UNIVERSITY OF NAIROBI

SCHOOL OF COMPUTING AND INFORMATICS

EVALUATING TEACHERS' ADOPTION OF DIGITAL LEARNING IN PUBLIC PRIMARY SCHOOLS: A CASE STUDY OF UASIN-GISHU COUNTY SCHOOLS

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DECLARATION

This Research Project is my original work and has not been presented in any other University or institution for academic credit.

Signature…… Date……..

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P54/6312/2017

This research project report has been submitted for examination with my approval as a university supervisor.

Signature…… Date……..

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DEDICATION

This research is dedicated to my parents Mr. Joshua Kosgei and Mrs. Margaret Kosgei, to my Spouse Mr. Robin Kirui, and my entire family for their unwavering support and encouragement during the entire period of my study.

ACKNOWLEDGMENT

I wish to express my heartfelt gratitude to the Almighty God for bringing me this far. Indeed He has been faithful. I would like to thank my supervisor Prof. Timothy Waema who mentored me, guided me and provided meaningful insight towards the project. I am also grateful to my classmates, friends, and colleagues for their encouragement, contribution, and advice.

God bless you all.

ABSTRACT

In the recent past, ICT has been integrated into primary school curricula in many developing countries around the globe. Kenya is among the countries that have introduced the use of ICT. Support and funding from the government have led to an increased availability of ICT resources. However, the teachers do not make effective them. Adoption in schools has been slow and problematic. This research evaluated the teachers' adoption of Digital Learning in Public Primary schools in Uasin Gishu County. The researcher adopted the Unified Theory of Acceptance and Use of Technology (UTAUT) to evaluate whether its variables influence teachers' Behavioral Intention and adoption of digital learning. She also evaluated whether computer experience, gender, age, and voluntariness of use moderate the four direct determinants. A blended strategy of qualitative and quantitative questions was used to gather information. The population of interest consisted of 280 teachers. An appropriate sample size of 165 teachers was achieved using Slovin's formula with a margin error of 5%. Simple random sampling was used to select the schools that participated. The study findings indicate that Positive performance expectancy, effort expectancy, social influence from significant others and favorable facilitation conditions positively influence the teachers' behavioral intention. Performance expectancy and Effort expectancy were the only significant determinants. Behavioral intention positively influenced use behavior, but other factors challenges such as insufficient time, lack of power and insufficient digital content largely influenced their use. Teacher's age, experience, and gender did not significantly affect the correlation between PE, EE, SI, FC, and BI, but Voluntariness of use moderated SI and BI. The researcher concluded that teachers in UG have adopted DL but their use frequency is varied.

Key Words: Adoption, Digital Learning, Uasin Gishu, UTAUT

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ACRONYMS AND ABBREVIATIONS

BI:	Behavioral Intention
DL:	Digital Learning
DLP:	Digital Literacy Program
EE:	Effort Expectancy
FC:	Facilitating Conditions
ICT:	Information Communication Technology
ICTA:	Information and Communication Technology Authority
IDT:	Innovation Diffusion Theory
LDD:	Learner Digital Device
MM:	Motivation Model
MPCU:	Model of PC Utilization
PE:	Performance Expectancy
SCT:	Social Cognitive Theory
SI:	Social Influence
TAM:	Technology Acceptance Model
TDD:	Teacher Digital Device
TPB:	Theory of Planned Behavior
UB:	Use Behavior
UGC:	Uasin Gishu County
UTAUT:	Unified Theory of Acceptance and Use of Technology

CHAPTER ONE

INTRODUCTION

1.1 Background to the Study

ICT has proven to be an effective teaching and learning instrument at all academic levels. When used effectively, ICT is capable of making education more accessible from anywhere at a cheaper cost. It also improves the teaching and learning experience, leading to better learning results. The use of technology, particularly in early childhood education enables educators to tailor teaching content to suit the pupils learning needs and abilities. It also promotes knowledge skills formation and teamwork among the learners and increases efficiency and effectiveness of education planning and delivery.

In the recent past, ICT has been incorporated into the primary school curricula in many countries across the world. Buabeng-Andoh, (2012) points out that governments are investing heavily in ICT, which has, in turn, led to dramatic growth and availability of ICT in schools. For example, in the United Kingdom, between 2008 and 2009, the government allocated £ 2.5 billion to purchase ICT instructional instruments. Similarly, in the United States, the government spent close to $10.7 billion in 2009 on ICT for institutions for higher learning and K-12 schools. Over $ 410 million were spent annually in New Zealand on ICT infrastructure for schools.

In Kenya, the National Treasury allocated Ksh13.4 billion for the Digital Literacy Programme in the 2016/2017 budget. The funding was intended to support the creation of digital content, teacher training and capacity building, purchase of computer equipment and construction of computer labs for all government primary schools (Treasury, 2016). A report by the Information and Communication Technology Authority (ICTA) indicates that 19,565 schools across the country already have digital devices installed. As of August 2017, 989,485 learner digital devices, 39,130 teacher digital devices, and 19,565 projectors had been installed. The total number of devices was 1,067,745. Also, more than 90,000 public school teachers were trained to provide students with digital learning. Over 12,035 schools were assessed for e-readiness and a total of 10,697 schools were discovered to be e-ready to enforce the program.

Providing schools with the required hardware and software is crucial for effective incorporation of ICT into the learning curriculum, but it is not adequate to guarantee its efficient use (Vrasidas, 2015; Inan & Lowther, 2010). Support and funding from various governments have led to an increased availability of ICT in learning institutions. Despite this rise, there is evidence that educators are not making effective use of technology as anticipated (Aldunate & Nussbaum, 2013). Other than government commitment and availability of equipment and ICT tools, successful adoption of ICT also depends on the following factors; Favorable execution policy, well-established infrastructure, a plan for the continuous professional development of educators, adequate curricula and software to enable the use of ICT and timely technical support such as troubleshooting, maintenance and repair of equipment in teaching centers. In addition to these factors, it is also necessary to consider the teachers' perceptions which include their vision of technology utilization and personal opinions about technology.

This study will evaluate the adoption of digital learning by teachers in Uasin Gishu County's Public Primary Schools. It will investigate the teacher's perception of technology and how these perceptions influence their intent to use and adopt digital learning.

1.1.1 Digital Literacy Program in Kenya

Education is among the many public sectors that can be enhanced through technology (Kozma, 2005). It has been acknowledged by multiple stakeholders as a main economic sector composed of service and value-added operations. In its Vision 2030, the Government of Kenya recognized various social and economic sectors whose performance could be improved through the use of ICT. The vision is the government's national long-term development blueprint directed at propelling the nation from a developing to a middle-income economy. Its primary goal is universal access to ICT. Under it, two flagship projects were introduced: Digital Literacy Program and Academic and Administrative Process Automation at all educational levels (Ministry of ICT, 2014).

ICT Integration in Primary Education in under the Digital Literacy Program was officially launched in 2016. The project's main objective is to align and incorporate ICT into the primary school curriculum in all government primary schools. Fundamental elements of the project include ICT infrastructure improvement, digital content development, teacher capacity building, and ICT device procurement.

The (European Commission, 2017) points out that the demands of the teaching profession keep changing rapidly. Teachers, therefore, need to acquire a new set of skills and competencies to keep up with these new demands. The introduction of digital learning, in particular, requires teachers to continuously develop their digital competence. During the implementation of the DLP, the Ministry of Education, Science and Technology in cooperation with other stakeholders, created a training module for Class One educators from government primary schools; to develop and improve their ability to offer digital learning to students. A status report by the Digital Literacy Program indicates that over 90,000 teachers across the country were trained to offer digital learning to students. Also, as of August 2017, 989,485 learner digital devices (LDD), 39,130 teacher digital devices (TDD), and 19,565 projectors were installed. The cumulative number of devices were 1,067,745. In Uasin Gishu County alone, 20287 LDDs, 910 TDDs, 455 Projectors, and 455 Digital content servers and wireless routers have been installed. Close to 300 teachers from the county received training to implement the project. This research will evaluate teachers' adoption of digital learning in Uasin Gishu County.

1.2 Problem Statement

ICT integration in Kenya's primary education under the Digital Literacy Program was formally introduced in May 2016. The project's primary goal is to incorporate ICT in all government primary schools across the country. The government has invested heavily in this project. The National Treasury allocated Ksh 13.4 billion towards the Project in the 2016/2017 budget. Despite this investment, I have observed that integration and adoption in schools have been slow and problematic. Research carried out on similar projects in other countries by (Gulbahar, 2007) indicate that massive investments in education digitization have not resulted in meaningful use in teaching and learning. There is adequate evidence to demonstrate that despite the increased accessibility; educators do not make use of information technology (Hixon & amp; Buckemeyer, 2009). Inan & Lowther, (2010) argue that increased supply of technology in schools without considering other factors that contribute to their adoption may lead to failed implementation. This is true because numerous problems always arise with the introduction of technology; hardware problems resulting to a technology breakdown, use of technology consumes too much time, the existing curriculum does not align with the technology being introduced or the technology does not fit the teacher's schedule, among others. In Kenya for example, one lesson takes thirty minutes.

This time could be insufficient for a teacher to use digital learning effectively before the allocated time runs out. When faced with these challenges, the teacher opts to put away the technology and reverts back to their old teaching methods (Strong-Wilson, 2008).

This study aims to evaluate the adoption of digital learning by educators in government primary schools in Uasin Gishu County. The investigator will then create a model for the effective implementation of digital learning in the county.

1.3 Research Objectives

The purpose of this research is to accomplish the following objectives.

1.3.1 Main objective

To develop an adoption model for digital learning in public primary schools in UGC.

1.3.2 Research Questions

This research will evaluate teachers' adoption of digital learning in public primary schools in UGC. The research objective will be achieved by examining how the variables in the Unified Theory of Acceptance and Use of Technology Model influence acceptance. The researcher will attempt to answer the following questions:

1. Have the teachers in UGC adopted digital learning?
2. How do the UTAUT variables (PE, EE, FC, and SI) influence teachers' Behavioral Intention and adoption of digital learning?
3. Do gender, age, and voluntariness moderate correlation between UTAUT's dependent and independent variables?

1.4 Justification of the Study

Approximately Ksh 13.4 billion was allocated for the Digital Literacy Program by the National Treasury in the 2016/2017. The project was designed to bring digital learning to all government primary schools across the nation. Some of this cash has already been spent on the project's first stage. Another Ksh 13.4 billion is yet to be released. It is, therefore, necessary to investigate whether this investment by the Government is yielding the desired results by evaluating whether or not the teachers in Uasin Gishu County have adopted digital learning.

1.5 Significance

The research findings will benefit the Ministry of Education, Information Communication Technology Authority (ICTA) and other participants in the Digital Literacy Program. It will lead to the development of an adoption model that can be applied to effectively and successfully implement digital learning in UGC. Possible solutions and strategies to factors that hinder adoption will also be proposed. It will also investigate whether or not the government is getting value from the huge amount of money it has invested in the Project.

1.6 Limitations of the Study

A major restriction in this study is that owing to fear of victimization, some of the teachers being surveyed may decline to respond honestly.

1.7 Assumptions of the Study

The investigator assumes that all participants will be sincere and objective, particularly on issues related to their digital learning use behavior.

1.8 Definition of Terms

Digital Learning: The use of Teacher Digital Device and Learner Digital Device loaded with digital learning content and necessary software to teach in class and perform other tasks related to learning, outside class.

Adoption: Actual use of digital learning tools and devices in class.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

Using ICT has demonstrated to be efficient in enhancing teaching and learning in classrooms. Technology provides a wide range of functionalities that can transform traditional classrooms into an interactive and more exciting learning environment where learners can see what is being taught (Omwenga, 2006). With the introduction of digital teaching to early childhood education in Kenya, teachers' technology application is likely to have a beneficial effect on educational outcomes. Rangaswamy & Gupta, (2000) illustrate that adoption is the choice that individuals make before they commit themselves to use an innovation. Likewise, (Rogers, 2003) points out that adoption is a person's choice to make use of introduced technology as the best course of action available. Over the years, numerous research have been undertaken to identify the factors that either promote or hinder incorporation of technology into the classroom. In this section, we will review ideas linked to teacher implementation of digital learning and explore the literature on existing frameworks and theories to clarify how and why individuals embrace technology.

