TEACHERS' ATTITUDE AND INTEGRATION OF ICT IN THE TEACHING PROCESS: A CASE OF SELECTED SECONDARY SCHOOLS IN SHEEMA DISTRICT

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A DISSERTATION SUBMITTED TO THE FACULTY OF EDUCATION IN PARTIAL FULFILMENT OF REQUIREMENT FOR THE AWARD OF A DEGREE OF MASTER OF ARTS IN EDUCATION ADMINISTRATION AND MANAGEMENT OF KABALE UNIVERSITY

MAY 2023

DECLARATION

I, **Asiimwe Joel Owakubariho**, do hereby declare that the work contained in this dissertation titled ***"Teachers' attitude and integration of ICT in the teaching process; a case of selected secondary schools in Sheema District"*** is my original work, and that it has never been submitted in any institution for any award; and where other peoples' work has been used, it has been acknowledged.

Signed……. **Date…….**

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2020/A/EDM/1926/R

APPROVAL

This dissertation titled, ***"Teachers' attitude and integration of ICT in the teaching process; a case of selected secondary schools in Sheema District"*** has been under our supervision and is now ready for submission with our approval.

Signature…… **Date……**

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Signature…… **Date……**

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(SUPERVISOR)

DEDICATION

This research dissertation is dedicated to my family members who have foregone all family gratifications and quality time in order to support my academic endeavors.

ACKNOWLEDGMENT

I am grateful to the Almighty God, who has provided me with all the tools I needed to succeed in this course and who has guided me safely up to this point in the research dissertation. May He live to be praised!

I appreciate my family allowing me time to focus on the course. I appreciate my supervisors' willingness to supervise me and their readiness to give up their time to revise my work. They constantly supported me and offered me advice.

I wish to express my gratitude to my friends for their moral and monetary support in helping me get to this point in my study. Your role and cooperation made this journey a success.

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LIST OF ACRONYMS & ABBREVIATIONS

CAA	Computer assisted assessment
CK	Content knowledge
GITR	Global Information Technology Report
ICT	Information Communication Technologies
PK	Pedagogical knowledge
TCK	Technological content knowledge
TK	Technological knowledge
TPACK	Technological Pedagogical Content Knowledge framework
TPD	Teacher Professional Development
TPK	Technological pedagogical knowledge
UNCST	Uganda National Council of Science and Technology

ABSTRACT

This study was hinged on the investigation of the influence of teachers' attitude and integration of ICT in the teaching process: a case of selected secondary schools in Sheema District. The study focused on three main objectives: to examine the level of integration of ICT in the teaching process; to find out the challenges of teachers' attitude on the integration of ICT in teaching process; and to establish the strategies to enhance teachers' attitude on the integration of ICT in teaching process in selected secondary schools in Sheema district. The study adopted both qualitative and quantitative research approaches with a sample size of 152, which included 12 school administrators (principals) and 140 teachers selected randomly. Data were collected through questionnaires, interview and documentary analysis. Data was analyzed qualitatively and quantitatively. The study discovered that,there was low level of ICT integration in teaching process and also, the challenges of teacher's attitude were due to incompetence, lack of skills, limited ICT facilities and unease regarding use of ICT. High positive linear correlation was observed at $r = +0.907$. This was a high positive relationship with $P < 0.000$.This showed there was a positive significant relationship between teachers' attitude and ICT integration in teaching process. The study then concluded that creation of ICT infrastructure, training of teachers, provision of internet and governmental funding can enhance teachers' attitude and the level of ICT integration in teaching process in Sheema District.

CHAPTER ONE

INTRODUCTION

1.0 Introduction

Technology is being used more and more to make changes that are meant to significantly improve education (Japhet, 2018). In a globalized digital age where teaching and learning may occur at any time and anywhere, the integration of ICT into education gives teachers and students the chance to collaborate more effectively. Education institutions are under increasing pressure to use ICT to impart to pupils the knowledge and skills they will need to succeed in the digital era. Due to this, the study investigated the influence of teachers' attitudes and ICT integration in teaching process in a few selected secondary schools in Sheema District. As a result, this chapter provides information about the study's background, problem statement, purpose, and research objectives and research questions, scope and significance of the study, definition of key terms as well as the conceptual framework.

1.1.0 Background

1.1.1 Historical background to the study

The necessity for the development of information and communication technologies (ICT) has emerged as a worldwide resolution as a result of its enormous significance for all of humanity, (Mohammed &Abdulghani, 2017). ICT is becoming more widely available and influential, and as a result, most nations view ICT as a tool to improve their own nations' educational standards (Noor-UI-Amin, 2013). This has prompted numerous nations to increase their financial investments in technology. For instance, the United States spends more than $10 billion a year on educational technology for public schools, but Australia only spends about AUD$8 billion (Lane, 2012).

Sweden and Singapore are at the top in terms of ICT integration in education and as the most advanced countries, according to the Global Information Technology Report (GITR) rating for 2017–2018. According to rankings, Sweden and Singapore are the most innovative and digital countries, with the best ICT integration in education (Ghavifekr et al..., 2019). The research also noted that a few nations in North America, Asia, and Europe are leading the way in utilizing ICT to revolutionize their economies. The focus on integrating Technology into the classroom has been one of Singapore's educational system's fundamental foundations, according to Lee, Kim, and Lee (2015). Hence, the employment of ICT by school administrators, students, and teachers forms the basis of Singapore's educational system.

The Malaysian government began integrating ICT into the national curriculum for primary and secondary school as part of its most recent education design (2013-2025) to acknowledge the relevance of ICT in education (Ghavifekr, et al..., 2019). By directing the purchase of more than 600,000 computers for use by students in the nation's rural primary schools, the government of Peru launched frameworks for the implementation of a digital literacy programme in schools. However, the initiative has obstacles that go beyond teacher computer skills, including issues with infrastructure like energy and new buildings (Warschauer & Matuchniak, 2010).

Ghana is one of the African nations that has developed comprehensive ICT policies and made significant investments aimed at advancing and enhancing technology use across all industries (Hitachi, 2009). Enu, Nkum, Ninsin, Diabor, and Korsah (2018) note that the strategic plan for the Ghanaian education system currently includes ICT as a key component. For instance, Ghana implemented the "One Laptop per Child Policy," an intervention programme designed to improve teaching and learning and pique students' interest in using ICT. A large number of elementary schools now have a number of computers, thanks to the programme.

According to the basic education strategy, the Tanzanian government adopted the Technological Pedagogical Content Knowledge (TPACK) framework and created the Information and Communication Technology for Teacher Professional Development (ICT-TPD) (Swarts & Wachira, 2010). ICT-primary TPD's goal was to increase teachers' ability to use new technologies as they teach Science, Math, and English in Tanzanian classrooms.

The Ugandan government has undertaken a number of initiatives to encourage the use of ICT in many economic sectors because it recognizes the role that ICT has played in helping the nation achieve middle-income status. Among other programmes, the government developed a National ICT policy on education in 2004 that included a portion boosting knowledge acquisition through e-learning and connecting schools to the power grid through the rural electrification programme. The majority of researches carried out in developing nations show that instructors have been hesitant to adopt technology despite the introduction of ICT in education (Adebayo & Fagbohun, 2013; Kafyulilo, Fisser, Pieters & Voogt, 2015; Sulemana, Anyanful & Abdulai, 2018; Sutter & Kihara, 2019). Computers are mostly utilized for administrative tasks and training fundamental ICT skills and for administration purposes but not as tools for instructional delivery, (Anyanful & Abdulai, 2018).

1.1.2 Theoretical background

The Technological Pedagogical Content Knowledge (TPACK) Model for Technology Integration in Teaching and Learning, promoted by Mishra & Koehler, served as the foundation for this study (2008).

Technological Pedagogical Content Knowledge (TPACK) Model, according to Mishra and Koehler (2008), is a way of thinking about the knowledge teachers require, such as computer

literacy and subject matter, in order to effectively integrate technology into their classrooms. The advocates further asserted that teachers who use ICT in the best possible ways are inventive, adaptable, and flexible in how they manage the limitations, affordances, and interactions included in the TPACK framework.

According to Mishra and Koehler (2006), TPACK, which combines technology, pedagogy, and content as well as their interrelationships, is at the core of effective teaching. They go on to say that TPACK has seven components. Three of the seven make up the basic elements; they are: technological knowledge, instructional knowledge, and content knowledge (TK). Following from this, it was concluded that the interplay of the three components leads to the development of pedagogical content knowledge (PCK), technological content knowledge (TCK), technological pedagogical knowledge (TPK), and technological pedagogical content knowledge (TPCK).

The TPACK framework is pertinent to this research because it offers teachers a useful foundation for thinking about how to incorporate ICT into the classroom. Moreover, TPACK can be used to gauge a teacher's proficiency in ICT, subject-matter knowledge, and pedagogy, which may have an impact on the professional development opportunities available to instructors of all levels of expertise. Also, TPACK helps to reduce the inclination among teachers to regard technology as though it were unrelated to teaching and learning. As a result, professional development for teachers should no longer focus solely on teaching instructors how to use a particular piece of software or tool, but also how to integrate it into the classroom. Thus, teachers would be more confident in the utilization of ICT in a classroom setting and would adopt a more positive attitude.

1.1.3Conceptual background

Different scholars have conceptualized ICT but there is no single, universal definition of ICT; although it is generally understood to refer to all hardware, software, networking elements, applications, and systems that collectively enable people and organizations—that is, companies, nonprofits, governments, and criminal organizations—to interact in the global marketplace. While computers and computer networks are frequently referred to as "ICT," the term also refers to other information dissemination technologies like television and telephones (Chandler, Daniel, Munday & Rod, 2012).

Today's education industry makes extensive use of information and communication technology (ICT), which includes computers, the Internet, and electronic delivery systems including radios, televisions, and projectors among others. According to Kent and Facer (2004), the home serves as a complementing location for regular engagement in a smaller range of computer activities, whereas school is an important venue in which kids engage in a wide variety of computer activities.

The World Bank defines ICT as the hardware, software, network, and media used for information gathering, storing, processing, transmitting, and presenting. This helps with knowledge construction, issue solving, and idea communication through desktop publishing, CD-ROMs, databases, and videos that enable the exposition of concepts (WCEA, 2002).

On the other hand, a teacher's attitude describes how they feel and behave toward a particular idea. It encompasses one's thoughts and perception of things, or it refers to a learned propensity to react a certain manner to something or someone.

1.1.4 Contextual Background

The Uganda National Council of Science and Technology (UNCST) launched the nation's ICT policy formulation process in 1998 (Torach, Okello and Amuriach, 2006). The UNCST presented

a draft national ICT policy framework to the cabinet in 2002; five years later, and it was ratified the following year. Uganda would need to adopt the goal of lifelong education for all, according to the policy framework paper (Farrell, 2007).

Uganda's development strategy solely depends on ICT and the application of significant ICT tools to serve as a suitable driver and facilitator to advance the nation's economy and educational system (Ssewanyana & Busler, 2007). ICT plays a significant role in preparing students for the job, hence the development of ICT policies in education is considered as being necessary, even though they are integrated into the national ICT policies (Were, Rubagiza, Denley& Sutherland, 2007).

Therefore, ICT has the ability to accelerate the acquisition of applicable life skills that support the development process in the current economic and informational order if it is correctly integrated into education.

Researchers claim that teachers' interconnected belief systems have a significant mediating effect on how they integrate ICT into classroom instruction in Uganda, where ICT integration in teaching is progressing slowly (Ertmer, 1999). The character of classroom instruction and a teacher's professional life are profoundly influenced by their attitude. All things considered, it was important to examine how ICT was used in the classroom and how instructors' attitudes were. In order to critically evaluate teachers' views toward the use of ICT in the teaching process at a few selected secondary schools in the Sheema area, the researcher was compelled to conduct this study.

1.2 Statement of the Problem

The use of information and communication technology (ICT) in the classroom is essential for giving students possibilities because it allows for the improvement of e-knowledge and the reinvention of e-knowledge processes, which enables students to understand how to operate in the

information age, (Wagner, &Kozma, 2003). Likewise, for decades, research has focused on how to use ICT effectively in educational institutions (Ertmer, 1999, 2005; Loveless, 2004). In addition to the shutdown of schools for a two-year period in Uganda, this has worsened during the global COVID-19 pandemic, which has had detrimental consequences on the education sector. As a backup plan for students' on-going education, the Ministry of Education and Sports urged educational institutions to implement online teaching and learning.

The government of Uganda has implemented a number of policies through the ministry of education and sports to advance and improve the use of ICT in teaching and learning. These tactics include requiring ICT education in secondary schools, building and outfitting computer labs in secondary schools, and connecting these labs to dependable internet, (UCC Report, July 2014).

