of my time.

    Strongly agreed ( ) agreed ( ) strongly disagreed ( ) disagreed ( ) undecided ( )

3. The use of digital technology does not permit me to relate with my course mates.

    Strongly agreed ( ) agreed ( ) strongly disagreed ( ) disagreed ( ) undecided ( )

What social problems are you encountering as a result of the use of digital technology

for learning?---

Section C. Effects of digital technology on students' academic behavior.

1. The use of digital technology increases my desire for learning.

    Strongly agreed ( ) agreed ( ) strongly disagreed ( ) disagreed ( ) undecided ( )

2. Digital technology has helped me to acquire knowledge.

    Strongly agreed ( ) agreed ( ) strongly disagreed ( ) disagreed ( ) undecided ( )

3. I depend on digital technology for learning

    Strongly agreed ( ) agreed ( ) strongly disagreed ( ) disagreed ( ) undecided ( )

4. Digital technology has made me passive towards my studies

Strongly agreed ( ) agreed ( ) strongly disagreed ( ) disagreed ( ) undecided ( )

What are some of the achievement problems you are encountering as a result of the use of digital technology?---

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Section D. Effects of digital technology on student's health behavior.

1. I cannot study without digital technology.

Strongly agreed ( ) agreed ( ) strongly disagreed ( ) disagreed ( ) undecided ( )

2. I have developed some health challenges due to the use of digital technology.

Strongly agreed ( ) agreed ( ) strongly disagreed ( ) disagreed ( ) undecided ( )

3. I have become addicted to the use of digital technology in learning

Strongly agreed ( ) agreed ( ) strongly disagreed ( ) disagreed ( ) undecided ( )

4. I have encountered some health challenges that has affected me academically due to the use of digital technology.

Strongly agreed ( ) agreed ( ) strongly disagreed ( ) disagreed ( ) undecided ( )

What are some of the health problems you may have encountered due to the use of digital technology? ---

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Thank you for your cooperation in completing this questionnaire.

LETTER OF CONSENT

Africa International University,

Karen, Nairobi, Kenya,

P.O. box 24686 00502,

20th-12-16.

The Director of,

National Open University of Nigeria,

Jos Study Center.

Dear Sir,

A REQUEST FOR THE COLLECTON OF RESEARCH DATA FROM STUDENTS

Greetings to you, my name is Miss Ann Gabriel am studying Masters in Education (Leadership and Administration) at Africa International University Nairobi, Kenya. The topic for the current research thesis that am doing is on **the effects of digital technology on students learning behavior**. My study will be useful to the institution and to all other open universities in Nigeria because it will expose how the use of digital technology may affect the learning behavior of students either positively or negatively which in-turn will enable the study centers to device means in which they can keep on improving the standards of their education for the benefit of achieving their set of goals.

I will gladly appreciate if am given the opportunity to collect my research data from the final year students of the Jos-study center. You will not regret giving me this opportunity.

Thank you.

Yours faithfully,

Ann Gabriel.