2.2 Technology Adoption Around the World

It is well documented in several studies that despite the sufficient supply of digital learning tools, the teachers do not adopt the technology (Hixon & amp; Buckemeyer, 2009). For example, the FATIH project, also referred to as the Movement of Increasing Opportunities and Improving Technology that was implemented in Turkey did not perform as expected. Approximately $200 million was assigned in the first stage of the project to buy 675,000 tablets. A total of 700 million dollar budget was allocated towards the same initiative by the end of 2013. Research findings of (Baturay, Gökçearslan & Ke, 2017) indicated that the investment did not bring about the expected returns. Availability of computers and other infrastructure to support digital learning in the schools did not correlate with the attitude that the teachers had towards Computer-Assisted Education (CAE). The researchers also found out that no relationship existed between internet access and computer ownership variables and the intention of technology acceptance.

Similarly, analysis of quantitative and qualitative data in Cyprus disclosed that educators were prepared to embrace digital learning because they thought that the use of technology while teaching could help improve education. However, it was not used effectively. The researcher identified that the primary obstacles hindering use were: unaligned curriculum to accommodate IT, inadequate time to execute technology-based classes, inadequate time to prepare ICT-based classes and events, and absence of facilities (Vrasidas, 2015).

2.3 Technology Adoption in Africa

In Ghana, a study by (Buabeng, 2012) on the implementation of digital learning shows that the technology did not adequately transform how education was being delivered to the students in second-cycle schools. The researcher found out that despite governments' effort to support them with training in ICT, the educators hadn't moved from traditional teacher-centric teaching to student-centric learning. He also found that there was an inverse relationship between the ICT use behavior, teachers' age, and teaching experience.

2.4 Factors Influencing Adoption

According to (UNESCO, 2011), an important factor influencing technology implementation is the capacity of the environment to adopt in order to benefit from it. Several other researchers have recognized various factors that support or hinder the application of technology. For example, (Moreshouse & Stockdill, 1992) recognized that content characteristic, user abilities, technological factors, and organizational capacity as factors affecting ICT inclusion and adoption. Likewise, (Balanskat, Blamire & Kefalla, 2007) recognized influences of technology adoption exist at three different levels such as the system, the school/ institution, and teacher/ user level.

Ertmer, 1999, split the barriers to adopting technology into two main categories. The first category consists of extrinsic or first-order factors and the other intrinsic or second-order factors. Extrinsic obstacles could be lack of funds, inadequate teacher training, absence of technical support and insufficient time to prepare. Intrinsic obstacles include teachers ' technological beliefs, technology integration visions, and teachers ' opinions on their school's teaching and learning techniques. The investigator argues that extrinsic obstacles are readily overcome through a well- organized plan and efficient investment but intrinsic obstacles are much harder to overcome. Adopting

technological innovations requires time and on other occasions a paradigm shift for the educators. (Baturay, Gökçearslan & Ke, 2017).

Other factors captured from the Literature review include; Absence of well-developed policy to guide the implementation process, lack of proper leadership to support the implementation and adoption process, inadequate physical and technological infrastructure, defective curriculum that limits inclusion, limited professional growth of teachers, organizational culture and personal characteristics of the teachers and teachers' beliefs, practices and how they perceived technology These factors could be easily mapped into any of the broad categories identified by the scholars in the previous section. All these factors need to be considered when introducing technology because; adoption is likely to fail if they are not given the attention that they deserve.

2.4.1 Teacher attitude/perceptions

The process of implementing technology is complex and is likely to be influenced by various social factors. During the process, the users develop their unique perceptions about the technology being introduced. It is therefore essential to take into account the mental, emotional and contextual issues of the individuals expected to use the technology to attain effective implementation (Straub, 2009). Keengwe and Onchwari, (2008) also believe that the attitudes and beliefs of teachers towards technology greatly affect their effective incorporation into teaching. The researchers argue that when educators feel that the use of technology does not fulfill their needs or that of their students, they will not bother much about using it. On the other hand, positive teacher attitude toward the use of technology causes them to contribute positively to the adoption and improvement of the technology.

2.4.2 Culture

Organizational culture is a collection of shared assumptions that provide guidance to the code of conduct an in organizations by defining the appropriate behavior for different conditions (Schultz Ravasi, 2006). Tension is experienced within the existing culture when technology is being introduced into a new environment (Guzman & Nussbaum, 2009; Meister, 2010; Rogers, 2003). Therefore, to seamlessly integrate the use of technology, it is essential to create a fresh culture.

2.4.3 Sufficient Research

In most cases, educational reforms related to technology integrations such as the Digital Literacy Program are often aimed at improving teaching methods by digitizing educational content and modifying the delivery of curriculum content to the pupil. These reforms are often proposed by government agencies (Schraw, 2010). Most of the time, schools do not implement the reforms because they lack sufficient research to identify their viability and importance. The intended technology changes that are not adequately tested before introduction end up missing backing from users who are tasked with implementing them (Davis, Preston, & Sahin, 2009; O'Neil, 2000). In response, the initiators give fast remedies to cope with the issue, but educators always return to the initial traditional education method.

2.4.4 Professional development

The changes in the manner individuals interact and send information in the 21st century has brought about academic reforms. These reforms require educators to have adequate knowledge to create additional content, modify and apply digital learning when teaching. They must be ready for implementation through training to use ICT effectively and creatively (Wamakote, 2010). Adequately trained teachers are more likely to embrace technology compared to those who have not been trained. Listening to teachers' requirements is also essential for the effective implementation of technology. However, this rarely happens because school heads do not recognize and appreciate the teacher (Meister, 2010). School Heads need to acknowledge the function of teachers as agents of change as well as appreciate their capacity and contribution to the implementation (Ertmer & Ottenbreit-Leftwich, 2010).

2.4.5 Leadership

Organizational leadership is a significant factor in the application of technology in schools (Byrom & Bingham, 2001). Technology implementation often lacks well-defined roles for the users involved in the process making its success uncertain (Elias, Zins, Gracyk, & Weissberg, 2003). All the leaders who have been tasked with the implementation need to act as agents of change to make it successful (Ertmer & Ottenbreit-Leftwich, 2010). School Heads also need to communicate the importance of new technology and the strategies for its implementation. They must communicate the specific roles of the various categories of individuals who will take part in the implementation. To maintain integration, there must also be a shared vision for all the people

concerned. The shared vision will propel all people to work together towards a common objective. The behavior of school heads and all other leaders must be aligned with the vision of the new technology to motivate everyone else.

Leaders also need to acknowledge that it takes time before the advantages of technology can be fully appreciated and they should allow time for it. They should support the teachers ' professional development during this process (Byrom & Bingham, 2001; Davis et al., 2010). School Heads should lead by example when implementing the technology. If they are unable to use technology, they will also find it difficult to inspire and lead others to use it. Their conduct must be compatible with the values. Their belief in the importance of technology will propel them to avail all the necessary resources and support to facilitate the implementation (Byrom & Bingham, 2001)

2.4.5 Personal characteristics

Personal user traits which include their academic background, gender, age and experience in computer use affect their implementation of an innovation (Schiller, 2003). The findings of (Venkatesh & Morris, 2000) illustrates that the effort expected when using a specific technology is more prominent for females compared to males. Plude and Hoyer (1985) also point out that progressed age can be related to challenges in comprehending intricate instructions and paying attention to information, which may be essential when using software systems and technology. Similarly, (Hall and Mansfield, 1975) indicate that psychologists have observed that elderly employees attach more significance to obtaining help and support while working. This is more evident when considering the increasing physical and cognitive limitations connected with age in the context of complex IT use. Bergeron et al. (1990), notes that more seasoned users find various possibilities for assistance and support throughout the institution, thereby removing obstacles to continuous use.

2.5 Technology Adoption Theories and Models

Multiple technology acceptance models exist to illustrate the user's willingness and readiness to adopt information technology. Most of these models have been tested and demonstrated to be efficient in studies related to information technology (IT) acceptance and use. Other models were obtained from older models.

2.5.1 The Theory of Reasoned Action (TRA)

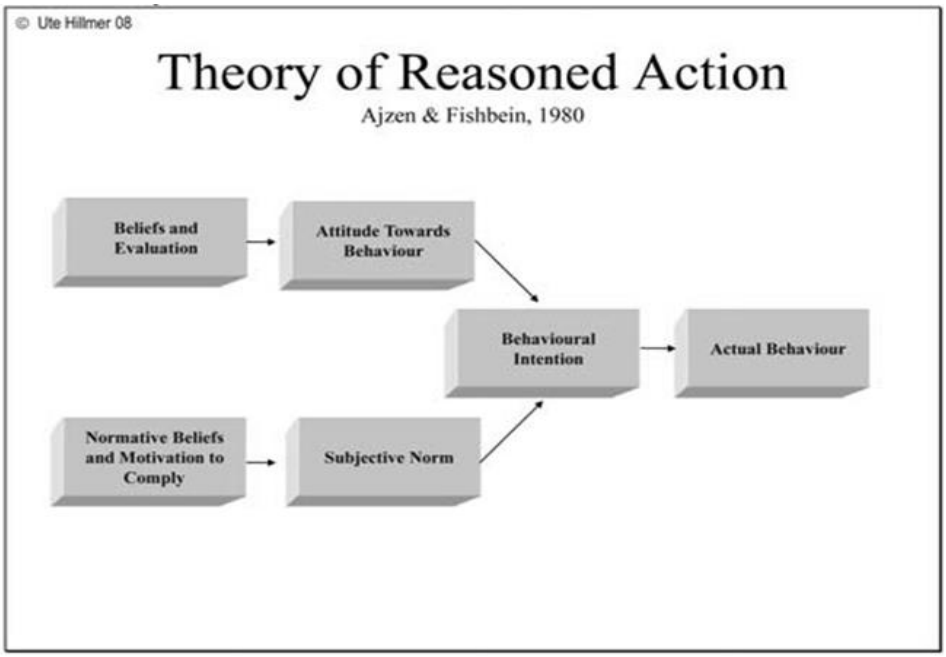

Figure 1: TRA, Source (Hillmer, 2009)

The Theory of Reasoned Action (TRA) illustrates that the user's conduct as a function of his/her behavioral intentions. It demonstrates an individual's subjective norms and behavioral attitude concerning their behavior. The users' attitude comprises of their behavioral beliefs and an assessment of their behavioral outcomes. This implies that if the user believes that the outcome of their actions is positive, then they will have a favorable attitude to carry out that action. Their negative perception also leads to negative action. Subjective norms comprise the users' normative opinions and motivation to comply. This means that when other people who influence the user's behavior see it as positive, then the user is motivated to comply (Hillmer, 2009).

2.5.2 Technology Acceptance Model (TAM & TAM2)

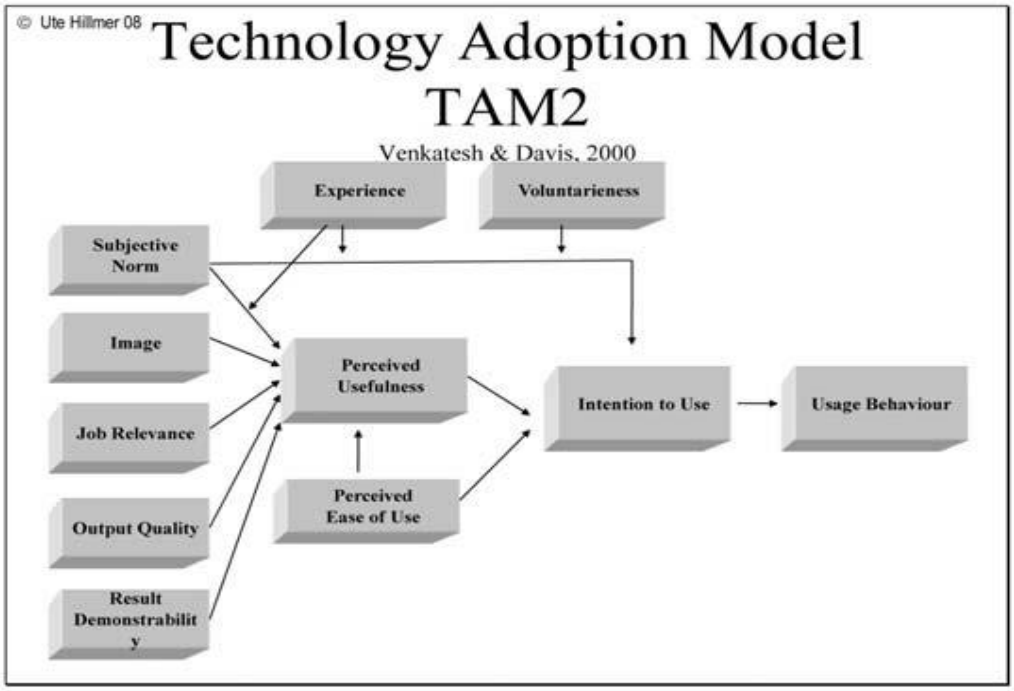

Figure 2: TAM Source (Hillmer, 2009)

The Technology Acceptance Model abbreviated as TAM is an important hypothesis developed by (Ajzen and Fishbein, 1973, 1975) and is based on TRA. Here, the users' perceived ease of use and perceived usefulness for an innovation, affect their attitude towards it. The individual's attitude then influences their desire to use technology, which then impacts their real use. According to (Shaft et al, 2003), Perceived usefulness is described as the extent to which a person believes that using new technology would improve his or her job performance, and Perceived Ease of use is the extent to which a person believes that using the new technology would be effortless (Hillmer, 2009)

The TAM was further extended to TAM2, which includes: subjective norms, output quality, image, result demonstrability and job relevance as influencers of perceived usefulness. Unlike TRA, TAM excludes the attitude constructs.