Although numerous initiatives have been made to encourage the use of ICT in the teaching and learning process, the majority of secondary schools in the Sheema area still endure a slow rate of ICT integration. This can be demonstrated by using conventional teaching techniques like chalkboards and by giving out handwritten test results to the pupils. Although there are many studies in the field of ICT, relatively little empirical study has been done to look at this problem from the perspective of instructors. Since there is no known study has been done to analyze teachers' attitudes and the incorporation of ICT in the teaching process, therefore, the research study set out to fill this gap by employing in-depth case studies.

1.3 Purpose of the study

This study aimed at investigating into the influence of teachers' attitude and integration of ICT in the teaching process: a case of selected secondary schools in Sheema District.

1.4 Specific objectives of the Study

i) To examine the level of integration of ICT in the teaching process in selected secondary schools in Sheema District.

ii) To find out the challenges of teachers' attitude on the integration of ICT in the teaching process in selected secondary schools in Sheema District.

iii) To establish the strategies to enhance teachers' attitude on the integration of ICT in teaching process in selected secondary schools in Sheema District.

1.5 Research Questions

i) What is the level of integration of ICT in the teaching process in selected secondary schools in Sheema district?

ii) What are the challenges of teachers' attitude on the integration of ICT in teaching process in selected secondary schools in Sheema district?

iii) What are the strategies to enhance teachers' attitude on the integration of ICT in teaching process selected secondary schools in Sheema district?

1.6 Research Hypothesis

H_0: There is no significant relationship between teachers' attitude and integration of ICT in the teaching process in selected secondary schools in Sheema district.

H_1: There is a positive significant relationship between teachers' attitude and integration of ICT in the teaching process in selected secondary schools in Sheema district

1.7 Scope of the study

1.7.1 Content scope

The study was limited to examining teachers' attitude and integration of ICT in the teaching process in selected secondary schools in Sheema District. In particular, the study concentrated on specific research objectives. These were; to examine the level of integration of ICT in the teaching process, challenges of teachers' attitude on the integration of ICT in teaching process and the strategies to enhance teachers' attitude on the integration of ICT in selected secondary schools in Sheema district.

1.7.2 Geographical scope

Sheema District is found in the Ankole Sub-Region of Western Uganda. The district has 12 sub counties, 60 Parishes and 598 villages. The district has over 322 schools currently with 111 Nursery Schools, 181 Primary Schools, 27 Secondary Schools and 3 Tertiary Schools. The study was carried out in selected secondary schools in Sheema district.

1.7.3 Time Scope

The study used literature of 17 years (2003 and 2020). This time scope was chosen because it was when the Ministry of ICT was created in Uganda and therefore gave more information relating to ICT and its integration in secondary schools, most especially in Sheema District.

1.8 Significance of the Study

The findings of the study might be of great benefit to the government in understanding the influence of teachers' attitude on the integration of ICT in teaching process. Hence set a mechanism for adjusting these challenges that has been uncovered by this study.

The research findings may also guide policy-makers and investors to make well-informed decisions about policies and investment in ICT as regards education at the secondary level by understanding the perceptions of teachers in line with the utilization of ICT in school administration and teaching process.

The findings of this study might inspire and enable the teachers in secondary schools to not only appreciate ICT integration in teaching processes, but also acquire the ability to even use them in their daily lives. It was also envisaged that the findings of this study may facilitate the empowerment of the teacher for a more active role in the integration of ICT in teaching. Subsequently, the increased role of the teacher in the process may in turn strengthen the ICT integration in teaching and hence translate to better academic performance in the country.

The study may be of great importance to the researcher in knowledge acquisition and attainment of a Master's Award. Also, it would be a source of reference for further inquiry by future researchers who might be interested in similar areas of interest with the aim of building more knowledge about ICT integration in the teaching process.

Finally, the study might be of great significance to Kabale University through publication of the study findings to uncover the mechanism for enhancing teachers' attitude on the integration of ICT in the teaching processes hence increase its ranking on the list of institutions using innovation and research to bring change in the country.

1.9 Definition of Key terms

Teachers: In the current study, refer to the teaching personnel teaching at secondary level. In this study it is delimited to the teachers in Sheema District.

Attitude: This is the reaction of the teachers about the integration of ICT in teaching process. In the present study, attitude towards ICT comprises the reactions of teachers about the significance of ICT in education process.

Competence: Teachers' aptitude to use ICT in teaching process and school management.

Perception: Teachers' opinion and observations about ICT to use in teaching process.

Satisfaction: The fulfilment derived from embracing technology in the process of teaching and learning by the teacher

Level: The rate at which ICT has been applied in teaching process.

Integration: It is the process of incorporation, assimilation or combination of ICT in the teaching process by teachers/instructors and school management.

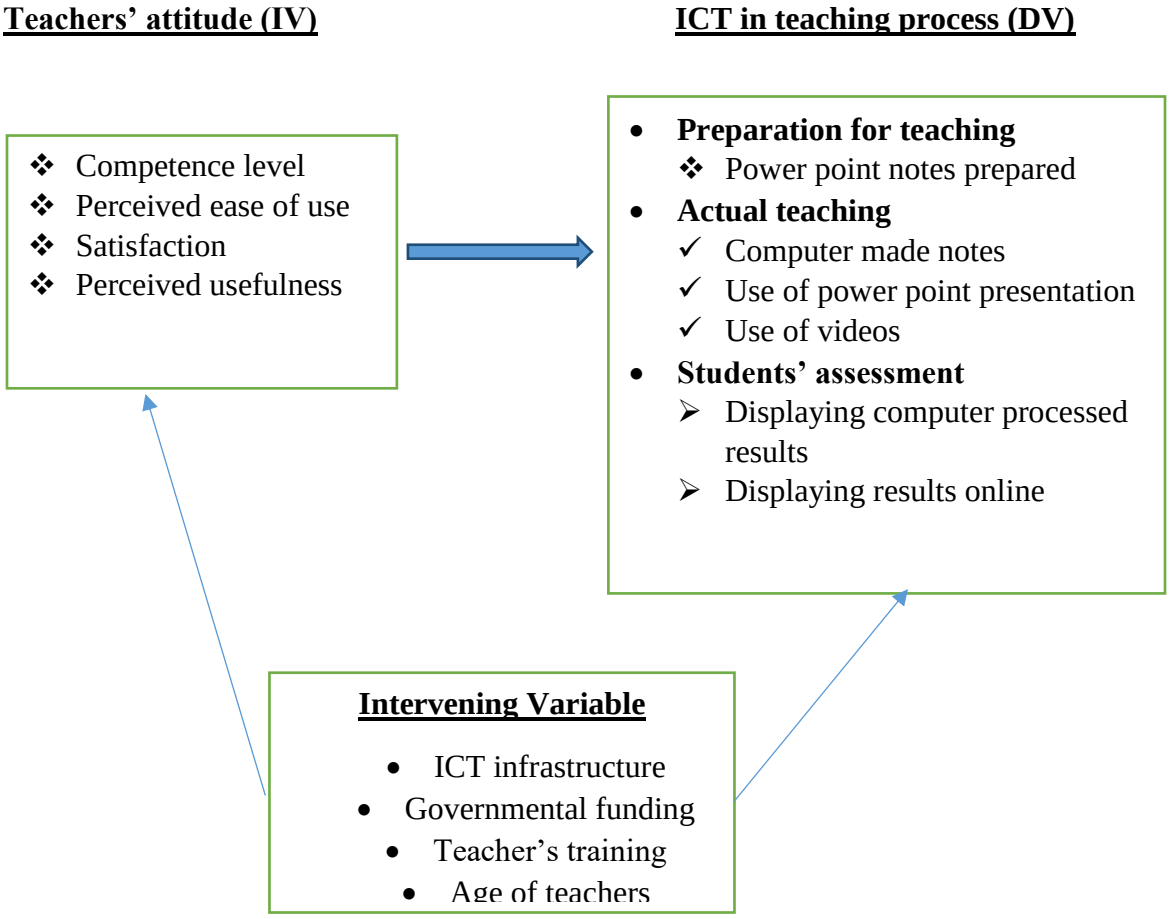
ICT: Information and communication technology encompasses the different set of technological tools and resources adopted by an educator/teacher to transmit, store, create, share or exchange information with the learners. This can be applied in the preparation for teaching, actual teaching in the classroom and as well managing the assessment record through e-record keeping and management.

Teaching: Teaching is primarily a process which involves planning, implementation, evaluation and revision for the purpose of learning and development of student's potentials and skills using ICT as a method of teaching and learning.

1.10 Conceptual framework

This is the diagrammatic representation of the different variables of the current study on the influence of teachers' attitude on integration of ICT in teaching process in selected secondary schools in Sheema District.

Figure 1.1 below has the link between each variable.



Source: Adopted from Technological pedagogical content knowledge (TPACK) model (Mishra and Koehler, 2008) and modified by researcher.

Figure 1.1: Conceptual framework between the influence of teachers' attitude and integration of ICT in the teaching process

In this study, teachers' attitude was conceived as an independent variable and was looked at in terms of the teachers' competence level, perceived usefulness, satisfaction as well as perceived ease of use of ICT tools. The integration of ICT was perceived as a dependent variable and was looked at in terms of; level of application in preparation for teaching, in actual teaching as well its application students' assessment. The intervening variables act as the central strategies to be considered in enhancing teachers' attitude and integration of ICT in the teaching process. In this study it was considered to be ICT infrastructure, government funding and teacher's training. It was believed that when teachers have positive attitude towards ICT, it will be successfully integrated into the teaching process. Also, it was assumed that if there was proper infrastructure for ICT in a school, government funding to install them and also teachers are trained to have the required skills then teachers' attitude towards integration of ICT in teaching process would be successful.

CHAPTER TWO

LITERATURE REVIEW

2.0 Introduction

This chapter presents the theoretical framework that guided the study. Literature review was done in line with the study objectives, methodology used and the gaps found in the literature regarding the level of integration of ICT in the teaching; the challenges of teachers' attitude on the integration of ICT in teaching process and the strategies to enhance teachers' attitude on the integration of ICT in selected secondary schools in Sheema district.

2.1 Theoretical review

The Technological Pedagogical Content Knowledge (TPACK) model served as the foundation for this investigation. Technological pedagogical content knowledge (TPACK) is a way of thinking about the information teachers require, such as computer literacy and subject matter, in order to integrate technology into their classrooms effectively, according to Mishra and Koehler (2008). The advocates further assert that teachers who use ICT in the best possible ways are inventive, adaptable, and flexible in how they manage the limitations, affordances, and interactions included in the TPACK framework. According to Mishra and Koehler (2006), TPACK, which combines technology, pedagogy, and content as well as their interactions with one another, is at the core of effective teaching.

They also claim that TPACK has seven components. Three of the seven make up the basic elements; they are: technological knowledge, instructional knowledge, and content knowledge (TK). Following from this, it was concluded that the interplay of the three components leads to the development of pedagogical content knowledge (PCK), technological content knowledge (TCK),

technological pedagogical knowledge (TPK), and technological pedagogical content knowledge (TPCK). The seven elements are integrated to provide technological pedagogical and content knowledge (TPACK) (Koehler and Mishra, 2007–2008).

Koehler and Mishra (2008) expanded on this concept by 'include context', claiming that context greatly influences how technology might be employed in educational practice. Despite the fact that most studies on TPACK neglect context in terms of how it may be applied and understood in practice, Koh, Chai, and Tay (2014) note that this makes the framework applicable in a variety of scenarios. Figure 2.1 depicts the TPACK framework, which acknowledges that educators are functioning in this complex environment and takes the relationships between the three categories, (TK, PK, and CK) into account.

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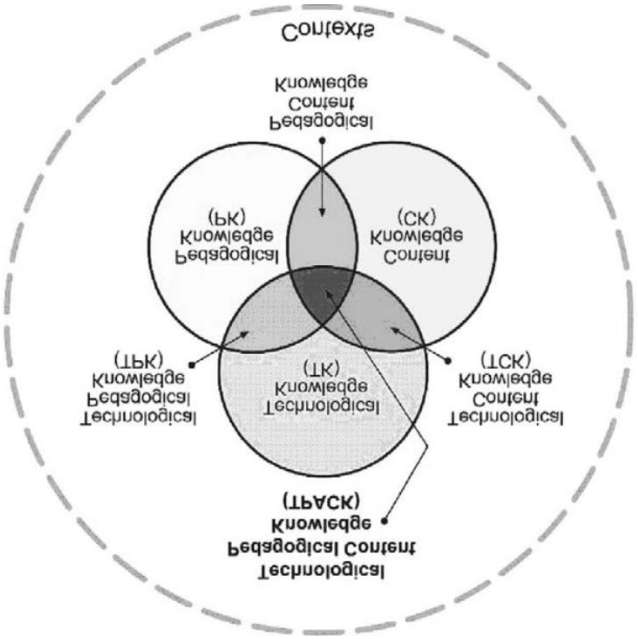

Figure 2.1: TPACK Framework by Koehler and Mishra (2008)

According to the TPACK framework, technological tools including software, hardware, and apps should be used to lead and train students towards a better and more complete comprehension of

subject material. This is accomplished by combining and recombining the three categories of knowledge—CK, PK, and TK—in various ways inside the TPACK framework. While pedagogical content knowledge (PCK) describes interactions and relationships between pedagogical practices and particular learning objectives, technological pedagogical knowledge (TPK) describes interactions and relationships between technological tools and particular pedagogical practices. Technological content knowledge (TCK) describes relationships and interactions among technological tools and learning objectives.