According to (Legris et al., 2003) TAM's primary objective is to evaluate the influence of external factors on the user's attitudes, opinions, and plans. The model illustrates that Perceived Ease of Use by the user and the system's perceived usefulness are the main determinants of system use.

2.5.3 Unified Theory of Acceptance and Use of Technology (UTAUT)

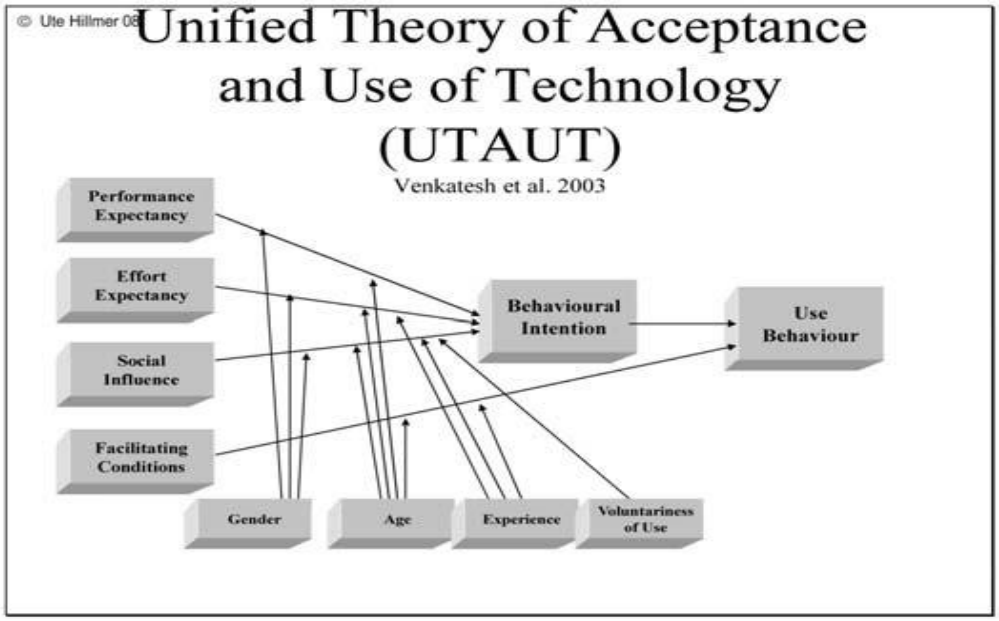

Figure 3: UTAUT Model Source (Hillmer, 2009)

Venkatesh et al. (2003) Unified Theory of Acceptance and Use of Technology Model abbreviated as UTAUT was developed as a result of a detailed evaluation of several existing technology acceptance models. Similarities in the models were then used to capture the key elements that make up the UTAUT model.

UTAUT model has three direct elements that determine an individual's behavioral intention. They include effort expectancy, performance expectancy, and social influence. It also has two direct predictors of Use behavior which include facilitating conditions and behavioral intention. Additionally, the model has moderating factors experience, age, gender and voluntariness of use which influence the dependent and independent variables. Venkatesh, et al., (2003) shows the variables from other user acceptance models that are directly associated with each variable in UTAUT.

Performance expectancy is regarded as a major determining factor of a user's behavioral intention. It relates to the extent to which technology improves the quality of job performance when people use it (Venkatesh, et al., 2012). The variables from the other user acceptance models immediately related to Performance expectancy include; SCT's outcome expectations, MM's extrinsic motivation, IDT's relative advantage, TAM/TAM2's perceived usefulness, and MPC's job-fit.

Effort expectancy is another fundamental predictor of user's Behavioral intention to embrace a new system. It shows an individual's thoughts on the ease of use associated with a new system (Venkatesh, et al., 2012). The three variables from the other user acceptance models that immediately related to effort expectancy include; IDT's ease of use, MPCU's complexity and TAM/TAM2's Perceived ease of use.

Also, the Social Influence variable show how important people (e.g., supervisors, peers and friends) influence a person to use new technology. It is also considered to directly influence the user's behavioral intention. Variables from the other user acceptance models that directly relate to it include IDT's image, TRA's Subjective norm, and MPCU's social factors. This variable becomes significant only in compulsory situations, most probably in the form of compliance.

The model also has facilitating conditions, which illustrates the extent to which the user thinks that there are appropriate technological and organizational elements exist to promote the implementation of a new system. They directly influence Use Behavior. This variable directly relates to; IDT's compatibility, TPBI DTPB's perceived behavioral control, and MPCU's facilitating conditions, in other similar models. Lastly, the Behavioral Intention variable shows the user's plan and intention to adopt new technology. It directly influences user behavior.

2.6 Conceptual Framework

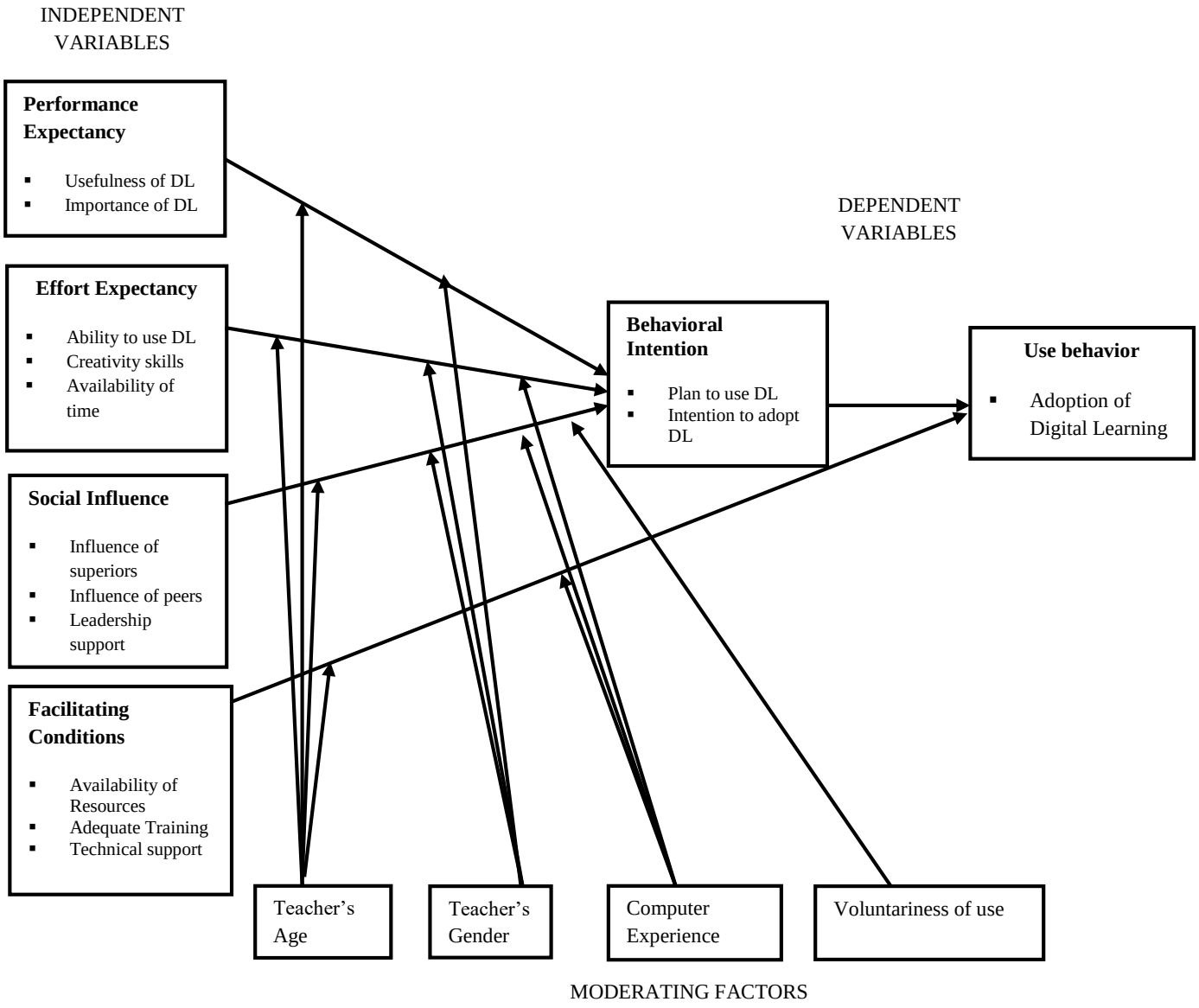

Figure 4: Conceptual Framework derived from UTAUT Model Source (Hillmer, 2009)

2.6.1 Explanation of Conceptual Framework

The researcher adopted the UTAUT Model to evaluate whether its variables influence teachers' behavioral intention and adoption of digital learning. The researcher will also evaluate whether moderating factors; voluntariness of use, gender and age affect the relationship between the model's dependent and independent variables.

The teacher's positive performance expectancy is anticipated to have a positive impact on their behavioral intention to use DL, leading to the adoption of digital learning. Using this variable, the researcher will evaluate whether digital learning has affected the quality of teachers' work and whether it is relevant it is to their job.

Effort expectation influences adoption because if the teacher perceives the technology as simple to use, it strongly affects their behavioral intention to implement digital learning. Using this variable, the researcher will determine the teachers' perceived ease of use associated with DL.

The Social influence variable will be used to evaluate whether other significant people influence the teachers to adopt Digital Learning. Pressure from other people within/without the school is expected to positively influence the teacher's behavioral intention to use digital learning.

Favorable facilitating conditions will positively influence the teachers' behavioral intention and adoption of Digital Learning or Use behavior. A teacher with a favorable set of facilitating conditions is anticipated to embrace digital teaching more favorably than one who does not. This variable will be used to evaluate whether the teachers were adequately trained, whether they can receive technical support and the availability of resources associated with digital learning.

Behavioral intentions of the teachers directly influence their use of behavior or adoption of Digital Learning. The researcher will use this variable to evaluate whether the teachers intend and plan to adopt digital learning.

Moderating factors computer experience, age, and gender influence the relationship between UTAUT's dependent and independent variable. The researcher will attempt to identify the connection between these variables.

2.7 Summary of Literature review

The literature review in this study showed that organizational leadership, culture, teacher professional development, and availability of technical support are the significant factors influencing technology adoption. The teachers' user attributes i.e. their level of education, age, gender, and computer experience were also found to influence adoption. These factors acted as a guide for the researcher in her quest to establish whether DL had been adopted in the public primary schools in UGC. The researcher investigated whether DL improves the teachers' job

performance, the ease associated with using DL tools and devices based on the teachers' computer experience, whether other people influence the teachers to use DL, whether they have obtained appropriate training, technical support, and resources to implement DL, and lastly, whether the leadership in their schools supports the initiative.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This section includes the research design, research population, sampling procedure, information collection tool, data analysis technique and ethical factors that were applied in the study.