The TPACK framework was important for this study because it provided a useful foundation for thinking about how teachers' attitudes can affect how ICT is integrated into the classroom. Moreover, TPACK can be used to gauge an instructor's proficiency with ICT, subject-matter knowledge, and pedagogy, which may have an impact on the kind of professional development and training programmes available to teachers at all levels.

Also, TPACK helps reduce the inclination among teachers to regard technology as though it were unrelated to teaching and learning. As a result, professional development for teachers should no longer focus solely on teaching instructors how to use a particular piece of software or tool, but also how to integrate it into the classroom. By doing this, instructors would develop their ICT application skills and, as a result, their attitude toward using technology in the classroom.

2.2 Review of related literature

2.2.1 Level of integration of ICT in the teaching process

ICT plays a significant part in helping students access digital content quickly and effectively. ICT is utilized as a tool for students to explore learning topics, solve difficulties, and propose answers to the problems in the learning process, as stated by Brush, Glazewski, and Hew (2008). In this

instance, ICT facilitates the acquisition of knowledge and aids in the comprehension of academic concepts while involving students in ICT applications.

In their study, Chai, Koh, and Tsai (2010) discovered that the use of ICT fosters a creative learning environment, which helps students gain fresh insight into their subject areas. ICT offers more original answers to various learning-related questions. E-books, for instance, are frequently utilized in reading aloud exercises in reading classes. Students can easily access all different types of texts via computers, laptops, personal digital assistants (PDAs), or iPads, from basic to intermediate levels. More specifically, these e-books might include reading software that includes a reading-aloud interface, activities for enhancing vocabulary, games for improving reading comprehension and vocabulary acquisition, and more.

According to Castro Sanchez and Aleman (2011), students are now more frequently engaged in the meaningful use of computers and therefore ICT helps to support student-centred and self-directed learning. They build new knowledge through accessing, selecting, organizing, and interpreting information and data. Based on learning through ICT, students are more capable of using information and data from various sources, and also to critically assess the quality of the learning materials.

Castro Sánchez and Alemán, (2011) conducted a study about teachers' opinion on the use of ICT to assess attendance-based teaching. In order to carry out this study, it was necessary to design a questionnaire to collect data among all in-service teachers with access to the university virtual campus. The findings show that respondents keep an open mind on incorporating ICT tools into their daily practices; on that point, this research has significantly contributed to the educational institution by providing accurate information about ICT use. The findings concluded that ICT assists in transforming a teaching environment into a learner-centred one.

According to Koc (2005), ICT encourages collaborative learning in a distant learning setting, allowing students to collaborate and communicate from any location at any time. For instance, a teleconferencing classroom could invite students to congregate concurrently for a topic debate from all around the world. Students might have the chance to develop notions, examine ideas, and assess issues. Together with learning together, students also share a variety of learning experiences with one another in order to express themselves and think back on what they have learned.

ICT provides greater chances to improve critical (higher-order) thinking abilities. ICT encourages students to concentrate on more challenging ideas rather than less important chores because it is based on a constructive learning approach (Levin & Wadmany, 2006). According to McMahon's study from 2009, there are statistically significant associations between using ICT while learning and developing critical thinking abilities. More time spent in an ICT setting can help pupils develop stronger critical thinking abilities. Therefore, it is strongly advocated that schools incorporate technology into all areas of instruction and at all academic levels. Students are able to use technology in these situations to reach greater levels of cognition within particular learning environments.

ICT, according to Lowther *et al.* (2008), enhances the quality of instruction and learning. He continues by stating that autonomy, capacity, and creativity are three crucial qualities required to produce high-quality teaching and learning with ICT.

When students utilize ICT autonomously, they take charge of their education. They improve their capacity for functioning both independently and together in this way. Instructors may also permit students to work in groups or with classmates to complete specific tasks. The students have additional opportunities through collaborative learning using ICT to add new knowledge to their prior knowledge and gain the confidence to take risks and learn from their mistakes. Moreover,

Serhan (2009) came to the conclusion that ICT promotes autonomy by enabling teachers to produce their own content, giving them more control over course content than is possible in a traditional classroom setting.

When it comes to competence, students can grow the ability to apply and transfer knowledge while using new technology with efficiency and effectiveness as they feel more confident in their learning processes. Students might be asked to practice their pronunciation using an online audio dictionary in a communication skills lesson, for instance. Kids must learn the definitions and use examples of new words in addition to hearing the native pronunciation from the dictionary. Students must next record their own pronunciation and give instances of how to utilize the new word in a sentence. As a result, the entire educational process enhances pupils' capacity for learning and increases their knowledge base.

Moreover, pupils' creativity can be improved by using ICT. Students might learn about new multimedia tools and produce content in the popular media forms they are exposed to through games (Gee 2007, 2011), CDs, and television. The use of ICT can enhance the quality of teaching and learning by combining student autonomy, aptitude, and creativity.

In a 2007 study, Tella, Toyobo, Adika, and Adeyinka investigated the usage of ICT by secondary school teachers in Nigeria. The study also examined the effects of ICT use growing in schools. A survey of 700 instructors was used to gather data. The study's findings demonstrated that the majority of teachers thought ICT was very beneficial and made teaching and learning simpler. The study also showed that policies for professional development should support ICT-related teaching models, particularly those that motivate both teachers and students to participate actively in lessons. The study also showed that the pedagogy supporting the use of ICTs for teaching should receive a lot of attention, (Tella, Toyobo, Adika& Adeyinka, 2007).

Using a Research Collaboration of educational institutions in the UK and Africa (Ghana, Rwanda, South Africa, Tanzania), Haddad and Draxler (2002) investigated the reasons behind teachers' usage of ICT in the classroom. The study identified two primary factors that influence teachers' use of ICT in the classroom: (1) teachers believe that their own use of computers benefits their students, and (2) teachers believe that students benefit from using computers themselves by gaining self-awareness, motivation, and confidence. Based on this, Thijs *et al.* (2001) contend that using technology to motivate students fosters a learner-centred environment. This is accomplished by fusing text, music, colour, and moving images to enhance the content for students' easier learning (Thijs *et al...*, 2001).

The following factors, according to Hepp, Hinostroza, Laval, and Rehbein (2004), support the use of ICTs in education:

Because ICTs are the most important tools for processing information, the new generation must be proficient in using them, should develop the essential skills, and as a result, must have access to computers and networks during their school years.

ICTs should be fundamental management tools at all levels of an educational system, from classrooms to government ministries, because schools are knowledge-handling institutions.

c) The pursuit of quality learning: To increase students' lifelong learning abilities and habits, schools should drastically alter their current teaching strategies and instructional materials.

Also, according to Kozma and Anderson (2002), the introduction of new curricula based on real-world issues is another way that ICTs are changing schools and classrooms. ICTs can give students and teachers greater opportunity for feedback and reflection by offering scaffolds and tools to improve learning. Additionally, ICTs offer chances to create regional and international

communities including students, educators, parents, working scientists, and other interested parties. ICTs can play pedagogical, cultural, social, professional, and administrative functions in the educational system, according to Hepp, Hinostroza, Laval, and Rehbein, (2004).

a) Pedagogical Tool Role: ICTs offer a fresh framework that can promote the revision and enhancement of instructional strategies including project-based, collaborative, and self-paced learning.

b) Cultural, social, and professional roles: Students, teachers, administrators, and parents can all benefit from the vast array of information sources and services that are currently made available to them via the Internet and Compact Disc-based content. This is how ICTs can effectively fulfill their cultural, social, and professional roles.

c) Administrative Roles: ICTs have significant administrative responsibilities to play in making school administration less onerous and more connected to the official information flow concerning students, curricula, teachers, budgets, and activities through the information pipelines of the educational system.

ICTs are utilized to enhance the delivery of and access to education, according to the following arguments made by Kozma (2005) in favour of their usage in education. By raising the effectiveness with which teaching is delivered, they can raise the educational margin, although this does not necessarily require significant change. ICTs are also the main emphasis of education. Students are better equipped for jobs that increasingly include the usage of ICTs by developing their ICT abilities. ICTs can be utilized to enhance student comprehension, raise the standard of instruction, and hence boost the economic effect of education. ICTs aid in the production of

knowledge. Technology, technical innovation, and knowledge exchange can help revolutionize the educational system and promote social and economic development.

Constructivism is supported by the use of ICT in teaching and learning. Constructivist teaching methods are receiving a lot of attention in today's educational system. The fundamental tenet of constructivism is that students create and acquire their own knowledge on their own. Instead of being viewed as only passive information consumers, learners are recognized as participating actively in their education (Duffy & Cunningham in Jonassen, 1996). In real life, this means that students gain knowledge through engaging in activities and then reflecting on those experiences. The constructivism method states that learning occurs in a social context and that children create their own knowledge.

Koc (2005) argues that using ICT enables students to communicate, share, and work collaboratively anywhere, any time. For instance, a teleconferencing classroom could invite students around the world to gather together simultaneously for a topic discussion. They may have the opportunity to analyze problems and explore ideas as well as to develop concepts. They may further evaluate ICT learning solutions. Students not only acquire knowledge together, but also share diverse learning experiences from one another in order to express themselves and reflect on their learning.

Technology can assist teachers by evaluating students' learning in terms of their performance in the classroom, claims Marina (2015). ICT is increasingly frequently used in assessments where digital tools are used to help create assessment activities for pupils. It facilitates the execution of evaluation tasks. He claims that ICT can give students marks or feedback in addition to aiding in the creation or distribution of instructional materials. In order to better support teachers, students,

and other stakeholders, schools must strengthen their commitment to developing better assessment practices (Marina, 2015).

In a study he conducted on e-Assessment, Geoffrey (2011) found that a variety of technological tools can be used to complete the ICT-based evaluation. These gadgets include laptops, desktop computers, mobile phones, iPads, etc. ICT-based assessments can use a variety of forms, including text, videos, photos, and sounds. These contemporary technologies allow teachers to construct assessments and communicate these assignments to the pupils for whom they are intended. Next, based on the results of the evaluation, the teacher can give the pupils their grades.

In a related study, Geoffrey (2011) adds that ICT is beneficial in assessing the students' reactions to the provided digital activity. ICT aids in more than just analysis.

Computer-assisted assessment (CAA) aids in evaluating students' academic progress and performance. It includes all assessment types, whether formative or summative, and is then communicated with the aid of these cutting-edge technologies. Schoen and Keegan (2016) go on to say that CAA produces better outcomes for students and would also engage them more creatively, leading to an increase in happiness (Schoen and Keegan, 2016). As a result, computer-based evaluation aids in grading and logging students' grades.

According to Khoshsima and Toroujeni (2017), technology has recently advanced to the point where computer adaptive testing is used, greatly enhancing the testing process. He notes that while a student is required to answer questions, the technology can change the difficulty of the questions. The system evaluates how well a student responds to the questions and how many errors the student makes; depending on that idea, the other questions are modified. The software will return the

student to the earlier questions if they keep making errors when responding to the questions (Khoshsima and Toroujeni, 2017).

ICT, according to Majid (2020), is crucial to conducting an online evaluation. When a teacher requires information about a piece of content, online assessment is typically the next step. An instructor sets up a questionnaire for the opponent to fill out before the assessment is done online. With the use of cutting-edge technology, instructors can easily create an online test and receive the results of that test online.

2.2.2 The challenges of teachers' attitude on the integration of ICT in teaching process

In a setting where teachers' attitudes are generally positive, the researcher affirms that the use of information and communication technology (ICT) is crucial to the teaching-learning process. The analysis of pertinent literature showed that instructors' attitudes regarding using ICTs in the classroom have a significant impact on whether educational objectives are met. Regarding this, it was discovered that teachers had a good attitude toward ICT. While there was no gender difference, there were differences in terms of age, home computer ownership, and computer expertise (Ndibelema, 2014). The opinion of student teachers regarding the use of ICT in the teaching process was positive, and there was no discernible impact of their attitudes on their academic achievement. It is therefore important to foster positive attitudes toward the use of ICT among student teachers so that they can stay current with new technologies and later integrate them as required in the workplace, (Agrawal & Ahuja, 2013). The current study was unusual in that it concentrated on teachers' attitudes rather than those of student teachers. Understanding the instructors' perceptions and belief systems on the integration of ICT in the teaching process was made easier by doing this study in Sheema.