3.2 Research Design

A study design is a strategy that guides the researcher when gathering, analyzing and interpreting the data collected. It consists of systematic steps connecting the empirical information with the original study issues and ultimately with their findings (Yin, 2009).

A case study of Uasin Gishu County will be carried out to evaluate the implementation of digital learning by teachers. Yin, (2009) explains that a case study is an empirical investigation that explores a case in depth within its real-life context, particularly when the boundaries between them cannot be established. This method of study was appropriate because of the limited time and resource constraints.

According to (Saunders, et al 2009), studies showing the relationship between factors can be called explanatory research. It involves the investigator studying a condition or issue to clarify the interactions between factors. This study was explanatory as it aimed to establish if the teachers had adopted digital learning. The study also aimed at explaining how the UTAUT variables influence teachers' Behavioral intention and adoption of digital learning and whether gender, age, and voluntariness moderate the variables.

A blended strategy was used by the investigator to gather information. The questionnaire included both qualitative and quantitative questions for a wider view of the study issue.

3.3 Target Population

According to (Saunders, et al, 2009) population consists of a complete set of cases from which a suitable sample is drawn. A total of 140 public primary schools in UGC were supplied with digital

learning devices. Two teachers from each of these schools were trained. Therefore, the population of interest in this research was 280 teachers from the 140 schools.

Table 3.1 Research Population

Schools in UGC with Digital Devices and Trained teachers	Total Number of teachers trained	Population Size	Sample Size
140	140*2	280	**165**

3.4 Sampling Procedure and Design

Sampling is the procedure used by the researcher to pick a restricted number of cases (sample) from the whole study entity (population). According to (Corbetta, 2003) an appropriate sample size that has been selected by the researcher should enable the results obtained to be generalized to the whole population. Similarly, (Saunders, et al 2009) points out that an ideal representative sample represents precisely the population that it was taken from.

3.4.1 Sample size

To determine manageable sample size, the researcher applied Slovins (1960) formula to the population with a margin error of 5%. The formula used is as follows.

$$\mathbf{n=N/\ (1+Ne^2)}$$

- n symbolizes sample size
- N symbolizes Population size
- e symbolizes marginal error
- 1 symbolizes constant value

$$n= 280 / (1+280(0.05)^2) \qquad \mathbf{n = 165\ Teachers}$$

3.4.2 Sampling Technique

Simple random sampling was used to select the institutions that participated in the research and also to obtain a representative sample. Approximately 90 of the 140 schools were randomly chosen to participate in the study. The questionnaire was given to two teachers from each of the chosen schools.

3.5 Instruments

Each participant in the research was asked to complete a questionnaire at their own free will. A Questionnaire is a general word used to define all information collection methods in which each participant answers the same set of questions in a predetermined manner (DeVaus, 2002). The questionnaire was broken down into the following sections:

Demographic Information captured data relating to the teacher's Age, Gender, and Experience in using computers. This information was used to evaluate whether moderating factors affect the four direct determinants of use. Performance Expectancy contained data about the teacher's perceived usefulness of Digital Learning. Effort Expectancy was used to gather information about the teachers' perceived ease of use when using digital learning. Social Influence was used to gather information about how important others i.e. superiors and peers influence the teacher's use of digital learning. Facilitating Conditions captured data on the opinions of teachers on how sufficient organizational and technical infrastructure exist to promote the implementation of digital learning. Voluntariness of use captured information on whether the use of digital learning was compulsory or voluntary for the teachers. The behavioral intention variable was used to gather information on whether the teachers plan and intend to use digital learning. Use behavior captured whether the teachers use digital learning and their use frequency.

The questionnaire included both quantitative and qualitative questions. This was performed to allow the investigator to have a wider view on things that could not be properly captured using the quantitative questions.

The researcher used a five-point Likert scale with the following range: Strongly Disagree = 1, Disagree = 2, Neutral = 3, Agree = 4, and Strongly Agree = 5.

Table 3.2 Operationalization of the Conceptual Framework

VARIABLES	INDICATORS	MEANING
Performance Expectancy (Independent Variable)	**Perceived Usefulness** *TAM/TAM2 & C-TAM-TPB*	Teacher's perception that digital learning would enhance how he or she delivers teaching material to the students
	Relative Advantage *IDT*	Teacher's perception that Digital Learning is better than the traditional teaching method.
	Outcome expectation *SCT*	Relates to the behavior performance outcomes. They are divided into performance expectations linked to the teacher's work and personal expectations (individual objectives)
	Job Fit *MPCU*	How Digital Learning capacities enhance the work efficiency of teachers.
Effort Expectancy (Independent Variable)	**Perceived Ease of Use** *TAM/TAM2*	Teacher's perception that hardware and software for digital learning would require minimal effort to comprehend and use.
	Complexity *MPCU*	The extent to which the teacher sees Digital Learning as being comparatively hard to comprehend and execute.
	Ease of Use *IDT*	The teacher's belief on whether Digital Learning is hard to enforce.
Social Influence (Independent Variable)	**Subjective Norms** *C-TAM-TPB, TAM2, TRA & TPB/DTPB*	Influence of other individuals who are crucial to the teacher to determine whether they should use Digital Learning.
	Social factors MPCU	Interpersonal agreements between teachers and other individuals in the same social status.
	Image *IDT*	Teacher's perception that Digital Learning will enhance his/her image or status in the working environment.
Facilitating Conditions (Independent Variable)	**Perceived Behavioral Control** *C-TAM-TPB & TPB/DTPB,*	Teachers ' perceptions of internal and external factors that either restrict or promote the implementation of digital learning. These include factors such as resources
	Compatibility *IDT*	Degree of digital learning compatibility with the teachers' current values, needs, and computer experience.
Behavioral Intention (Dependent Variable)	**Plan Intention**	Teachers' plan and intention to adopt digital learning
Use Behavior (Dependent Variable)	**Actual use of DL Use Frequency**	Adoption of Digital Learning

3.6 Data Analysis Method

Quantitative and qualitative data were be obtained using questionnaires guided by the variables contained in the UTAUT model. Descriptive analysis was done on all variables. Multiple regression analysis and Correlation analyses were used to examine the relationship between the variables.

3.7 Pilot Study

According to Galloway (1997), it is hard to determine the precise amount of pilot responses. However, it is suggested that the investigator collect at least 5% to 10 % of the total sample. This research distributed 20 questionnaires for the pilot study. Out of these, 15 questionnaires were received and analyzed to check whether the instrument was valid and reliable. The pilot study also allowed the researcher to familiarize herself with the data collection procedures.

3.7.1 Validity

The researcher checked the instrument to determine whether the questions in each variable was valid. In particular, the content representation of the variables was tested. The questionnaire's validity was determined by consulting the participants directly.

3.7.2 Reliability

The researcher used Cronbach's Alpha to determine each variable's reliability. Findings of this test enabled the researcher to modify, restructure and eliminate any ambiguous items. The reliability test results have been presented in Table 3.3.

Table 3.3 Reliability Statistics

Variables	Cronbach's Alpha	N of Items
Performance Expectancy	.887	4
Effort Expectancy	.534	4
Social Influence	.561	4
Facilitating Conditions	.723	3
Voluntariness of use	.723	4
Behavioral Intention	.788	2

Performance expectancy had four items with an alpha of .887 indicating that all items were reliable. Social Influence and Effort Expectancy both had four items with an alpha of .534 and .561 respectively. The reliability test for these variables was significantly low indicating some reliable issues. However the researcher had additional qualitative questions in the same variables were not captured in the reliability test, and which could provide additional information to each variable. Facilitating Conditions had three items with an alpha of .723, Voluntariness of use also had four items with an alpha of .723 and Behavioral Intention had two items with an alpha of .788 indicating the reliability of all items.

3.8 Ethical Consideration

The participants were informed of the research's purpose before being requested to respond to the questionnaire. All the data supplied was confidential and was used for scholarly purposes only. The researcher also requested the University's permission before embarking on the exercise.

CHAPTER FOUR

RESULTS AND DISCUSSION

4.1 Introduction

This chapter presents an analysis of the data collected. The results presented include response rate, respondents' demographic information and observations related to the three research questions. The study aimed to evaluate teachers' adoption of digital learning in Public Primary schools within Uasin Gishu County.

4.2 Response Rate

The research sample size comprised of 165 participants. Out of the distributed questionnaires, 180 were dully filled out and submitted. Five responses were found to be duplicated and were deleted. The valid replies were 175, resulting in a response rate of over 100%. The valid response rate was very good and representative. It is aligned with the stipulation of (Mugenda & Mugenda, 1999).

4.3 Demographic Information

Under this section, analysis of the participant's age, gender, computer experience, and level of education have been presented.

4.3.1 Gender of Respondents

The participants were asked to indicate their gender. Majority 70.3% were female and 29.7%, were male. The findings have been presented in Figure 5 below.

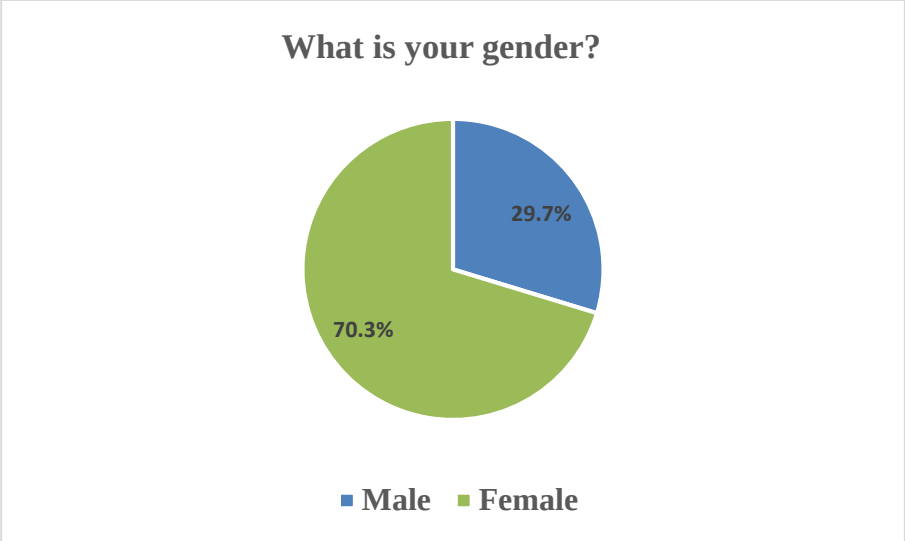

Figure 5: Gender of Respondents

4.3.2 Age of respondents

Data relating to the respondents' age was also collected. According to the results in Figure 6 below, 45.1% of participants were aged between 36- 45 years, 28.6 % were aged between 25-35 years and 26.3% were over 45 years. No respondent was under the age of 25.

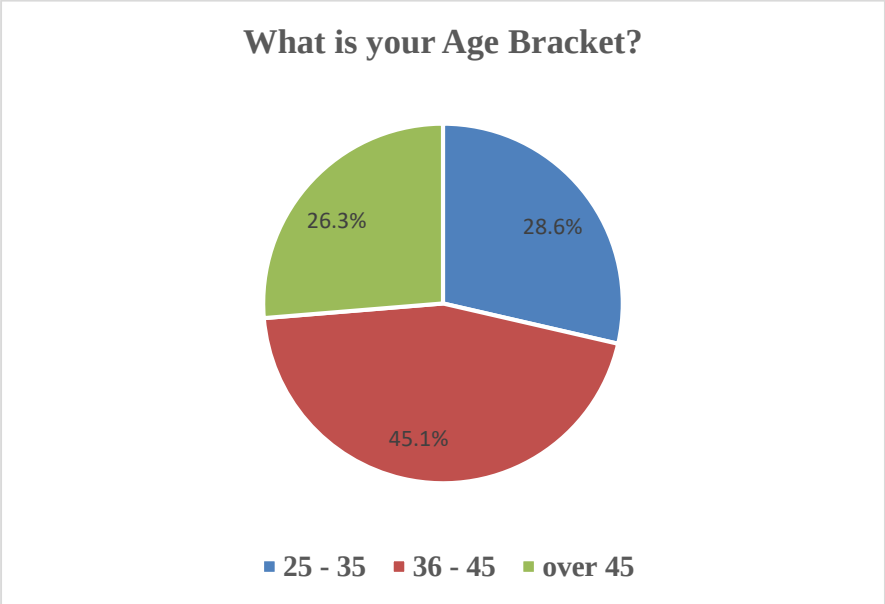

Figure 6: Age distribution of respondents

4.3.3 Respondents by Level of Education

The participants were asked to show their highest level of academic qualifications. Majority of respondents 44.6% were degree holders, 37.7% were diploma holders, 17.1% had done a professional course and 0.6% was a master's holder. The researcher, however, did not ask the respondents to specify which professional course that they had done. The findings are as shown in Figure 7 below.