Despite the obstacles to its integration in public secondary schools, ICT has created a new or powerful learning environment where knowledge can be transmitted to the student for improving knowledge and skills in their self-directed way. As a result, the level of teachers' attitude towards ICT in teaching and learning was positive, (Semerci& Aydin, 2016). Many instructors and student teachers do not have the proper atmosphere for using computers or ICT in their community, so while using ICT in the classroom, some are exhibiting good attitudes and others are expressing negative attitudes depending on where they are located. The study's participants' attitudes toward various localities' schools showed a substantial variance, according to the researcher (Ganesan & Krishnakumar, 2016). Sheema district as a different district and also different from the context of the study need to examine these empirically to ascertain the teachers' attitude in reference to ICT integration in secondary schools and in teaching process.

Also, a study by Mahajan (2016) found that there was no statistically significant difference between males and females in their attitudes on the use of technology in the classroom and that only 25% of instructors expressed a positive attitude toward it. This indicates that both men and women have a negative attitude toward ICT integration in the teaching process. This was measured in the Sheema district context in order to compare the variations by gender and school. There are no changes in teacher candidates' attitudes toward using ICT in the classroom based on their location or gender (Dixit & Kaur, 2015). Furthermore, just 25% of teachers reported having a good attitude about the use of technology in the classroom, according to a study by Mahajan (2016). There was also no statistically significant difference between males and females in their attitudes toward it. This suggests that the integration of ICT into teaching is unpopular among both men and women. For the purpose of comparing the variances by gender and school, this was assessed in the

context of the Sheema district. Regarding the use of Technology in the classroom, teacher candidates' opinions are unaffected by their location or gender, (Dixit & Kaur, 2015).

Many research have revealed that there are numerous requirements for the use of ICT in schools at the student, teacher, school, and system levels in institutionalized education (Petko and Döbeli-Honegger, 2011). Only a few studies, nevertheless, have concentrated on the tendencies in teachers' attitudes and views regarding the use of technology in the classroom. For instance, Prestridge (2012) utilizes qualitative methods (interview research) and principle component analysis (PCA) to separate four teacher groups based on how they use ICT in primary education. She hypothesizes that each teacher group's usage of ICT is motivated by a certain set of beliefs. According to the findings of Prestridge's study, the majority of teachers in four Catholic primary schools in Queensland, Australia, hold the opinion that ICT can improve learning, although they are unsure of how (Prestridge, 2012: 454). These teachers have a fundamental understanding of teaching and learning with ICT, which Prestridge refers to as "foundational" ICT users. Teachers in the "developing ICT practices" group "might be regarded as believing in the use of ICT as a tool to attain set curriculum outcomes with teacher-directed practices," according to the study. Although not yet implemented, there is a clear intention to make ICT use easier as an integrated component of multidisciplinary learner inquiry (Prestridge, 2012: 455). Instructors whose use of ICT might be characterized as skill-based are aware of how crucial ICT skills will be in the future for engaging in society, especially the labour market. They are working to make sure that their pupils have the ICT skills necessary to function well in the future while also acknowledging the widespread use of technology in society. The use of ICT as a tool to improve learning is less of an emphasis than its utility (Prestridge, 2012: 456). Prestridge, on the other hand, considered teachers who completed rather sophisticated digital activities in their classrooms to have adopted digital

pedagogical techniques and, as a result, displayed "strong ideas about both the value of ICT as a learning instrument and its relevancy to working and social life" (Prestridge, 2012: 457). The majority of teachers in Prestridge's survey belonged to the first group, which included fundamental ICT users who concur that ICT may improve learning in schools. The current researcher is interested in understanding not only the theoretical side of ICT functions, but also how users behave in an educational setting to encourage learning and the growth of ICT potential and abilities in both teachers and students.

Christensen and Knezek (2002) separated fundamental attitudes and beliefs of instructors at various phases of embracing digital technology using a similar factor analysis approach. In their study, educators who had a basic understanding of technology (or "consciousness") ranked themselves lower in terms of how much they enjoyed using computers, avoided them, used e-mail, were productive, and perceived them generally. Respondents assessed their own level of anxiety toward computers and their level of disapproval of the effects of computers as being higher. (Christensen &Knezek, 2002: 13 f). Yet, the group of educators at the other end of the categories of computer enjoyment, e-mail, productivity, and semantic perception of computers, the technology adoption scale (stage 6) consistently displayed "the highest mean scores among the six stages of adoption category groupings." Additionally, this group of instructors evaluated their own level of worry, computer avoidance, and disapproval of the effects of computers as the lowest of all the teacher groups (Christensen &Knezek, 2002: 14).

More recently, Mama and Hennessy presented another method for identifying trends in teachers' attitudes and beliefs regarding ICT (2013). They were able to identify four separate teacher groups with diverse opinions about the importance of using ICT in teaching and learning using both qualitative and quantitative metrics. Only one of the four groups was characterized by a negative

belief, whereas three of the four groups displayed rather positive beliefs in this regard. This second group regarded the use of ICT in the classroom as "unnecessary" (Mama & Hennessy, 2013: 383) and felt that it undermined the teacher's authority. Regarding the value of utilizing ICT for education, a similar picture emerges: teachers who disagree with the value of ICT for teaching do not use it for learning. ICT's detractors claim that they just serve to divert pupils from their studies. This is a mindset that needs to be changed so that the teachers are made aware of the benefits of effectively incorporating ICT into the teaching process.

Perceived usefulness (PU), as mentioned above, is generally characterized as the subjective likelihood that employing a certain application system will improve a person's job performance in an organizational setting (Davis et al., 1989: 985). This term is similar to the notion of value used in psychology, where the anticipation value theory aims to explain a person's intention to carry out a particular target behavior, Chen (2010) pointed out. In reality, "value" (defined as the degree to which a person believes that there are benefits to engaging in a specific target activity) has emerged as a useful, albeit occasionally unreliable, predictor of instructors' use of technology (Sang et al., 2011; Teo and Noyes, 2011).

Several academics have demonstrated that perceived utility (or value) directly influences behavioral intention (BI) to use computers in educational contexts, which in turn serves as a useful predictor of actual computer use, (Bertram &Waldrip, 2013). Others, however, only discovered a weak direct relationship between value and technology use in the classroom (Chen, 2010).

Perceived utility (or value), in addition to having a direct impact on behavioral intention, also influences other factors. In this situation, Teo (2009) found that perceived usefulness had a substantial impact on attitudes toward computer usage (ATCU), which serves as a moderator variable between perceived usefulness and behavioral intention. Teo and Noyes (2010) have

demonstrated that this relationship is weaker for pre-service teachers in the UK than it is for their Singaporean counterparts. Additionally, they were able to demonstrate that the tools used to gauge perceived utility in Singapore and the UK are invariant and so appropriate for use in both cultural contexts. Several studies have demonstrated that outside factors like self-efficacy have an impact on perceived usefulness (Teo& Noyes, 2010).

The strategic interventions that the current study attempts to identify in the context of Sheema district will address this mindset among the teachers.

The degree to which a potential user expects the target system to need no effort is referred to as perceived ease of use, or PEU (Davis et al., 1989: 985). In other words, they must have high expectations for how well they will perform their tasks, (Chen, 2010: 34) or a high level of self-efficacy in line with Banduras' social-cognitivist learning theory. In this context, it is important to remember that perceived ease of use, expectation, self-confidence, and self-efficacy pertain to how teachers see their own ability to plan and carry out the necessary actions to achieve certain goals rather than to their actual ICT competencies (Teo, 2009: 304). The terms perceived ease of use, expectation, and self-efficacy are used interchangeably in the sentences that follow.

Self-efficacy, or expectancy, directly influences both the behavioral intention to use computers and the adoption and use of digital technology (Chen, 2010; Hammond et al., 2011). The results in this area are inconsistent, nevertheless. As a matter of fact, some researchers found that, there is little evidence that perceived ease of use has any direct impact on behavioral intention; instead, it may have indirect impacts through perceived usefulness (Teo, 2009). While perceived ease of use "appears to have little direct effects on user acceptability," even meta-analyses in the field came to the conclusion that "teachers are unlikely to embrace a technology merely because it is easy to use" (Hu et al., 2003: 236 f). Hence, it can be said that PU (or value) predicts real computer

use more accurately than perceived ease of use (Sipilä, 2011) Together with the internal components already discussed, a sizable body of research has looked into the relationship between additional individual or contextual background factors and how well teachers use ICT in educational situations. Studies have shown that the corresponding actual skill level/experience and/or training can positively affect either actual technology use or the degree to which teachers believe certain factors are important (Chen, 2010). This is similar to studies focusing on the relevance of self-efficacy as a measure for the expectation of having the appropriate skills to fulfill a task (Ertmeret al., 2006). A considerable body of research, (MacCallum et al., 2014; Sipilä, 2010) has generally proven the usefulness of experience or competence for the incorporation of ICT.

The level of support received (Teo and Noyes, 2011), subjective norms (Kreijnset al., 2013; Pynooet al., 2011), constructivist orientations, and reported enjoyment are other factors that have been demonstrated to positively impact teachers' use of technology (Petko, 2012). The researcher carried out this study to confirm this idea in another setting and compare the results if secondary school teachers' attitudes toward integrating ICT into the teaching process change as a result of perceived enjoyment, subjective norms, constructivist orientation, and level of support.

2.2.3 The strategies to enhance teachers' attitude on the integration of ICT in the teaching process

The development of teaching competencies among teachers at various levels is one of the fundamental aspects of teaching using ICT, (Salimi, Ramezani&Asadi, 2017). The use of ICTs in the classroom needs to be better understood by teachers, both conceptually and practically, in order for them to be able to address challenges like diversity and heterogeneity. The use of ICTs is crucial in developing curricula that meets the demands of both students and society. On the other hand, it also facilitates careful planning, resource management, and ongoing professional

development for instructors from an academic standpoint. The researcher concluded that having well-prepared instructors would help Sheema secondary schools overcome their resistance to integrating ICT.

ICT is thought to be crucial to national development strategies, according to earlier studies. Hence, the development of ICT is not only a need, but also an option, for changing educational systems. Smart schools were created to meet the emerging demands of society, providing a learning-training atmosphere and enhanced administration techniques. One of the products of ICT development, smart schools strive to transform the educational system in a focused and informed way or enhance the current system. Smart schools design was first developed by David Perkins et al. at Harvard University as a novel method for enforcing educational programmes using ICT (Mohajeran et al., 2013).

A "smart school" is considered to be an educational system in which all processes, including management, monitoring, control, and learning that is, learning educational sources, reviewing documents, and dealing with administrative matters as well as communications and the principles underlying their development are predicated on information and communication to enhance the current research-based educational systems (Sanchez *et al.*, 2011). The current researcher asserted that if the same smart school system could be implemented in Sheema secondary schools, there was a projection that this would be a fantastic mechanism to improve teachers' competences and skills, hence lowering the obstacles to integrating ICT in the teaching process.

Smart schools have unquestionable benefits for the development of the educational system, but implementing this strategy has always had some restrictions and issues. One of the most frequent issues with building such schools is the lack of a competent labour force as well as the financial and material resources to provide computer systems and other essential equipment for smart

schools. A significant issue with the current organizational structures in educational systems, according to the findings of previous studies, is culture and ability to use the available methods, environmental factors, and perception of general opinions about this subject. For instance, insufficient information usage culture creates significant issues for the general public, authorities, and instructors when promoting and creating smart schools. The study's modified model showed that if ICT integration in secondary schools could be accomplished, federal funds could be directed toward making this a reality. The researcher also raises concerns about how the ministry has allocated resources to Sheema in order to accomplish this goal, noting that Sheema is no different from other schools around the globe in lamenting a lack of labour, knowledge, funds, and physical resources to incorporate ICT into the educational system, which would affect the necessary change for proper classroom interaction in teaching and learning processes.

Feasibility of Building Smart Schools in Ahvaz High Schools was the name of the survey that Abdolvahabi, *et al.,* (2011) did. They came to the conclusion that high schools were not ready to convert to smart schools, according to managers and administrators. Key Causes of Smart School Failure and Strategies for Its Growth in Mazandaran Province was the title of a study carried out by Mohajeran et al..., (2013). The findings revealed that provincial schools meet the conceptual model's desirable and satisfactory characteristics for smart schools. To construct smart schools, however, there were several challenges to overcome, including a lack of necessary infrastructure and a lack of funding for the creation of appropriate hardware. Furthermore, it was discovered that the growth of the information and communication infrastructure was essential to the readiness of smart schools. The development of smart schools in the Mazandaran province was resuming, but there were many obstacles and issues that needed to be overcome in order for this plan to be implemented successfully. These issues should be resolved via careful planning and allocating

enough time and money. In addition to the findings, the researcher agrees that finance and infrastructure deployment for ICT are essential if secondary schools in the Sheema district are to succeed. Conditions for the rapid development of these institutions should be taken into account in this scenario, (Mohajeran, *et al*., 2013).