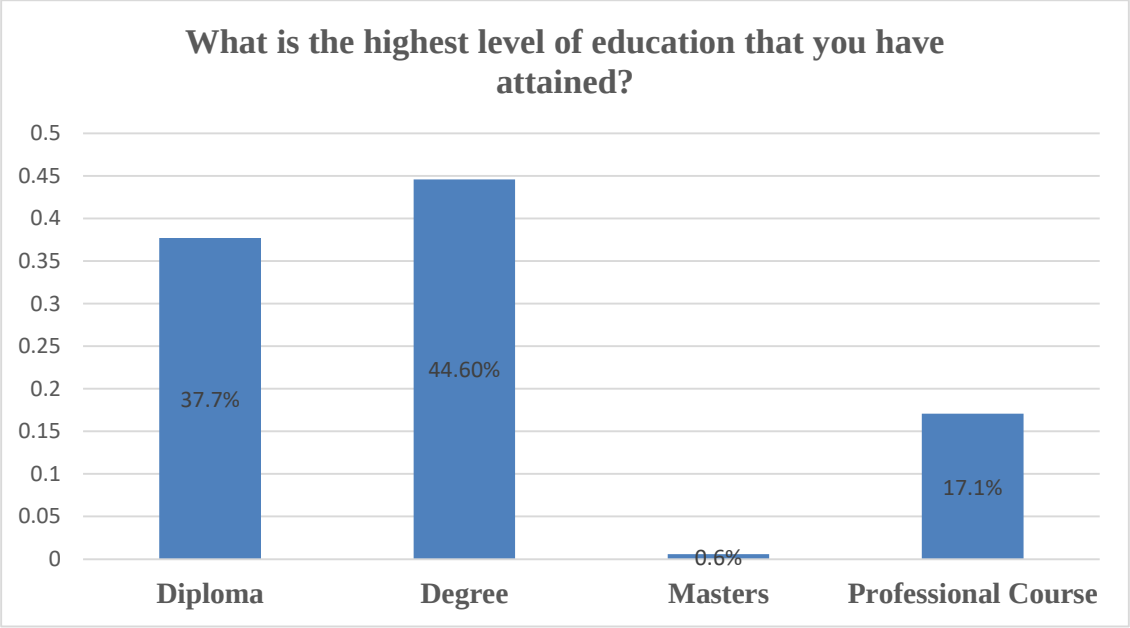

Figure 7: Distribution of Respondents by Level of Education

4.3.4 Respondents' Experience in using Computers

The participants were asked to show their level of computer use experience. Majority 49.7% had some experience (intermediate), 33.7% were beginners, 14.9% had advanced experience and 1.7% had never used a computer before. The findings are as shown in Figure 8.

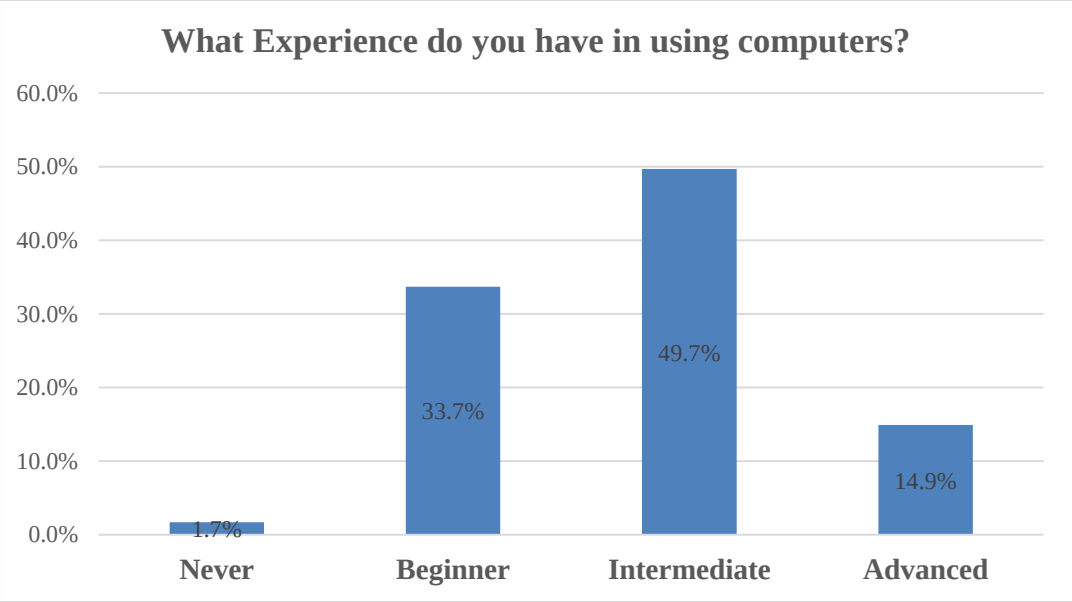

Figure 8: Distribution of Respondents by Experience in Using Computers

4.4 Descriptive Statistics of the Variables

The variables' descriptive results have been presented in this section. The independent variables were PE, EE, FC, and SI, and the dependent variables were Behavioral Intention and Use Behavior. The study findings have been presented as Mean and Standard Deviations. The answers are consistent with the 5 Point Likert-Scale, with a minimum of 1 and a maximum of 5.

4.4.1 Performance Expectancy

The researcher evaluated the respondents' feedback regarding Performance Expectancy. Analytical results were given in Table 4.1.

Table 4.1: Descriptive Statistics for Performance Expectancy

	SD (%)	D (%)	N (%)	A (%)	SA (%)	Mean	Std. Deviation	Min	Max
I find Digital Learning useful when teaching	1.1 %	7.4%	-	72%	19.4%	4.01	.773	1	5
Digital Learning enhances my effectiveness when teaching.	1.1 %	8.6%	1.1%	72.6%	16.6%	3.95	.790	1	5
Digital Learning enables me to accomplish tasks more quickly	1.1 %	13.1 %	.6%	67.4%	17.7%	3.87	.895	1	5
Digital Learning improves job performance.	1.7 %	10.9 %	.6%	69.1%	17.7%	3.90	.875	1	5
Grand Mean= 3.93									
Valid N (Listwise) = 175									

Source: Field Data 2019

The findings show that the majority of participants (Mean = 4.01; Std Dev = 0.773) agreed that they find Digital Learning useful when teaching. The respondents also agreed (Mean = 3.95; Std Dev = 0.79) that Digital Learning enhances their effectiveness when teaching. The findings further show the teachers (Mean = 3.87; Std Dev = 0.895) agreed that Digital Learning allows them to achieve duties faster. In addition, respondents (Mean = 3.9; Std Dev = 0.875) agreed that Digital Learning improves their job performance. Overall, the respondents agreed that Digital Learning improves their job performance.

4.4.2 Effort Expectancy

The researcher evaluated the respondents' feedback regarding Effort Expectancy. The results of the assessment were presented in Table 4.2.

Table 4.2: Descriptive Statistics for Effort Expectancy

	SD (%)	D (%)	N (%)	A (%)	SA (%)	Mean	Std. Deviation	Min	Max
My interaction with Digital Learning tools and devices is clear and understandable.	2.9 %	12.6 %	.6%	77.1 %	6.9%	3.73	.874	1	5
It is easy for me to become skillful when using Digital Learning tools and devices	1.7 %	9.1%	-	70.3 %	18.9 %	3.95	.843	1	5
Working using the devices is easy; it is easy to understand what is going on.	1.1 %	10.3 %	-	76.6 %	12%	3.88	.790	1	5
Using Digital Learning in class involves too much time to prepare content for the lesson	8.6 %	15.4 %	1.1%	68.0 %	6.9%	3.49	1.103	1	5
Grand Mean= 3.76									
Valid N (Listwise) = 175									

Source: Field Data 2019

Majority of the respondents (Mean = 3.73; Std Dev =0.874) agreed that their interaction with Digital Learning tools and devices was clear and understandable. Respondents also (Mean = 3.95; Std Dev =0.843) agreed that it is easy for them to become skillful when using Digital Learning tools and devices, they (Mean = 3.88; Std Dev =0.79) agreed that Working using the devices was easy and that it is easy for them to understand what is going on. Lastly, the respondents (Mean = 3.49; Std Dev =1.103) agreed that using Digital Learning in class involved too much time to prepare content for the lesson. This means that most participants were able to use DL comfortably but encountered other difficulties such as limited time.

4.4.3 Social Influence

The researcher evaluated the respondents' feedback regarding Social Influence. Results of the analysis have been provided in Table 4.3 below.

Table 4.3: Descriptive Statistics for Social Influence

	SD (%)	D (%)	N (%)	A (%)	SA (%)	Mean	Std. Deviation	Min	Max
People who influence my work behavior think that I should adopt Digital Learning.	5.1 %	8.6%	1.1%	73.1 %	12.0 %	3.78	.946	1	5
I use Digital Learning because teachers in other schools use them.	24.6 %	63.4 %	1.1%	9.7%	1.1%	1.99	.868	1	5
Senior Digital Literacy officials have been very helpful in the adoption of Digital Learning	7.4 %	6.3%	1.1%	73.1 %	12.0 %	3.76	1.00	1	5
Teachers in my school who have adopted Digital Learning have a higher profile compared to those who have not.	2.9 %	9.1%	1.1%	73.1 %	13.7 %	3.86	.869	1	5
Grand Mean= 3.35									
Valid N (Listwise) = 175									

Source: Field Data 2019

Majority of the respondents (Mean = 3.78; Std Dev =.946) agreed that people who affect their work behavior believe they should embrace Digital Learning. However, the respondents (Mean =

1.99; Std Dev =0.868) disagreed that they use Digital Learning because teachers in other schools use them. The findings further indicate that the teachers (Mean = 3.76; Std Dev =1.00) agreed that Senior Digital Literacy officials been very helpful in the adoption of Digital Learning. Lastly, the respondents (Mean = 3.86; Std Dev =.869) agreed that teachers in their school who have adopted Digital Learning have a higher profile compared to those who had not. Overall, these findings indicate that significant others influence the respondents to use digital learning.

4.4.4 Facilitating Conditions

The researcher evaluated the respondents' feedback regarding Facilitating Conditions. The results of the assessment have been presented in Table 4.4 below

Table 4.4: Descriptive Statistics for Facilitating Conditions

	SD (%)	D (%)	N (%)	A (%)	SA (%)	Mean	Std. Deviation	Min	Max
I have the resources necessary to use Digital Learning in class.	4.6 %	16.0 %	2.3%	72.6	4.0 %	3.55	.969	1	5
I have enough knowledge to use Digital Learning tools in class.	4.0 %	14.9 %	1.1%	70.3 %	9.7 %	3.67	.979	1	5
I am able to get assistance whenever I face difficulties when using Digital Learning devices.	3.4 %	14.9 %	.6%	68.6 %	12. 6%	3.72	.980	1	5
Grand Mean= 3.65									
Valid N (Listwise) = 175									

Source: Field Data 2019

The results indicate that the majority of the respondents (Mean = 3.55; Std Dev = 0.969) agreed that they have the resources to use Digital Learning in the classroom. The respondents also (Mean = 3.67; Std Dev = 0.979) agreed they have enough expertise to use Digital Learning instruments.

Lastly, the respondents (Mean = 3.72; Std Dev = 0.98) agreed that they were able to get assistance whenever they faced difficulties when using Digital Learning. Overall, these findings indicate that respondents had access to favorable conditions to facilitate the use and implementation of digital learning.

4.4.5 Voluntariness of Use

The study analysed results from the respondents concerning the Voluntariness of Use. The results of the assessment have been given in Table 4.5 below.