Alizad (2012) carried out a study on the qualitative evaluation of education in Tehran's smart schools. The findings revealed that, with the exception of one school, the quality of aims, administration, and organizational position of schools were all desirable. Yet, the degree of instructor quality was generally good. Nevertheless, pupils' usage of technology was generally desirable. The fourth factor—educational initiatives to improve instructors' knowledge—was deemed to be at a favorable level, with the exception of one institution. The learning-training method needs further refinement in all schools, with the exception of one. Lastly, with the exception of one institution, the physical resources and equipment quality was at a desired level. In this regard, it might be said that in order for two thirds of the researched schools to achieve a proper status, their current procedures required to be improved.

The Study of Usage of ICT for Providing Learning Opportunities by Administers of Smart Schools Situated in Tehran was a study carried out by Zaman *et al.* (2010). According to their findings, there was a moderate level of ICT use in smart schools for instructors to create learning opportunities. Moreover, Technology usage was minimal, but teachers were doing an excellent job of fostering positive learning environments. The researcher discovered that Sheema secondary schools must address this in order to properly and effectively integrate ICT into the teaching process.

Assessment of Status of Creation of Smart High Schools in Semnan Province from Viewpoints of Administrators and Lecturers was the title of a study carried out by AfzalKhani and Ghods, (2011).

According to the findings, more efforts were needed to run schools through integrated computer systems, learning and training systems, infrastructure for developing information technology, and integrated computer-based partnerships with other smart schools in order to create a uniform system of smart schools throughout the province. According to the findings, instructors who had received training in integrated management and technology had the necessary capability for developing smart schools.

Yazdani (2011) did additional research on this topic and identified various obstacles to the growth of smart schools, including the following: problems integrating technology and education, a lack of technical and monitoring experts, a lack of relevant online applications, a lack of training, a lack of computers, a lack of teachers with the necessary knowledge and skills, a lack of time and pressure from the curriculum, a lack of access, a problem matching with new educational roles, a lack of financial resources for implementing information technology, Low motivation caused by inadequate training of teachers and pupils, an undertrained labour force, unclear goals when using computers for education, a lack of knowledge and fluency with English, and the absence of a sound scientific model. These obstacles suggested that this study was worth being done at that time since it specifically addressed them by looking for solutions, one of which was training teachers to increase their willingness, competence, and interest in integrating ICT in the teaching process.

The Principles of Smartization and Smart Schools in Malaysia is the title of a descriptive-analytic study carried out by Hedari et al. (2014). The majority of school administrators lacked the necessary skills to put the smartization system in place. Moreover, emphasis was placed on the government's support for the system. All Malaysian schools should have a smartization system by the year 2020. Learners should adopt common educational practices, absorb these ideas in their educational system, and expand their infrastructures in every aspect for more effective learning

(Hedari, et al., 2014). To investigate how teachers in Malaysia's smart schools used ICT in the classroom, Hamid wrote a study titled Teachers' Beliefs and Usage of ICT in Malaysia. The findings revealed that despite managers' favourable views of ICT in education, they did not implement it in their teaching environments. Most of them held that ICT should only be utilized as a tool for education and learning if it could help students communicate their knowledge and comprehension of the material (Madhira, et al. 2011).

In order to better understand the challenges associated with not integrating the use of ICT in classrooms in Sheema secondary schools, the study's objective was to measure this perception of instructors through an in-depth investigation. In conclusion, the researcher believes that teachers in Sheema secondary schools should work to acquire a variety of technological abilities with every chance for training and ICT seminars in order to effectively use ICT strategies and profit from all of their uses. Some of these skills include spreadsheet, database, and word processing proficiency. It's also essential to know how to navigate a website, use email, and make and use electronic presentations. These skills unquestionably depend on having a solid understanding of ICT, including proficiency with computers, mobile devices, the internet, and other ICT technologies. Integration must be done correctly for ICT to be used effectively in education. It is your duty as a teacher to study as much as you can about ICT teaching techniques.

2.3 Summary of Literature

The literature review provided a solid foundation for the study, but it had geographic and content gaps because most of the studies generalized their findings regarding the obstacles to ICT integration in teaching and learning processes across countries, with little research on Uganda and none from Sheema district. However, the study was made more beneficial by the technological pedagogical content knowledge (TPACK) model, which was developed by Mishra and Koehler

(2008). This is because it is preferred that ICT integration with its users be contextualized for proper implementation and meaning for the users. Similar to this, the vast majority of the studies conducted on the usage of ICT are broad in scope, which may lead to broad conclusions. This study was conducted to determine the influence of teachers' attitudes on the integration of ICT in the teaching process in selected secondary schools in the Sheema area in response to these findings.

CHAPTER THREE

METHODOLOGY

3.0 Introduction

The research problem-solving methodology is described in this chapter. The research design, study area, target population, sample size and sampling techniques, data collection methods and tools, instrument validity and reliability, research procedure, ethical issues, data analysis, and presentation were all covered in this chapter.

3.1 Research Design

The study adopted a descriptive cross-sectional survey design which made it possible to combine qualitative and quantitative methods in the analysis. A descriptive cross-sectional survey design is a particular type of design used to study large populations, or areas where the researcher conducts a survey on a large population to generalize on a bigger population, and to learn about the opinions, attitudes, preferences, practices, and concerns of a cross-section of a group of people, and then uses the results to extrapolate to the entire population (Amin, 2005; Creswell, 2003; and McCartney: 2007). The design was chosen because it was thought to be relevant and suitable for the purpose of this study. It also allowed for the collecting of self-report data from samples of predetermined interest at a specific point in time. According to Merriam (2009), Nieuwenhuis (2010), and Lichtman, (2010), the design was suggested for investigations of this kind.

3.2 Area of the study

Sheema district served as the site of the study. Sheema District is a district found in western Uganda's Ankole Sub-Region. There are 12 sub-counties, 60 Parishes, and 598 settlements in the district, 111 Nursery Schools, 181 Primary Schools, 27 Secondary Schools, and 3 Tertiary Schools

make up the district's current total of over 322 schools. The study was conducted in only selected secondary schools in Sheema upon which the findings were generalized. The researcher selected the five schools using Systematic sampling. Every school was listed with a number, but instead of randomly generating numbers, schools were chosen at regular intervals of 5. That is how the researcher came to choose 5 schools out of the 27 schools upon which the sample size and data was collected.

3.3 Target Population

The intended audience consisted of the principals and teachers of the five selected secondary schools in the Sheema district. School administrators were singled out for attention because of their responsibility for overseeing administrative tasks and allocating ICT resources in their institutions. The competence of teachers to implement and utilise ICT in the teaching and learning process was a factor in their selection. According to Krejcie and Morgan, (1970) the study's target group consisted of 250 respondents.

3.4 Sample size and sample determination

The study used a sample size of 152 respondents who were selected from 250 as the total target population. This was calculated using the following methodological formula:

$$S = \frac{NP\,(P)\,(1-P)}{NP-1(B/C)^2 + P\,(1-P)}$$

S= Sample size

NP= Population size

P= Population proportion magnitude yielding the maximum possible sample size

B= Sampling error which is 5% = 0.05

C= Level of confidence at 95%. The standard of confidence used by most researchers is 1.960.

$$S = \frac{NP\,(P)\,(1-P)}{NP\text{-}1(B/C)^2 + P\,(1-P)}$$

$$S = \frac{250\,(0.5)\,(1-0.5)}{250\text{-}1(0.05/1.960)2 + 0.5(1-0.5)}$$

$$\boldsymbol{S} = \frac{250 \text{ X } 0.25}{249(0.00065077) + 0.25}$$

$$S = \frac{62.5}{0.41204173}$$

S= 151. 68

S=152

Table 3.1 Sample size determination and sampling techniques

Sample size per stratum = $\frac{\text{SampleSize}}{\text{TotalPopulation}}$ x StratumSize

N=250

Category	**Target population**	**Sample size**	**Sampling technique**
Teachers	230	140	Simple random sampling
School Administrators (Principals)	20	12	Purposive sampling
Total	**250**	**152**	

3.5 Sampling techniques

In order to draw conclusions about the population, Gay (2000) argues that, sampling is a process that involves selecting a subset of cases. 250 people made up the study's overall target population, and 152 people were randomly chosen from that group. Simple random sampling was also utilized to choose the teachers because it provided them an equal chance of participating in the study when they were chosen at random. The study used purposive sample technique to collect data from the administrator -- meeting them at their convenience and availability to participate and give their in-depth opinion concerning the study.

3.6.0 Data collection methods

3.6.1 Questionnaire method

The study used a questionnaire to gather information from the respondents since it offered them a chance to answer all of the questions and increases their level of knowledge. A form or collection of forms with a number of questions printed on them in a specific order made up the questionnaire. Data from teachers at particular secondary schools in the Sheema district were gathered using this strategy. Respondents have to complete out self-administered questionnaires. This approach was chosen because it is more affordable, especially in areas with a sizable and dispersed population. The responders had enough time with this strategy to provide thoughtful responses.

3.6.2 Interview method

With this method, the interviewer and interviewee interacted face-to-face as the interviewer posed questions and the interviewee responded. An interview guide that was created with the success of the interviews in mind was inspired by the study research questions. The interview method was chosen because it allowed the researcher to gather information directly from the respondents, ensure that the information was accurate, get quick feedback, and probe the respondents to get

enough information from them. The researcher employed this technique in order to find casual factors, identify attitudes, and engage the respondent in a discussion of their points of view. The administrators of a few secondary schools in the Sheema district were subjected to this technique.

3.7.0 Data collection Instruments

The researcher used three instruments for data collection and these included; questionnaire as an instrument, structured interview and document analysis so as to come up with the primary data from the field and secondary data from already published work.

3.7.1 Questionnaire

To ensure a response to specific questions, questionnaire forms were created and circulated. Both structured and unstructured question styles were used in the study. While none of the structured questions were highly full questions written as assertions, they did have defined, direct, and specific queries. The open-ended, non-directive questions were utilized as interview guidelines. The questionnaire also included some closed-ended questions. Short responses were required for the closed-ended questions.

3.7.2 Interview Guide

This tool takes the shape of an interview guide with questions that encouraged respondents to provide responses quickly and simply. By asking a series of structured or semi-structured questions as directed by the research questions and then probing more deeply using open-ended form of questions to obtain additional information, interview guides were used because they are useful way to quickly and directly obtain large amounts of in-depth purposeful data from individuals.

3.7.3 Documentary review

According to Hassan (2023) Documentary analysis, also referred to as document analysis, is a systematic procedure for reviewing or evaluating documents. This method involves a detailed review of the documents to extract themes or patterns relevant to the research topic.

Documents used in this type of analysis were variety of materials such as newspapers, magazines, reports, policy manuals, archival material. This was important in this study because it helped to back up primary data sources to bridge the gaps in the instrument used. Documentary analysis provides valuable insight and a unique perspective on the past, contextualizing the present and providing a baseline for future studies.

3.8 Data Quality Control

3.8.1 Validity

It is the degree to which a study accurately represents a specific notion that the pertinent data that support responses from the interview guide and questionnaires created, Borg and Gall, (2013). In order to obtain valid results, the data collection instruments were carefully examined to make sure they matched the study's variables. In other words, as Amin (2005:285) makes clear, the tools measured what they were intended to assess.

In order to ensure that the items were consistent, pertinent, and clear, supervisors, research professionals, and other students provided consultation. Validity was determined using the Content Validity Index (CVI).

$$CVI = \frac{\text{No of relevant items in the questionnaire}}{\text{Total no of items on the questionnaire}}$$

$$CVI = \frac{27}{28}$$

$$CVI = 0.96$$

This was a high positive validity index. On a more confirmatory level, Polit and Beck (2006)

construed that CVI value of > 0.6, is valid meaning that the instrument collected validdata for the study.

3.8.2 Reliability

The researchers used test-retest reliability method to determine the significance of the co-efficient of stability of the questionnaire at different points in time on the same group of people. This enabled the researchers to ensure that the questionnaires provided were consistent and accurate. The pilot study comprised a total of 15 respondents equivalent to 10% of the sample size of the study. Then after, Cronbach's alpha coefficient was calculated using Statistical Package for Social Sciences (SPSS) version 21 computer programme to determine the internal consistency.

Table 3.2 Reliability Statistics

Cronbach'sAlpha[a]	N of Items
.882	27

When the reliability of the study was scaled up in SPSS, the findings showed a high positive internal consistency of the instrument with Cronbach Alpha at**α=0.882.** According to Tavakol and Dennick (2011) if Cronbach's alpha score obtained $\alpha \geq 0.70$, it is a vivid confirmation that the instrument was reliable to be used in the study.