Table 4.5: Descriptive Statistics for Voluntariness of Use

	SD (%)	D (%)	N (%)	A (%)	SA (%)	Mean	Std. Deviation	Min	Max
Using digital learning devices for teaching would certainly not be compulsory in my job	12%	64.0 %	.6%	19.4 %	4.0%	2.39	1.055	1	5
My boss headteacher would not require me to use Digital Learning tools in the classroom	24.6 %	64.0 %	3.4%	5.7%	2.3%	1.97	.847	1	5
My superiors would not expect me to use digital learning in the classroom.	24.0 %	66.3 %	3.4%	4.0%	2.3%	1.94	.800	1	5
Using Digital Learning tools in the classroom would be voluntary as opposed to being required by superiors/job	12.0 %	51.4 %	1.7%	29.1 %	5.7%	2.65	1.184	1	5
Grand Mean = 2.24									
Valid N (Listwise) *=175*									

Source: Field Data 2019

According to the results, the majority of the participants (Mean = 2.39; Std Dev =1.055) disagreed that Using digital learning devices for teaching would certainly not be compulsory in their job. The participants also (Mean = 1.97; Std Dev = 0.847) disagreed that the headteacher at their institutions would not expect them to use Digital Learning instruments when teaching. They further (Mean = 1.94; Std Dev = 0.800) disagreed that their superiors would not expect them to use digital learning. Lastly, the respondents (Mean = 2.65; Std Dev =1.184) disagreed that using Digital learning instruments in the classroom would be voluntary. Overall, the respondents disagreed that the adoption of Digital Learning was voluntary. These findings indicate that it is somehow mandatory for respondents to use digital learning.

4.4.6 Behavioral Intention

The study analysed results from the respondents concerning Behavioural Intention. Results of the analysis have been shown in Table 4.6 below.

Table 4.6: Descriptive Statistics for Behavioral Intention

	SD (%)	**D (%)**	**N (%)**	**A (%)**	**SA (%)**	**Mean**	**Std. Deviation**	**Min**	**Max**
I plan to use Digital Learning devices	2.3%	6.3%	-	68.6%	22.9%	4.13	.616	2	5
I intend to adopt Digital Learning.	2.3%	5.7%	.6%	68.0%	23.4%	4.15	.626	2	5
Grand Mean= 4.14									
Valid N (Listwise) = 175									

Source: Field Data 2019

The findings show that the majority of participants (Mean = 4.13; Std Dev = 0.616) agreed that they plan to use Digital Learning and also (Mean = 4.15; Std Dev = 0.626) agreed that they intend to adopt Digital Learning.

4.4.7 Use Behavior

The study analysed results from the respondents concerning Use Behaviour. Results of the analysis have been shown in Table 4.7 below.

Table 4.7: Descriptive Statistics for Use Behavior

					Mean	Std. Deviation	Min	Max
I use Digital Learning when teaching?	Yes 73.1%		No 26.9%		1.27	.444	1	2
How often do you use Digital Learning tools & devices in Class?	Never 6.3%	Once a Month 29.1%	Once a Week 46.3%	More than twice a Week 18.3 %	2.77	.821	1	4
Valid N (Listwise) = 175								

Source: Field Data 2019

The majority of respondents (Mean = 1.27; Std Dev =0.444) agreed that they use Digital Learning when teaching. Most of them, 46.3 % use DL at least once a week, 29.1% use it at least once a month, 18.3% use it more than twice per week and other 6.3% had never used digital learning in class.

4.5 Correlation Analysis of Variables

The investigator used Pearson product-moment correlation to assess the relationship between variables. Two correlation analyses involving different sets of variables were carried out. The first one involved determining the relationship between the independent variables PE, EE, SI, FC, and dependent variable BI and the other involved determining the relationship between FC, BI, and UB.

4.5.1 Correlation between PE, EE, SI, FC, and BI.

The findings indicate that PE, EE, SI, and FC have a positive and statistically significant relationship with BI. PE showed stronger relations with BI with a Pearson's correlation coefficient (r = .707, p = .000). This means that the respondents' performance expectancy positively influenced their behavioral intention. Similarly, a positive and statistically significant correlation existed between EE and BI, with a correlation coefficient of (r = .645, p = .000). This implies that the respondents' Effort expectancy had a positive influence on their behavioral intention.

The other variables SI and FC showed a weak but statistically significant correlation. SI and BI had a correlation coefficient of (r = .314, p = .000) meaning that Social influence from significant people had a positive impact on the respondents' Behavioral Intention. FC and BI had a correlation coefficient of (r = .342, p = .000), meaning that a favorable set of facilitating conditions positively influenced the teacher's behavioral intention towards digital learning. The results have been presented in Table 4.8 below.

Table 4.8: PE, EE, SC, FC, and BI Correlation Matrix

Correlations

		PE	EE	SI	FC	BI
PE	Pearson Correlation	1				
	Sig. (2-tailed)					
	N	175				
EE	Pearson Correlation	.615**	1			
	Sig. (2-tailed)	.000				
	N	175	175			
SI	Pearson Correlation	.293**	.347**	1		
	Sig. (2-tailed)	.000	.000			
	N	175	175	175		
FC	Pearson Correlation	.355**	.440**	.273**	1	
	Sig. (2-tailed)	.000	.000	.000		
	N	175	175	175	175	
BI	**Pearson Correlation**	**.707****	**.645****	**.314****	**.342****	**1**
	Sig. (2-tailed)	**.000**	**.000**	**.000**	**.000**	
	N	**175**	**175**	**175**	**175**	**175**

**. Correlation is significant at the 0.01 level (2-tailed).

Source: Field Data 2019

4.5.2 Correlation between FC, BI, and UB

In the analysis of the second set of variables, FC and BI showed a weak but positive correlation. FC and UB had a correlation coefficient of (r = .213, p = .005) meaning that a favorable set of facilitating conditions had a positive influence on the respondents' adoption of digital learning. BI and UB had a correlation coefficient of (r = .105 p = .169). This relationship is positive but not statistically significant because r > 0.005. The results have been presented in Table 4.9 below.

Table 4.9: FC, BI and UB Correlation Matrix

Correlations

		BI	FC	UB
BI	Pearson Correlation	1		
	Sig. (2-tailed)			
	N	175		
FC	Pearson Correlation	.342**	1	
	Sig. (2-tailed)	.000		
	N	175	175	
UB	**Pearson Correlation**	**.213****	**.105**	**1**
	Sig. (2-tailed)	**.005**	**.169**	
	N	**175**	**175**	**175**

**. Correlation is significant at the 0.01 level (2-tailed).

Source: Field Data 2019

4.6 Regression Analysis

The researcher presumed that a linear association exists between dependent and independent variables. To confirm this, she carried out multiple regression analysis to ascertain the extent to which the predictors could predict the teachers' Behavioral Intention to use digital learning. The findings have been presented below.

4.6.1 Multiple Regression between PE, EE, SI, FC, and BI

A larger R-value when performing data analysis portrays a larger correlation between dependent and independent variables.

Table 4.10: Regression Model Summary

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.758[a]	.574	.564	.18465

a. Predictors: (Constant), FC, SI, PE, EE

Source: Field Data 2019

As shown in Table 4.10 above, R square is 0.564, representing the observed correlation between the variables. This shows PE, EE, SI, and FC account for 56.4% of the teachers BI towards digital learning. This, therefore, implies that keeping all external factors constant, the four predictors in this research influences the dependent variable by 56.4%.

4.6.1.1 Results of ANOVA

As shown in Table 4.11 below, the results of the Analysis of Variance (ANOVA) as given by the F statistic is 57.315, with a degree of freedom (df) of 4. It is statistically significant p-value 0.000 < 0.005 significance level. This implies that the independent variables; PE, EE, SI, and FC influence the respondents' BI to adopt Digital Learning.

Table 4.11: Analysis of Variance

ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	7.817	4	1.954	57.315	.000[a]
	Residual	5.796	170	.034		
	Total	13.613	174			

a. Predictors: (Constant), FC, SI, PE, EE

b. Dependent Variable: BI

4.6.1.2 Individual Regression Coefficients

The beta coefficients show the changes in the dependent variable (Behavioral Intention) generated by the independent variables PE, EE, SI, and FC. Performance Expectancy had the greatest deviation of 0.594, followed by Effort Expectancy at 0.448, then Social Influence at 0.078 and

Facilitating Conditions at 0.013. In the regression equation, the beta values (B) were substituted into the linear equation; $Y = \beta_0 + \beta_1X_1 + \beta_2X_2 + \beta_3X_3 + \beta_4X_4 + \varepsilon_0$, to forecast the effect of the independent variables on the dependent. In the equation, B_0 represented the constant value, $B_{1,2,3,4,..k}$ represented the beta coefficients, $X_{1,2,3,4,..k}$ represented the independent variables and ε represented the error term. The result is as follows:

$Y = -1.004 + 0.594X_1 + 0.448X_2 + 0.078X_3 + 0.013X_4$

The results of the individual regression coefficients have been shown in Table 4.12 below.

Table 4.12: Regression Coefficients

Coefficients[a]

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
1 (Constant)	-1.004	.233		-4.305	.000
PE	.594	.078	.491	7.651	.000
EE	.448	.095	.318	4.700	.000
SI	.078	.076	.056	1.030	.305
FC	.013	.059	.012	.220	.826

a. Dependent Variable: BI

4.6.2 Multiple Regression between FC, BI, and UB

Table 4.13: Regression between FC, BI, and UB

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.215[a]	.046	.035	.17189

a. Predictors: (Constant), BI, FC

From Table 4.13 above, R square is 0.035, meaning that FC and BI account for 3.5 % of the teachers Use Behavior towards digital learning. This implies that keeping all other influences constant, BI and FC, influence UB by 3.5 %.

Table 4.14: Regression Coefficients

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.066	.131		8.156	.000
	FC	.024	.052	.036	.456	.649
	BI	.125	.050	.200	2.528	.012

a. Dependent Variable: UB

The beta coefficients of FC and BI as indicated in Table 4.14 above are .024 and .125 respectively. The relationship between the two variables was positive but not statistically significant $r > 0.005$. FC has $r = .649$ and BI $r = .012$. This means that the teachers Use Behavior could have been influenced by other factors other than their Behavioral Intention.

4.7 Effect of Moderators

Two blocks multiple regression was performed to evaluate whether the moderators affect UTAUT's four primary determinants. The first block consisted of mean-centered independent variables PE, EE, SI, and FC. The second block consisted of respondents' age, gender, experience and mean-centered voluntariness of use. The results have been presented in Table 4.15.

Table 4.15: Effect of Moderators Model Summary

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
Age on SI, PE, EE, and BI	.758[a]	.574	.567	.18414	.574	76.831	3	171	.000
	.759[b]	.576	.566	.18417	.002	.939	1	170	.334
Age on FC and UB	.105[a]	.011	.005	.17454	.011	1.912	1	173	.169
	.110[b]	.012	.001	.17494	.001	.221	1	172	.639
Effect of Gender	.758[a]	.574	.567	.18414	.574	76.831	3	171	.000
	.760[b]	.578	.568	.18386	.004	1.509	1	170	.221
Experience on SI, EE and BI	.652[a]	.425	.418	.21334	.425	63.550	2	172	.000
	.667[b]	.445	.436	.21015	.020	6.257	1	171	.013
Experience on FC and UB	.105[a]	.011	.005	.17454	.011	1.912	1	173	.169
	.175[b]	.030	.019	.17331	.020	3.469	1	172	.064
Effect of VOU on SI	.314[a]	.098	.093	.26636	.098	18.876	1	173	.000
	.386[b]	.149	.139	.25953	.051	10.231	1	172	.002

Source: Field Data 2019

4.7.1 Effect of Age

4.7.1.1 Effect of age on SI, PE, EE, and BI

The correlation between PE, EE, SI, and BI has an R square value of ($r = 0.574$, $p = 0.000$). Addition of age as a moderator causes 0.002 change in the $R^{2.}$ ($r = 0.576$, $p = 0.334$). This increase with $p = 0.334$ is however not statistically significant ($p > 0.005$). This means that the participant's age in this study does not moderate the association between PE, EE, SI, and BI.

4.7.1.2 Effect of age on FC and UB

The correlation between FC and UB has an R square value of (r = 0.011, p = 0.169). Addition of age as a moderator cause 0.001 change in the $R^{2.}$ (r = 0.012, p = 0.639). This increase with p = 0.639 is not statistically significant (p > 0.005). This implies that the respondents' age does not moderate the correlation between FC and UB.