3.9 Data processing and analysis

This was the process of bringing order, structure and meaning to the data that was collected from the field.

3.9.1 Quantitative data analysis

Data was adjusted and coded after data collection. While editing, data was checked for mistakes and omissions and fixed where appropriate and practical. Data was categorised and then coded, with each item receiving a number before being entered into the computer. The computer was used to produce quantitative findings once the data was entered using the SPSS program, taking into account descriptive analysis, bivariate analysis, and multiple response analysis. To test the hypothesis, the t-test and Pearson correlation coefficient analysis were both used.

3.9.2 Qualitative data Analysis

Interview-based qualitative data was collected and arranged into concepts and themes for a thorough comprehension of the phenomenon's key points of interest. This added to the information gathered through the use of surveys. The researcher's interview guide's findings served as the foundation for testing the qualitative findings. To determine whether the data is trustworthy and accurate, it was examined. Following a critical analysis, the responses of the respondents were recorded and presented in accordance with the questions that the researcher had posed to them. The researcher started by developing open codes (inductive), then grouped and connected them using axial coding, and lastly used selective coding. Building a set of themes entails finding patterns and meaning in the data, naming them, and organizing them in relation to the research's goals.

3.9.3 Display of Data

Both qualitative and quantitative data were presented and examined, as advised by Gamson (2007). The field data was carefully reviewed for clarity, completeness, accuracy, and consistency before being properly edited and categorized. Simple descriptive statistics like frequencies, percentages, averages, and standard deviation were created using tables.

3.10 Considerations of Ethics

Many ethical factors, including the following, were taken into account during the research.

An introduction letter was provided to the researcher by the university. Before the researcher was permitted to conduct interviews, permission had to be requested and secured from the appropriate authorities from several agencies.

Secondly, throughout the research, the researcher sought consent from the respondents for the interviews and where they were not comfortable to be quoted or recorded in the research an agreement was reached. The respondent’s identity was anonymous.

During the study, relative care was taken to make sure that those who acceptedto participate in the study voluntarily provided their information with consent. In this case, the researcher explained to the respondents about the aims and objectives of the study.

3.11 Limitations and de-limitations to the study

The researcher in this study was constrained by some respondents' uncooperative behaviour and reluctance to provide information. However, the researcher overcame this by ensuring the respondents that the survey was exclusively meant for academic purposes and, where appropriate, by providing them with an introductory letter.

The researcher was also constrained by unrelated factors including the respondents' honesty, where some of them might not have provided accurate information, particularly on their attitudes toward the integration of ICT in the teaching process. The researcher helped to mitigate this by urging the respondents to be honest because, if the study's findings were successful and made public, they may aid in their understanding of the advantages of incorporating ICT into the teaching process.

Also, in terms of content analysis, published documents were used to back up the findings and to overcome any lag that may have arose due to dishonesty.

CHAPTER FOUR

DATA PRESENTATION, INTERPRETATION AND DATA ANALYSIS

4.0 Introduction

In this chapter, the researcher looked into the findings of investigating into the influence of teachers' attitude and integration of ICT in the teaching process. A case of selected secondary schools in Sheema District, which have been discussed under the subsequent sessions and sub sections in line with the study objectives.

4.1 Questionnaire return rate

The study's overall sample consisted of 12 respondents who participated in interviews and an additional 140 respondents who completed a standard self-administered questionnaire. The return rate following the study using the questionnaire is shown in the presentation below.

Table 4.1: Showing Questionnaire Return Rate

Categories	**Frequency**	**Percent (%)**
No of questionnaires sampled	140	100
No of questionnaire returned	140	100

Source: Field data (2023)

140 questionnaires were given out to respondents in this study, and 140 of them had a 100% return rate (see Table 4.1 above; n=140). As Mugenda & Mugenda (2003) assert that a response rate of at least 70% is sufficient, this was a sign of a high return rate. The respondent's cooperation and eagerness to participate in the study after being assured of its confidentiality and intent made it

possible to achieve this goal. As a result, there was less wastage and findings from the study were reached.

4.2 Demographic characteristics of respondents

The sex of the respondents was very important to the study. Table 4.2 below presents the statistical values of the different respondents who participated in the study.

Table 4.2 Sex of the respondent

	Frequency	Percent
Male	67	47.9
Female	73	52.1
Total	140	100.0

Source: primary data (2023)

Vividly, table statistic in 4.2 above shows that 47.9% (n=67) were male whereas 52.1% (n=73) were female. In this study, the above results showed that female's attitudes had more influence on the integration of ICT in the teaching process as regards to their male counterparts who have a lesser influence on the integration of ICT in the teaching process in Sheema District.

The participant's age was also crucial to the study. The findings are represented in Table 4.3 below.

Table 4.3 Age of the respondent

	Frequency	Percent
20-35 years	59	42.1
36-40 years	34	24.3
41-45 years	20	14.3
46-50 years	19	13.6
51 years & above	8	5.7
Total	140	100.0

Source: primary data (2023)

According to Table 4.3, out of the 140 respondents who took part in the survey, 42.1% (n=59) are between the ages of 20 and 35. 34 people, or 24.3%, were in the 36–40 year age range. Twenty people, or 14.3% (n=20), were aged 41 to 45. 19.1% (n=19) were between the ages of 46 and 50, while 8.1% (n=8) were between the ages of 51 and above. This clearly demonstrated in the study that the younger respondents had more positive attitudes regarding the integration of ICT in the teaching process in the Sheema area, and it further illuminates the negative attitudes of the older respondents towards this integration. The researcher confirmed that variation in age of teachers influences their attitude in the integration of ICT in teaching processes.

Furthermore, teaching experience of the respondents was sought and table 4.4 below has the details of how they responded.

Table 4.4 Teaching experience of the respondents

	Frequency	Percent
Below 5 years	37	26.4
6-10 years	36	25.7
11+ years	67	47.9
Total	140	100.0

Source: primary data (2023)

The teaching experience of the teachers who took part in the study was evaluated in table 4.4 above. The results showed that 26.4% (n=37) of the population was under the age of five. 25.7% (n=36) of the population are aged 6 to 10 years. Lastly, the higher proportion of teachers with experience of at least 11 years was in the range of 47.9% (n=67). With this, it does imply that the participants' level of teaching experience was sufficient for them to comprehend the necessity of integrating ICT into the instructional procedures in the Sheema District.

Table 4.5 Level of education of the respondent

	Frequency	Percent
Diploma	39	27.9
Bachelors	74	52.9
Post graduate	27	19.3
Total	140	100.0

Source: primary data (2023)

According to the study's findings in Table 4.5 above, the majority of instructors (n=74) had Bachelor's degrees, followed by Diplomas (n=39) at a rate of 27.9% and postgraduate degrees (n=19.3%), respectively. The evidence suggests that Sheema teachers have attained a level of

education that is suitable for encouraging the use of ICT in the teaching process. Hence, if the knowledge is applied, the level of ICT abilities and its application in the instructional process should reflect this.

4.3 Objective 1: The level of integration of ICT in the teaching process

The respondents were asked to what extent they agree with the following statement: What is the level of integration of ICT in the teaching process in selected secondary schools in Sheema district? The findings in Table 4.6 indicated how they responded. Data was collected using the Likert Scale of highly applicable, moderately applicable and not applicable to determine their level of response through descriptive statistics.

Table 4.6 Descriptive Statistics for the level of integration of ICT in the teaching process

	N	Mean	Std. Deviation
Preparation lesson notes	140	2.4071	.71868
Audio/Visual aid	140	2.6071	.61978
PowerPoint Presentation	140	2.7071	.62899
Assessment of student through ICT devices	140	2.8214	.45309
Virtual discussion of projects	140	2.4214	.68978
Illustration using computer image	140	1.7786	.63550
E-record of students bio-data	140	2.5714	.70090
Display of students results in computer	140	2.2643	.75494
Sharing of data with the administration	140	1.9643	.79938
Searching of new English vocabulary	140	1.7429	.71340

Source: Field data (2023)

According to the data in Table 4.6 above, preparation of lesson notes displayed a normal distribution with the M= 2.470, SD= 0.71868, and the amount of ICT integration in the teaching process followed a normal distribution with the variables scoring as follows. The score for audio/visual aid was M= 2.6071, SD= 0.61978, and On the other hand, the PowerPoint presentation provided M=2.7071, SD=0.62899. The study's largest distribution was seen in the assessment of students using ICT devices, with M= 2.8214 and SD= 0.45309. Moreover, virtual project conversation has M= 2.4214, SD= 0.68978, A computer-generated illustration scored M=1.7786, SD=0.63550, and Biodata from pupils' electronic records had M=2.5714, SD=0.70090, and Computer results were displayed with M=2.2643, SD=0.75494, and, The administration was given the statistics, which indicated M=1.9643, SD=0.79938 ,and, finally, Searching of new English vocabulary recorded the lowest normal distribution of the study yielding M= 1.7429, SD= 0.71340. These results eventually enlighten that fact that the level of integration of ICT in selected secondary schools in Sheema district is still at its low regardless of the fact that the majority of these schools assess their students through ICT devices but a recommendable number do not use ICT for simple and yet very important tasks like searching of new English vocabulary, sharing data with the administration in the selected secondary schools in Sheema District.

Objective One: interview questions on level of integration of ICT in the teaching process

Questions	**Concept categorization** **Responses**	**Interpretation**

What are the number of ICT infrastructure in your school?	In my school we have only 4 that are working and used by the IT teachers to help teach the students. For us in our school we have only 2 that is working at the moment but we normally use it to display some lessons if when it is the only option. My school need new ones none is functional but students learn the parts they are able to see but they cannot be used for teaching since it is all down. My school have five but are used for administrative work.	This implies that their schools have ICT facilities in the school premises.
What do you do to encourage teachers to integrate ICT in preparation for teaching?	In my school we have not put much ICT but few that are there are utilised for some few school purposes but not	The responses showed that the schools actually encourage the use of ICT while some do not and others use it only when there is need but not always

	enough to serve as a teaching approach. I do encourage my teachers to use ICT to make their work although many use handwritten work. I don't see the reason since there is no ICT tools to use so encouraging them is a waste of time. For us in our school we make use of what we have. No need to cry for what we are not even sure that will be possible because it will take much time for everyone to get used to using it in order to make teaching effective.	had the most occurrence during the interview
How does your school emphasize the use of ICT in teaching?	It is s future prospect	The informant gave their views and from all indication

	I encourage teachers to show examples to learners from their personal computers as we look forward to get good ICT facilities We don't have so there is no need for it. I encourage teachers to borrow in case they need it. We don't use it because they are not in good conditions.	the rate of schools without ICT infrastructure and limited ICT tools makes the integration ineffective hence few use it while others do not use it in teaching process.

Source: Field data (2023)

Comparatively, the qualitative and quantitative findings all affirmed that there was low level of ICT integration arising from limited ICT tools and infrastructure in the schools.

4.4 Objective 2:The challenges of teachers' attitude on the integration of ICT in teaching process

Also, respondents were asked to rate the challenges of teacher's attitude on the integration of ICT in teaching processes in selected secondary schools in Sheema district**.** Their level of agreement was graded using the scales of more often, often, not often and never presented in Table 4.7 below.

Table 4.7 Descriptive Statistics on the challenges of teachers' attitude on the integration of ICT in the teaching process

	N	Mean	Std. Deviation
Incompetence	140	2.2643	1.02213
Unease to use ICT	140	2.6143	1.07010
Time consuming	140	2.0143	1.07279
Not comfortable with use of ICT	140	1.9500	1.04795
Have no knowledge of ICT to use in planning, actual teaching and assessment	140	2.2643	1.01507
Low skills of ICT	140	2.0857	1.13471
ICT is complex	140	1.8929	.94219
ICT makes student lazy	140	2.7357	1.02213
Use of ICT is a distraction in teaching process	140	1.8714	.98801

Source: primary data (2023)

The results of this study, as shown in Table 4.7, indicated a normal distribution of the frequency with the challenges of teacher attitudesin the integration of ICT in the teaching process in particular secondary schools in the Sheema area. Unease with using ICT had M=2.6143, SD=1.07010, while incompetence had M=2.2643, SD=1.02213. Spending time produced M= 2.0143, SD=1.07279. On the other side, M=1.9500, SD=1.04795, and Not Comfortable with ICT Use Have no ICT knowledge to employ for planning, actual instruction, or assessment (M= 2.2643, SD= 1.01507, When ICT is complicated, M=1.8929, SD=0.94219 is produced, whereas low ICT skills produced M=2.0857, SD=1.13471.

Technology encourages indolence in students came up with the results' highest mean and standard deviation, M=2.7357, SD=1.02213, while Usage of ICT is a Distraction in Teaching had the lowest mean and standard deviation, M=1.8714, SD=0.98801. That being the case, this study's findings clearly show that the majority of teachers in these selected secondary schools in Sheema District were opposed to the idea of integrating ICT into the teaching process because they believed that doing so would lead to students becoming lazy, which would ultimately affect their overall academic performance. Additionally, a sizable portion of these teachers also hold the attitude that using ICT is difficult, denying these students the chance to learn, thus ICT is uneasy to use not giving these students the opportunity to try it out and judge according to how they perform in it also was a challenge associated with teacher attitude in integrating ICT in teaching process in selected secondary schools in Sheema District.

Objective Two: interview question on the challenges of teacher's attitude in the integration of ICT in teaching process

Questions	**Categorization of concepts**	**Interpretation**
What is your teachers' attitude when encouraged to integrate ICT in teaching process?	Some time they are not interested in using the gadgets that are functional although electricity could also be the issue because the ICT systems need constant energy for effective use.	This showed that most of the school administrators reported that teachers find ICT integration as an interruption, not user friendly and makes them not wanting to use it in their teaching process. Their attitude is totally negative in

	Some of the teachers cannot operate the computer and prefer to use manual means of making reports. Some teachers in my school do show interest sometimes but we have less ICT facilities to cater for all of them. Some dodge the classes when it requires using ICT and only wait for IT teachers to help them. Some pretend to be using it when I am at school but in my absence it is never in use.	ICT integration as one states that it distracts the classes and as well not trusted when there is power outage. Hence makes the use complex and uninteresting. Finally, the result from interview confirmed that teachers attitude in using ICT is tricky as some will dodge classes and others doesn't make use of it in the absence of the head teacher.
What ICT tool does your school use conducting students' assessment?	Reports are filled manually by teachers. The ICT tools are not working to handle the load for every teacher so preferring them to	The whole schools reported doing assessment manually as teachers are not willing to set exams on computer and also

	enter the results manually and it is faster than waiting for machine. With no tools that are functional, I can't force the teachers to use ICT but we hope to get one in the future but now we are still operating manually.	grade the assessment using ICT tools. The findings also made it clear that there is limited ICT tools to use for such which makes situation worse.

Source: Field data (2023)

Affirmatively, the findings in qualitative analysis was in confirmation with the quantitative data findings which showed that teacher's attitudes have a negative impact on ICT integration in teaching process. Hence there is need for teacher's change of attitude towards a successful integration of ICT in teaching process as affirmed by the correlation data with a high positive level of significance between teachers' attitude and integration of ICT in teaching process. Also, the schools are tasked to implement ICT infrastructures that can enable the teachers to use them as the qualitative findings confirmed that there are in limited supply and cannot serve all the teachers if it is be integrated for as a pedagogy tool for teaching processes.

4.5 Objective 3: The strategies to enhance teachers' attitude on the integration of ICT in the teaching process

This section aimed at establishing the strategies to enhance teachers' attitude on the integration of ICT in the teaching process in selected secondary schools in Sheema district. In the questionnaire, the respondents were asked to indicate their level of agreement with the following strategies to enhance teachers' attitude on the integration of ICT in the teaching process.

Table 4.8 strategies to enhance teachers' attitude on the integration of ICT in the teaching processand strategies Frequencies

		Responses		Percent of Cases
		N	Percent	
$Strategies[a]	Teacher's training	75	11.8%	53.6%
	Government funding for installation of ICT in schools	54	8.5%	38.6%
	Flexibility of teachers to use ICT	114	17.9%	81.4%
	Awareness and seminars on the benefits of ICT in teaching process	56	8.8%	40.0%
	Mandatory enforcement and supervision during lesson	89	14.0%	63.6%
	Provision of free internet by the schools	47	7.4%	33.6%
	Organize ICT training on new equipment, applications and software before integration	77	12.1%	55.0%
	Creation of well-equipped infrastructure for ICT in schools	124	19.5%	88.6%
Total		636	100.0%	454.3%

a. Dichotomy group tabulated at value 1.

Source: Field data (2023)

Table 4.8 above revealed that 140 respondents answered this question in the case summary of all replies to the items. The 140 respondents checked a total of 636 boxes, or nearly 5 boxes each, indicating how much they agreed with the statement. The construction of a well-equipped infrastructure for ICT in schools received the highest level of agreement, at 88.6% (n=124) case wise, or 19.5% per response rate. 81.4% (n=114) of respondents, who strongly agree that instructors' flexibility in using ICT is one of the techniques to improve teachers' attitudes toward the incorporation of ICT in the educational process, concurred with this statement. More specifically, 63.6% concurred that required enforcement and supervision during lessons are necessary, and 55.0% thought that arranging ICT training on new tools, programmes, and software prior to integration is one strategy per situation. Others contend that teacher education—suggested by 53.6% of respondents (n=75); awareness and seminars on the advantages of ICT in the classroom—suggested by 40.0% of respondents (n=56); government funding of ICT installation in schools—suggested by 38.6% of respondents (n=54); and provision of free internet by the schools—suggested by 33.6% of respondents (n=47)—are other tactics that might improve teachers' attitudes toward ICT integration.

In order to test the null hypothesis that there is no statistically significant correlation between teachers' attitudes and the incorporation of ICT in the teaching process in a subset of secondary schools in the Sheema district, Pearson correlation, one way sample tests, and ANOVA tests were conducted. The results are shown below.

Table 4.9 Correlations statistics of teachers' attitude and integration of ICT in the teaching process

Correlations

		Sharing of data with the administration	Time consuming
Sharing of data with the administration	Pearson Correlation	1	.907**
	Sig. (2-tailed)		.000
	N	140	140
Time consuming	Pearson Correlation	.907**	1
	Sig. (2-tailed)	.000	
	N	140	140

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

Source: primary data (2023)

When "Time consuming (IV) and Sharing of data with the administration (DV)" were associated, Table 4.9 above showed that a high positive linear connection was noticed at r= +0.907. This relationship was quite positive. When the value of this correlation is between 0 and 1, the correlation coefficient can be used to represent positive correlation. A perfect positive correlation has a value of +1. The association between teachers' attitudes and the use of ICT in the classroom in a few secondary schools in the Sheema District is confirmed to be favourable and substantial.

Table 4.10 Hypothesis test summary between teachers' attitude and integration of ICT in the teaching process

5	The distribution of Preparation lesson notes is normal with mean 2.41 and standard deviation 0.72.	One-Sample Kolmogorov-Smirnov Test	.000	Reject the null hypothesis.
6	The distribution of Audio/Visual aid is normal with mean 2.61 and standard deviation 0.62.	One-Sample Kolmogorov-Smirnov Test	.000	Reject the null hypothesis.
7	The distribution of PowerPoint Presentation is normal with mean 2.71 and standard deviation 0.63.	One-Sample Kolmogorov-Smirnov Test	.000	Reject the null hypothesis.
8	The distribution of Assessment of student through ICT devices is normal with mean 2.82 and standard deviation 0.45.	One-Sample Kolmogorov-Smirnov Test	.000	Reject the null hypothesis.
9	The distribution of Virtual discussion of projects is normal with mean 2.42 and standard deviation 0.69.	One-Sample Kolmogorov-Smirnov Test	.000	Reject the null hypothesis.
10	The distribution of Illustration using computer image is normal with mean 1.78 and standard deviation 0.64.	One-Sample Kolmogorov-Smirnov Test	.000	Reject the null hypothesis.
11	The distribution of E-record of students bio-data is normal with mean 2.57 and standard deviation 0.70.	One-Sample Kolmogorov-Smirnov Test	.000	Reject the null hypothesis.
12	The distribution of Display of students results in computer is normal with mean 2.26 and standard deviation 0.75.	One-Sample Kolmogorov-Smirnov Test	.000	Reject the null hypothesis.

Asymptotic significances are displayed. The significance level is .05.

Hypothesis Test Summary

	Null Hypothesis	Test	Sig.	Decision
13	The distribution of Sharing of data with the administration is normal with mean 1.96 and standard deviation 0.80.	One-Sample Kolmogorov-Smirnov Test	.000	Reject the null hypothesis.
14	The distribution of Searching of new English vocabulary is normal with mean 1.74 and standard deviation 0.71.	One-Sample Kolmogorov-Smirnov Test	.000	Reject the null hypothesis.
15	The distribution of Incompetence is normal with mean 2.26 and standard deviation 1.02.	One-Sample Kolmogorov-Smirnov Test	.000	Reject the null hypothesis.
16	The distribution of Unease to use ICT is normal with mean 2.61 and standard deviation 1.07.	One-Sample Kolmogorov-Smirnov Test	.000	Reject the null hypothesis.
17	The distribution of Time consuming is normal with mean 2.01 and standard deviation 1.07.	One-Sample Kolmogorov-Smirnov Test	.000	Reject the null hypothesis.
18	The distribution of Not comfortable with use of ICT is normal with mean 1.95 and standard deviation 1.05.	One-Sample Kolmogorov-Smirnov Test	.000	Reject the null hypothesis.
19	The distribution of Have no knowledge of ICT to use in planning actual teaching and assessment is normal with mean 2.26 and standard deviation 1.02.	One-Sample Kolmogorov-Smirnov Test	.000	Reject the null hypothesis.
20	The distribution of Low skills of ICT is normal with mean 2.09 and standard deviation 1.13.	One-Sample Kolmogorov-Smirnov Test	.000	Reject the null hypothesis.
21	The distribution of ICT is complex is normal with mean 1.89 and standard deviation 0.94.	One-Sample Kolmogorov-Smirnov Test	.000	Reject the null hypothesis.
22	The distribution of ICT makes student lazy is normal with mean 2.74 and standard deviation 1.02.	One-Sample Kolmogorov-Smirnov Test	.000	Reject the null hypothesis.

Asymptotic significances are displayed. The significance level is .05.

Source: primary data (2023)

A p-value indicated a positive impact between the independent and dependent variables list-wise using a one-way sample test. The test was done at a 5% level of significance. All of the variables in table 4.10 above displayed normal distributions with P values less than 0.000. As a result, the null hypothesis was disproved, and the researcher obtained sufficient data to confirm a causal link between teachers' attitudes and the incorporation of ICT in the classroom at particular secondary schools in the Sheema District.

Table 4.11 ANOVA statistics of significant on relationship between teachers' attitude and integration of ICT in the teaching process

		Sum of Squares	Df	Mean Square	F	Sig.
Assessment of student through ICT devices	Between Groups	1.880	3	.627	3.198	.026
	Within Groups	26.655	136	.196		
	Total	28.536	139			
Preparation of lesson notes	Between Groups	35.538	3	11.846	44.436	.000
	Within Groups	36.255	136	.267		
	Total	71.793	139			
PowerPoint Presentation	Between Groups	16.078	3	5.359	18.729	.000
	Within Groups	38.915	136	.286		
	Total	54.993	139			

Source: primary data (2023)

To determine whether there was a significant correlation between teachers' attitudes and the integration of ICT in the teaching process in particular secondary schools in the Sheema District, respondents were subjected to an ANOVA test of significance (see Table 4.11 above). P-values

less than 95% degree of acceptability supported the findings that instructors' attitudes regarding using ICT to assess students, prepare lesson notes, and use PowerPoint presentations have a substantial impact on how ICT is integrated into the teaching process. Because of this, there were statistically different responses to the incorporation of ICT in the teaching process depending on the attitude of the teachers ($p = 0.026, 0.000$). It has been demonstrated that two variables are connected if the null hypothesis is rejected. For the null hypothesis to be retained, the P value must be at least 95%, not 0.000. This provides the researcher with sufficient data to reject the null hypothesis while maintaining the validity of the findings. It is clear from the three sets of confirmatory tests that there was a substantial correlation between teachers' attitudes and the use of ICT in the classroom at a few of Sheema district secondary schools

Objective three: interview questions on the strategies to enhance teachers' attitude on the integration of ICT in the teaching process

What do you think can be done to ensure enhanced teachers' attitude on integration of ICT in the teaching process in your school?

1. Organise seminars for teachers to train teachers
2. Help us with funds to put computers that are functioning in all classrooms
3. Have stable internet
4. Stable Power sources (Electricity and generator
5. Teachers to take computer lessons
6. Teachers should strive to learn in their free time how to use different ICT tools
7. Installation of Cameras to monitor the security of the ICT infransturcturs
8. Supervison every day when teaching is going on to make sure all teachers are using it

Source: Field data (2023)

Conclusively, the participants gave their views that training of teachers', installation of cameras in the ICT facilities, supervision and other strategies as mentioned above are crucial towards the enhancement of teachers' attitude on integration of ICT in teaching process.

CHAPTER FIVE

DISCUSSION, CONCLUSIONS AND RECOMMENDATIONS

5.0 Introduction

The purpose of this study was to investigate into the influence of teachers' attitude and integration of ICT in the teaching process: a case of selected secondary schools in Sheema District. This chapter presents the discussion per objectives in line with the study documentary reviews. It further presents the study conclusions, recommendations and areas for future studies.