4.7.2 Effect of Gender

R square before the addition of gender as a moderator is (r = 0.574, p = 0.000). The change in R^2 is 0.004 (r = 0.578, p = 0.221). This increase whose p = 0.221 is not statistically significant (p > 0.005), meaning that the respondents' gender in this research does not moderate the relationship between PE, EE, SI, and BI.

4.7.3 Effect of Experience

4.7.3.1 Effect of experience on SI, EE, and BI

R square before the addition of experience as a moderator to the relationship between SI, EE and BI is (r = 0.425, p = 0.000). The change in R^2 is 0.020 (2%) (r = 0.445, p = 0.013). This increase p = 0.013 is not statistically significant (p > 0.005), meaning that the respondents' experience does not moderate the relationship between EE, SI, and BI.

4.7.3.2 Effect of experience on FC and UB

R square before the addition of experience as a moderator to the relationship between FC and UB is (r = 0.011, p = 0.169). The change in R^2 is 0.020 (2%) (r = 0.030, p = 0.064). This increase p = 0.064 is not statistically significant (p > 0.005), meaning that the respondents' experience does not moderate the relationship between FC and UC

4.7.4 Effect of Voluntariness of Use

R square before the addition of voluntariness of use as a moderator is (r = 0.098, p = 0.000). The change in R^2 is 0.051 (5.1%) (r = 0.149, p = 0.002). This increase p = 0.002 is statistically significant (p < 0.005). This implies that the respondents' voluntariness of use in this research moderates the relationship between SI and BI.

4.8 Qualitative Analysis

This chapter shows the outcomes of the qualitative questions' thematic assessment. The questionnaire contained both quantitative and qualitative questions to allow the investigator to have a wider perspective on issues that could not be properly captured using quantitative questions. The analysis focused mainly on the challenges faced by teachers when using digital learning.

4.8.1 Challenges of using digital learning

The major challenges that the respondents face when using digital learning in order of their criticality include;

4.8.1.1 Electricity.

The lack of electricity is among the major challenges experienced during implementation. The variation in use frequency among the teacher could be as a result of this challenge. The teachers pointed out that they were sometimes unable to use digital devices in class because they were unable to charge them. They suggested that the government should provide the schools with a stable power supply to alleviate this problem.

4.8.1.2 Storage facilities

The teachers noted with concern that the lack of proper storage facilities often results in theft or damage of the digital learning devices. They suggested that computer labs should be built in their schools to secure the learning devices and provide comfortable learning spaces for the pupils. They also suggested that enough digital devices should be provided to match the number of pupils in their schools.

4.8.1.3 Time

Majority of the teachers who were interviewed agreed could comfortably use digital learning. They, however, noted that the allocated time was insufficient for them to prepare and effectively use digital learning in class. They proposed that allocating more time to each lesson is an important factor to be considered when implementing digital learning.

4.8.1.4 Insufficient Digital content

Many respondents felt that the existing digital content is shallow. For this reason, they prefer using course textbooks. Other secondary challenges such as connectivity issues and lack of internet prevented them from accessing additional digital learning content from the KICD website.

4.8.1.5 Training

Although the teachers agreed that they had been trained, they felt that the training was not adequate. They proposed that for digital learning to succeed, intensive teacher training should be conducted before further implementation. The teachers also felt that more teachers need to be trained so that a large number of teachers within the school can play a role in the implementation. Majority of the respondents who were interviewed were aged 36-45 years. The teachers proposed that younger teachers be trained to deliver digital learning. The researcher assumed that younger teachers meant respondents below 35 years.

4.8.1.6 Other factors

Several respondents pointed out that it was difficult for them to control a large class and guide the students effectively when using digital learning. They were also concerned that many pupils don't understand English, making it difficult for them to operate digital learning devices and read the content. They proposed that each class should contain a manageable number of learners to enhance their effectiveness.

4.9 Discussions

The UTAUT model in this study explains 56.4% of the variance of Uasin Gishu teachers' Behavioral Intention to use digital learning. PE and EE were the only strong predictors of intention. The teachers' PE implies that digital learning improves the teachers' overall job performance and is important when incorporated into teaching and learning. This variable had the strongest correlation with BI. This implies that the favorable performance expectation of the teachers had a beneficial impact on their behavioral intention. It is consistent with (Venkatesh, et al., 2012) hypothesis that Performance expectancy is a fundamental determinant of user intention.

The results of EE show that most of the teachers from the UG County can use Digital Learning comfortably. They can interact easily with the devices and digital learning content, become creative and teach effectively using the learning devices. However, the time that had been allocated to use digital learning in class remains a challenge. Allocation of additional time to each lesson could be an important consideration in the implementation of digital learning. Similar to Performance Expectancy, this variable was significantly correlated with BI. The teachers perceived the technology as easy to use and it positively influences their behavioral intention. It is

also consistent with Venkatesh's hypothesis that Effort expectancy is a key predictor of the user's intention to use Technology.

Social Influence from significant others i.e. headteacher, colleagues and Digital Literacy officials' influences the teachers in the county to use and adopt digital learning. This influence is in the form of support and encouragement that they receive from their superiors. A big proportion of participants stated that their heads of school encourage them to use digital learning, provide necessary support whenever needed, allow them to attend training workshops and solicit for provision of resource needed for the implementation. They also indicated that senior digital learning officials regularly visit their schools to monitor the progress of digital learning. Change in their professional profile also motivates them to use digital learning.

The results of Facilitating conditions indicate that resources such as LDDs, TDDs, Access point, projectors, and digital content have been provided to support digital learning in Uasin Gishu County. The teachers also know how to use digital learning when teaching. Additionally, they can receive adequate technical support when required.

Both Social Influence and Facilitating conditions were positively correlated with BI. This relationship was however weak compared to PE and EE. Although hypothesized by (Venkatesh et al, 2003) that FC does not significantly influence BI, this study established a stronger relationship between FC and BI, compared to FC and UB. This means that sufficient resources, technical support, and knowledge to use digital learning had a greater influence on the teachers' intention to use digital learning. The weak correlation between FC and UB could be as a result of varied responses on how frequent the teachers use digital learning. The varied response in use frequency could have been influenced by insufficient time, lack of power and insufficient digital content.

In previous research, (Raman & Rathakrishnan, 2018), found that PE significantly influences Behavioral Intention. Similarly, Performance Expectancy and Social Influence in (Raman et al, 2014) study, considerably influenced the users' Behavioral Intention, but Facilitating Conditions and Effort Expectancy had no major influence on Behavioral Intention. Unlike this research, (Raman & Don, 2013) found that facilitating conditions was the major predictor of the teachers' behavioral intention. This finding relates to this study in the sense that the researchers,

hypothesized that a higher BI would result in a higher of use of LMS, but their finding indicated that the teachers' behavioral intention did not positively affect their LMS use behavior.

The teachers' age, gender, and experience as moderators to UTAUT's dependent and independent variables did not have significant effects. Other researchers believe that using new technology could more be pronounced for females than males and that enhanced age can be linked with difficulty in processing complicated stimuli; linked with the use of complex software and technologies. In this study, however, no significant change was noted when age, gender, and experience were introduced to moderate the correlation between PE, EE, SI, FC, and BI. However, the effect of Voluntariness of use on the relationship between SI and BI was statistically significant. Most participants reported they had completed a degree course. The researcher assumed that formal education could have had a beneficial effect on the teachers' effort expectancy. In this era where almost everyone owns a smartphone, the researcher also assumed that it could have a positive impact on effort expectancy. This, however, should be subjected to further research to determine whether it is indeed true.

In the analysis of the effect of moderators, (Birch & Irvine, 2009), age was discovered to be the only moderating factor with a major impact on the connection between variables. Both gender and voluntariness of use were insignificant. The finding in this study on the impact of gender as a moderator is compatible with what has been reported in (Baturay et al 2017; Kutluca & Ekici, 2010; Yıldırım & Kaban, 2010). However, it differs from (Wong et al. 2012), who found that gender significantly influences the user acceptance of the technology.

CHAPTER FIVE

CONCLUSION & RECOMMENDATIONS

5.1 Introduction

This chapter provides the study's accomplishments according to the research goals, conclusion, and recommendations for further studies.

5.2 Achievements

The purpose of this study was to evaluate teachers' adoption of digital learning in public primary schools in UGC: The researcher sought answers to the following questions:

1. Have the teachers in UGC adopted digital learning?
2. How do the UTAUT variables (PE, EE, FC, and SI) influence teachers' Behavioral Intention and adoption of digital learning?
3. Do gender, age, and voluntariness moderate correlation between UTAUT's dependent and independent variables?

The researcher established that the teachers have adopted DL. This is true because most participants agreed that they plan and intend to use DL. They also indicated that use Digital Learning when teaching. Their use frequency was however varied. This study attributed this variation to be influenced by challenges such as insufficient time, lack of power and insufficient digital content. The results have been presented in ***Table 4.6 and 4.7***.

The UTAUT variables influence teachers' BI and the adoption of digital learning. This is true because the research findings indicated a positive and statistically significant correlation between PE, EE, SI, FC, and BI, all of which were statistically significant. However, only PE and EE PE showed stronger relations with Pearson's correlation coefficient r > 50% as presented in ***Table 4.8***. FC, BI, and UB have a weak but positive correlation which has been attributed to the varied response in their Use behavior. The results have been presented in ***Table 4.9***

The age, gender, and experience of the teachers involved in the application of digital learning did not have significant impacts on the four immediate determinants PE, EE, SI, and FC. Only voluntariness of use was found to moderate the association between FC and UB. The results have been presented in ***Table 4.15***.

This study also aimed at developing an Adoption Model for digital learning in public primary schools in UGC. With reference to the findings of this study, the researcher has proposed UTAUT as an adoption model best suited to make DL successful in Uasin Gishu County. The researcher, however, has proposed the following changes to be made to the original model.

1. Removal of age and gender as they did not moderate the interaction between PE, EE, SI, and BI.
2. Addition of education and retention of experience as moderating factors because together they could have a strong positive impact on the teachers' effort expectancy.
3. The researcher found a stronger relationship between FC and BI, compared to FC and UB. This meant that the accessibility of funds, technical support, and expertise to use digital learning had a higher impact on the educators' intention to use digital learning. It also implied that the weak correlation between FC and UB could result from diverse answers on how often teachers use digital learning. The diverse reaction in the frequency of use could have been affected by inadequate resources. The researcher, therefore, proposes that FC be included as an independent variable to BI and retained in UB.

Figure 9 below shows the proposed Adoption model for successful adoption of Digital Learning in the County.

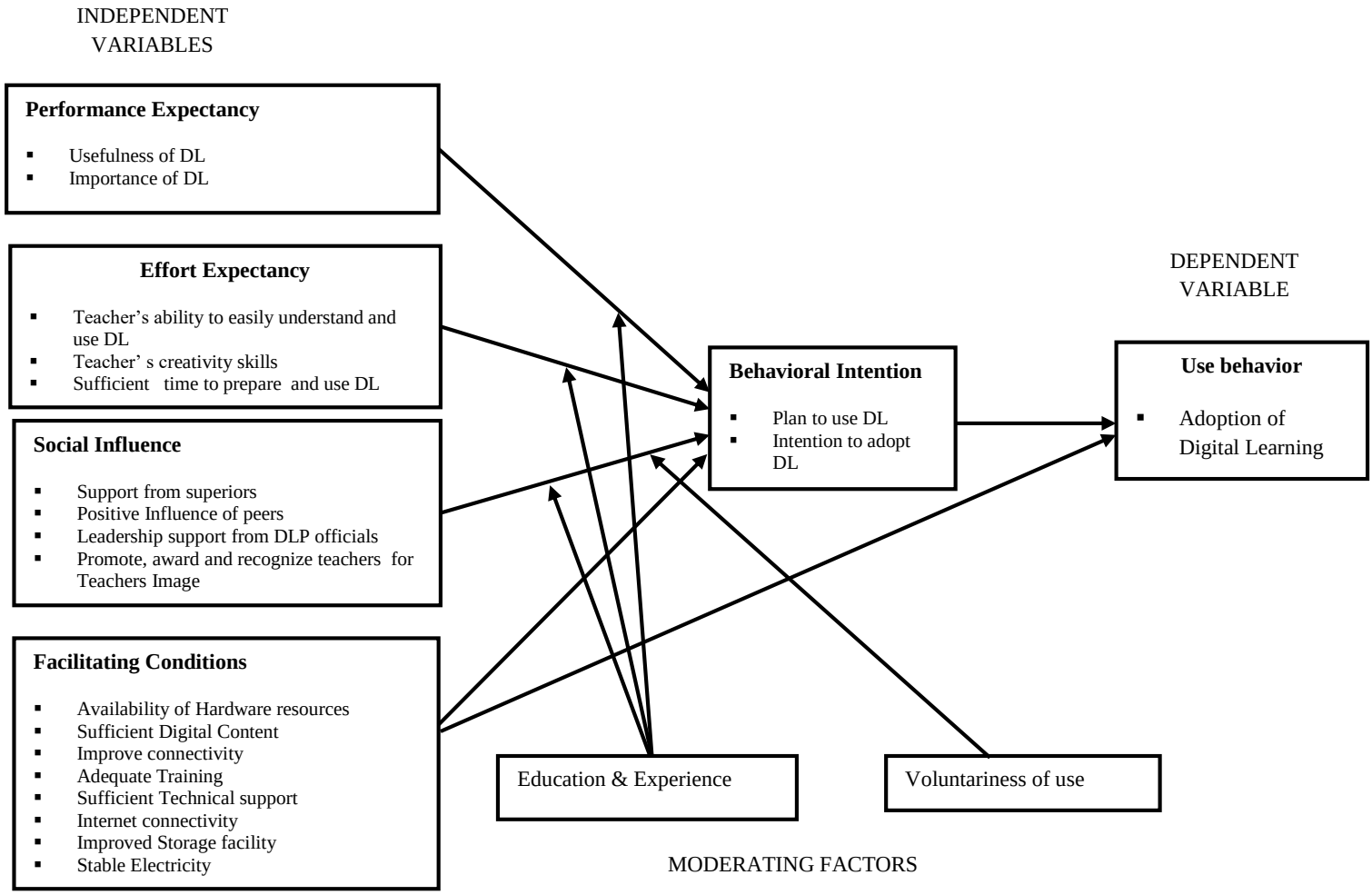

Figure 9: Adoption Model for DL in Uasin Gishu

5.3 Conclusions

Findings from the quantitative research have shown that digital learning is indeed essential. It enhances the teacher's efficiency in teaching and the understanding of students when learning. The use of technology makes learning more interesting, easy and real. It enables the learners to visualize what is being taught through the use of digital content such as pictures and videos. The learners get excited and want to learn more about what they are studying. However several challenges hinder the teachers from effectively using digital learning. They include lack of electricity, lack of proper storage facilities, insufficient time, and insufficient digital content among others.

From the qualitative analysis, Positive performance expectancy, effort expectancy, social influence from significant others and favorable facilitation conditions positively influence the teachers' behavioral intention to adopt digital learning. Performance expectancy and Effort expectancy are the only notable determinants of teachers' behavioral intention to use digital learning. Behavioral intention positively influences use behavior, but other factors challenges such as insufficient time, lack of power and insufficient digital content largely influenced their use behavior. Age, gender and experience do not have a significant moderating effect on the correlation between PE, EE, SI, FC, and BI. Only Voluntariness of use has a significant moderating effect on the relationship between SI and BI.

5.4 Recommendations

5.4.1 Recommendations for practice by stakeholders

This study recommends that since digital learning has been proven to be important to both the teachers and pupils, the Government and stakeholders involved with its implementation need to:

1. Provide stable Electricity to all the schools in which digital learning is being implemented. This will increase the use of frequency of digital learning by ensuring that digital devices are fully charged at all times.
2. Provide adequate storage facilities through the construction of computer labs. The computer labs will be used to secure digital learning devices against theft and damage. They will also provide comfortable learning spaces for the learners.
3. Avail adequate digital content for all the taught subjects. The stakeholders should ensure that KICD has availed sufficient digital content for all the taught subjects relevant to all the classes. They should also ensure that all connectivity issues have been resolved to enable the teachers to have easy access to digital content.
4. Allocate sufficient time for each lesson to enable the teachers to prepare and use digital learning in class
5. Conduct intensive teacher training before further implementation to adequately prepare the teachers. The training should target more teachers from each school and also younger teachers with moderate ICT knowledge.
6. Provide enough digital devices to match the number of pupils in each school and improve on technical support and repair of "faulty" devices.

7. The stakeholders should motivate the teachers to change their attitude towards digital learning by promoting, awarding and recognizing teachers who had adopted digital learning.

5.4.2 Proposal for further research.

In this study, the researcher used a close-ended questionnaire to interview the teachers. This method could not have adequately captured deep underlying issues associated with digital learning, particularly factors that influence the teachers' use behavior. The researcher, therefore, proposes that future research should use a qualitative method with open-ended questions to carry out an in-depth evaluation of the real reasons that brought about the varied response in the teachers use frequency. The proposed adoption model has not been subjected to test in any other research. This study proposes that other researchers validate and test the model to determine whether it is applicable in other contexts. The study was carried out only in Uasin Gishu County. The researcher also proposes that future research should focus on a wider scope by including several other counties across the country to determine the true picture and viability of the Digital Learning Program.

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APPENDICES

APPENDIX I: INTRODUCTORY LETTER

Dear Respondent,

I am a master's student at the University of Nairobi, conducting an academic study on teachers' adoption of digital learning in government primary schools in Uasin Gishu County. This is in partial fulfillment of the requirement of the MSc. Information Technology Management at the University. I am therefore requesting you to respond to the attached questionnaire. Please answer all questions honestly and objectively. Your participation is very essential for the accomplishment of this study and it will be highly appreciated. The information that you will provide will be confidential and will be used only for academic purposes. Thank you.

Lydia Talai - ***Masters Candidate (UoN)***

APPENDIX II: QUESTIONNAIRE

TEACHERS' ADOPTION OF DIGITAL LEARNING IN PUBLIC PRIMARY SCHOOLS

This research seeks to evaluate Teachers' Adoption of Digital Learning in Public Primary Schools within Uasin Gishu County. You have been selected to participate in this study because you are among the teachers who were trained for the Digital Literacy Program. You are likely to take less than thirty (30) minutes to complete the questionnaire. Your involvement is very important to the completion of this research, and it will be extremely valued.

Thank you.

Lydia Chepchumba

* Required

SECTION A: Demographic Information

1. **Name of your School** *

_____

2. **What is your Age Bracket?** *

- ◯ Under 25 years
- ◯ 25 - 35 years
- ◯ 36 - 45 years
- ◯ Over 45 years

3. **What is your gender?** *

- ◯ Male
- ◯ Female

4. **What is the highest level of education that you have attained?** *

- ◯ Diploma
- ◯ Degree
- ◯ Masters
- ◯ Professional Course

5. **What Experience do you have in using computers?** *

- ◯ Never
- ◯ Beginner
- ◯ Intermediate
- ◯ Advanced

SECTION B: Performance Expectancy

To what extent do you agree with the following statements regarding the adoption of Digital Learning in your school? Use a scale of 1 – 5 where (1-Strongly Disagree (SD), 2 - Disagree (D), 3- Neutral (N), 4 – Agree (A) and 5-Strongly Agree (SA))

6. **I find Digital Learning useful when teaching.** *

- ◯ Strongly Disagree
- ◯ Disagree
- ◯ Neutral
- ◯ Agree
- ◯ Strongly Agree

7. **Digital Learning enhances my effectiveness when teaching.** *

- ◯ Strongly Disagree
- ◯ Disagree
- ◯ Neutral
- ◯ Agree
- ◯ Strongly Agree

8. **Digital Learning enables me to accomplish tasks more quickly.** *

- ◯ Strongly Disagree
- ◯ Disagree
- ◯ Neutral
- ◯ Agree
- ◯ Strongly Agree

9. **Digital Learning improves my job performance.** *

- ◯ Strongly Disagree
- ◯ Disagree
- ◯ Neutral
- ◯ Agree
- ◯ Strongly Agree

10. **5. Kindly give and explain your opinion regarding the importance of Digital Learning Devices. (Type in the space below)**

_____

_____

_____

_____

_____

SECTION C: Effort Expectancy

11. **My interaction with Digital Learning tools and devices is clear and understandable.** *

- ◯ Strongly Disagree
- ◯ Disagree
- ◯ Neutral
- ◯ Agree
- ◯ Strongly Agree

12. **It is easy for me to become skillful when using Digital Learning tools and devices** *

- ◯ Strongly Disagree
- ◯ Disagree
- ◯ Neutral
- ◯ Agree
- ◯ Strongly Agree

13. **Working using the devices is easy; it is easy to understand what is going on.** *

- ◯ Strongly Disagree

- ◯ Disagree
- ◯ Neutral
- ◯ Agree
- ◯ Strongly Agree

14. **Using Digital Learning in class involves too much time to prepare content for the lesson** *

- ◯ Strongly disagree
- ◯ Disagree
- ◯ Neutral
- ◯ Agree
- ◯ Strongly agree

15. **What challenges do you face when using Digital Learning in class? (Type in the space below)**

_____

_____

_____

_____

_____

SECTION D: Social Influence

16. **People who influence my work behavior think that I should adopt Digital Learning.** *

- ◯ Strongly Disagree
- ◯ Disagree
- ◯ Neutral
- ◯ Agree
- ◯ Strongly Agree

17. **I use Digital Learning because teachers in other schools use them.** *

- ◯ Strongly disagree
- ◯ Disagree
- ◯ Neutral

- Agree
- Strongly agree

18. **Senior Digital Literacy officials have been very helpful in the adoption of Digital Learning.** *

- Strongly disagree
- Disagree
- Neutral
- Agree
- Strongly agree

19. **Teachers in my school who have adopted Digital Learning have a higher profile compared to those who do not.** *

- Strongly disagree
- Disagree
- Neutral
- Agree
- Strongly agree

SECTION E: Facilitating Conditions

20. **I have the resources necessary to use Digital Learning in class.** *

- Strongly Disagree
- Disagree
- Neutral
- Agree
- Strongly Agree

21. **I have enough knowledge to use Digital Learning tools in class.** *

- Strongly Disagree
- Disagree
- Neutral
- Agree
- Strongly Agree

22. **I am able to get assistance whenever I face difficulties when using Digital Learning devices.** *

- ◯ Strongly Disagree
- ◯ Disagree
- ◯ Neutral
- ◯ Agree
- ◯ Strongly Agree

23. **What resources would facilitate your use of Digital Learning?**

_____

_____

_____

_____

_____

24. **In your opinion, what other factors need to be considered for Digital Learning to be successful?**

_____

_____

_____

_____

_____

SECTION F: Voluntariness of use

25. **Using digital learning devices for teaching would certainly not be compulsory in my job.** *

- ◯ Strongly Disagree
- ◯ Disagree
- ◯ Neutral
- ◯ Agree
- ◯ Strongly Agree

26. **My boss (head teacher) would not require me to use Digital Learning tools in the classroom**. *

- ◯ Strongly Disagree
- ◯ Disagree
- ◯ Neutral
- ◯ Agree
- ◯ Strongly Agree

27. **My superiors would not expect me to use digital learning in the classroom.** *

- ◯ Strongly Disagree
- ◯ Disagree
- ◯ Neutral
- ◯ Agree
- ◯ Strongly Agree

28. **Using Digital Learning tools in the classroom would be voluntary (as opposed to being required by superiors/job)** *

- ◯ Strongly Disagree
- ◯ Disagree
- ◯ Neutral
- ◯ Agree
- ◯ Strongly Agree

29. **Do your superiors support Digital Learning? Kindly explain. (Type in the space below)**

SECTION G: Behavioral Intention

30. **I plan to use Digital Learning devices** *

- ◯ Strongly Disagree
- ◯ Disagree
- ◯ Neutral
- ◯ Agree
- ◯ Strongly Agree

31. **I intend to adopt Digital Learning.** *

- ◯ Strongly Disagree
- ◯ Disagree
- ◯ Neutral
- ◯ Agree
- ◯ Strongly Agree

SECTION H: Use Behavior

32. **I use Digital Learning when teaching?** *

- ◯ Yes
- ◯ No

33. **How often do you use Digital Learning tools & devices in Class?** *

- ◯ Never
- ◯ Once a Month
- ◯ Once a Week
- ◯ More than twice a Week

34. **What other issues would you like to share about Digital Learning? (Type in the space below)**