5.1 Discussion

5.1.1 Thelevel of integration of ICT in the teaching process

The respondents were asked to what extent they agree with the following statement: What is the level of integration of ICT in the teaching process in selected secondary schools in Sheema district?

From Table 4.6 above, the findings showed that the level of integration of ICT in the teaching process followed a normal distribution with variables scoring as follows; preparation of lesson notes showed a normal distribution with the M= 2.470, SD= 0.71868, Audio/Visual aid as well scored M= 2.6071, SD= 0.61978, PowerPoint Presentation on the other hand gave M=2.7071, SD= 0.62899 also Assessment of student through ICT devices had M= 2.8214, SD= 0.45309 which was the highest distribution for the study. Furthermore, Virtual discussion of projectshad M= 2.4214, SD= 0.68978, Illustration using computer image scored M=1.7786, SD=0.63550, E-record of students bio-data had M=2.5714, SD= 0.70090, Display of students results in computer gave M=2.2643, SD= 0.75494, Sharing of data with the administration showed M=1.9643, SD= 0.79938 and finally Searching of new English vocabulary recorded the lowest normal distribution

of the study yielding M= 1.7429, SD= 0.71340. These results eventually enlighten that fact that the level of integration of ICT in selected secondary schools in Sheema district is still at a low state regardless of the fact that majority of these schools assess their students through ICT devices but a recommendable number do not use ICT for simple and yet very important tasks like searching of new English vocabulary, sharing data with the administration in the selected secondary schools in Sheema District.

In line with these findings, Chai, Koh, and Tsai's (2010) study demonstrated how ICT creates a creative learning environment, which in turn helps students learn new things in their subject areas. ICT offers more original answers to various learning-related questions. The study argued that since ICT integration levels could be raised, teaching and learning processes would be improved.

More specifically, students are now more frequently involved in the meaningful use of computers, and ICT supports student-centred and self-directed learning, according to Castro Sanchez and Aleman (2011). The researcher considered this to be yet another justification for ICT inclusion in classrooms.

In a similar spirit, Koc (2005) pointed out that ICT encourages collaborative learning in a distance-learning environment and subsequently makes it possible for students to collaborate, share, and interact anywhere at any time. For instance, a teleconferencing classroom could invite students to congregate concurrently for a topic debate from all around the world. The researcher asserts forcefully that this is conceivable as ICT integration in schools rises since it would not be viable in a setting that did not incorporate these essential ICT usage components into its teaching and learning processes.

Moreover, Serhan (2009) came to the conclusion that ICT promotes autonomy by enabling teachers to produce their own content, giving them more control over course content than is possible in a traditional classroom setting. Teachers must become used to using ICT devices to produce their lesson notes, PowerPoint presentations, and learner assessments because the level of integration is still on the normal distribution. It is a useful ability that ought to be used because of its accuracy and effectiveness.

In addition, the findings of this study was in confirmation also with that of Marina (2015) who asserted that technology has the ability to support teachers by assessing students' learning in terms of their performance in the classroom. The use of ICT in assessment is now common where it utilizes digital devices which help in construction of assessment tasks for students.

Last, but not least, a study by Schoen and Keegan (2016) provides more evidence that computer-assisted evaluation improves student outcomes and stimulates their creativity to a greater extent, leading to greater pleasure (Schoen and Keegan, 2016). As a result, computer-based assessment aids in grading and recording student grades. For this reason, the demand for ICT integration in secondary schools in Sheema District is critical given the low degree of integration that the study's findings revealed.

5.1.2 The challenge of teachers' attitude on the integration of ICT in teaching process

Objective two of the study was to find out the challenge of teachers' attitude on the integration of ICT in teaching process in selected secondary schools in Sheema district. Respondents were asked how often their attitude influences the integration of ICT in teaching process in selected secondary schools in Sheema district. The results of this study, as shown in Table 4.7, indicated a normal distribution of the frequency with the challenges of teacher attitudes in the integration of ICT in

the teaching process in particular secondary schools in the Sheema area. Unease with using ICT had M=2.6143, SD=1.07010, while incompetence had M=2.2643, SD=1.02213. Spending time produced M= 2.0143, SD=1.07279. On the other side, M=1.9500, SD=1.04795, and Not Comfortable with ICT Use Have no ICT knowledge to employ for planning, actual instruction, or assessment (M= 2.2643, SD= 1.01507, When ICT is complicated, M=1.8929, SD=0.94219 is produced, whereas low ICT skills produced M=2.0857, SD=1.13471.

Technology encourages indolence in students came up with the results' highest mean and standard deviation, M=2.7357, SD=1.02213, while Usage of ICT is a Distraction in Teaching had the lowest mean and standard deviation, M=1.8714, SD=0.98801. That being the case, this study's findings clearly show that the majority of teachers in these selected secondary schools in Sheema District are opposed to the idea of integrating ICT into the teaching process because they believe that doing so would lead to students becoming lazy, which would ultimately affect their overall academic performance. Additionally, a sizable portion of these teachers also hold the attitude that using ICT is difficult, denying these students the chance to learn, thus ICT is uneasy to use not giving these students the opportunity to try it out and judge according to how they perform in it also was a challenge associated with teacher attitude in integrating ICT in teaching process in selected secondary schools in Sheema District.

In this regard, the study by Ndibelema, (2014) shows that teachers' attitudes toward ICT were found to be positive. Although gender was not a factor, other factors included age, personal computer ownership, and prior computer expertise. This was in contrast to the study since the genders varied and so did the replies to questions about ICT integration experiences and attitudes.

Despite the obstacles to its integration in public secondary schools, ICT has created a new or powerful learning environment where knowledge can be transmitted to the student for improving

knowledge and skill in their self-directed way. As a result, the level of teachers' attitude towards ICT in teaching and learning was positive (Semerci & Aydin, 2016). Many instructors and student teachers do not have the proper atmosphere in which to apply computers or ICT in their community, thus when they utilize these tools in the classroom, some exhibit good attitudes and others negative ones depending on where they are located. The researcher found significant difference with their attitude in regards to different locality of schools of teachers who participated in the study (Ganesan & Krishnakumar, 2016). Sheema district as a different locality and also different from the context of the study examined these empirically to ascertain the teachers' attitude in reference to ICT integration in secondary schools and in teaching process and it should a negative attitude as they see ICT usage as making students lazy and for others, a way of distraction during teaching process.

Although they acknowledge that teacher educators lack enough technological support and training, the teacher educators have a somewhat positive attitude about the use of ICT and its tools and gadgets in the teacher education process (Beri & Sharma, 2019). The Sheema teachers' resistance to integrating ICT into the classroom, despite knowledge of its value and advantages, may be due to the same factors.

Self-efficacy, or expectancy, directly influences both the behavioural intention to use computers and the adoption and use of digital technology (Chen, 2010; Hammond et al., 2011). The results in this area are inconsistent, nevertheless. In fact, some researches came to the conclusion that perceived ease of use has no direct influence on behavioural intention and argued that, if there is any influence at all, it comes from indirect impacts via perceived usefulness (Teo, 2009).

Perceived enjoyment (Teo and Noyes, 2011), the amount of assistance received (Hammond et al., 2011), subjective norms (Kreijnset al., 2013; Pynooet al., 2011), and constructivist orientations are

other factors that have been demonstrated to positively impact teachers' use of technology (Petko, 2012). The researcher is adamant that this study will be continued to test this idea in a different setting and compare the results to see if secondary school teachers' attitudes toward ICT integration in the classroom will change as a result of perceived enjoyment, subjective norms, constructivist orientation, and level of support. Regarding this, the current study also demonstrated that it has an effect on ICT integration since instructors' subjective opinions affect how they are used in the educational process.

The study by Mama and Hennessy (2013) used both qualitative and quantitative methods to uncover trends in teachers' attitudes and beliefs regarding ICT. They were able to separate the teachers into four groups based on how they felt about the usefulness of using ICT in teaching and learning. Only one of the four groups was defined by a negative belief, as it is in Sheema as supported by the study's findings, while the other three groups displayed reasonably positive beliefs in this regard.

5.1.3 The strategies to enhance teachers' attitude on the integration of ICT in the teaching process

At selected secondary schools in the Sheema area, this component aimed to establish techniques to improve teachers' attitudes toward the integration of ICT in the teaching process. The following ways to improve teachers' attitudes toward the incorporation of ICT in the teaching process were included in the questionnaire, and the respondents were asked to score their level of agreement with each. Thus, Table 4.8 shows that 140 respondents answered this question in the case summary of all replies to the items. The 140 respondents checked a total of 636 boxes, or nearly 5 boxes each, indicating how much they agreed with the statement. The construction of a well-equipped

infrastructure for ICT in schools received the highest level of agreement, at 88.6% (n=124) case wise, or 19.5% per response rate. 81.4% (n=114) of respondents, who strongly agree that instructors' flexibility in using ICT is one of the techniques to improve teachers' attitudes toward the incorporation of ICT in the educational process, concurred with this statement. Furthermore, 55.0% of respondents said that arranging ICT training on new tools, apps, and software before integration is one of the case-specific solutions, and 63.6% agreed that required enforcement and supervision during lessons, while Others contend that teacher training, 53.6% (n=75), awareness and seminars on the advantages of ICT in the teaching process, 40.0% (n=56), government funding for ICT installation in schools, 38.6% (n=54), and free internet access by the schools, 33.6% (n=47), are among the tactics that can improve teachers' attitudes toward the integration of ICT in the teaching process depending on the situation.

Salimi, Ramezani and Asadi (2017) concluded that increasing teaching competences among teachers at various levels is one of the essentialities of teaching through ICT. The use of ICTs in the classroom needs to be better understood by teachers, both conceptually and practically, in order for them to be able to address challenges like diversity and heterogeneity.

The results of this study are clearly supported by Mohajeran, *et al*'s (2013) paper, which is titled, 'Key Causes behind Malfunction of Smart Schools and Providing Suggestions for Their Growth in Mazandaran Province'. According to the findings, provincial schools met the necessary criteria for the conceptual model of smart schools. Yet, one of the main challenges to building smart schools was the absence of necessary infrastructures and a lack of funding for the creation of appropriate hardware. Also, it was discovered that the growth of the information and communication infrastructure was necessary for smart schools to be prepared. This study

confirmed with a highest degree that creation of well-equipped infrastructure for ICT in schools with 88.6% is an important strategy to be implemented.

Afzal Khani and Ghod's (2011) results suggested that schools required more endeavours in administration of school through integrated computer system, learning and training system, infrastructure for developing information technology, and integrated computer-based associations with other smart schools to establish a uniform system of smart schools in the province.

In summary, with the three set of confirmatory test run, there is no doubt to conclude that there was a significant relationship between teachers' attitude and integration of ICT in the teaching process in selected secondary schools in Sheema.

5.2 Conclusions

In a bid to investigate into the influence of teachers' attitude and integration of ICT in the teaching process: a case of selected secondary schools in Sheema District the study arrived to the following conclusions.

i) The study concluded that, as the correlations of the findings indicated, the level of ICT integration is still low in secondary schools in the Sheema District due to teachers' attitudes. ICT integration in the educational process would, however, achieve the needed pace if instructors' attitudes improved.

ii) The study found, among other challenges, that teachers' attitudes toward ICT integration are time-consuming, incompetence, uncomfortability with using ICT, and low skills were the perceived attitudes that influence the ICT. For example, teachers' perceptions that ICT makes students lazy have the highest degree and ICT as distraction has the lowest degree in Sheema District.

iii) The final goal set forth measures to improve teachers' attitudes toward using ICT in the teaching process in certain secondary schools in the Sheema area. The study concluded that well-equipped ICT infrastructure for schools, flexibility for teachers to use ICT during lessons, mandatory enforcement of ICT use and supervision, planning ICT training on new equipment, applications, and software before integration, teacher training, awareness, and seminars on the advantages of ICT in teaching process, government funding for ICT installation in schools, and offering free internet by the schools are the strategies that can be used.

5.3 Recommendations of the Study

After examining how teachers' attitudes and the use of Technology in the classroom affected a case study of a few secondary schools in Sheema District, the following recommendations were made:

Due to the low level of ICT integration, the study suggested that schools should support the adoption of ICT integration in the teaching process as a necessary practice under monitoring.

Lack of an ICT infrastructure was another difficult problem. Thus, the report advises that the government build a well-equipped infrastructure for ICT in schools in coordination with district education stakeholders.

The survey also revealed that there is an increasing need for teachers to receive training so they can alter their perspectives and attitudes and become the primary agents for integrating ICT into the teaching process and school administration.

In contrast to instructors' preconceptions that ICT is difficult to use, that its can make certain students lethargic, and that in education, the study suggests training in new technologies before

instructing the intended users to use them. The study recommends training on all technologies that will be used in the teaching process for effectiveness and efficiency instead of this mindset, which, the study shows, results from incompetence, to avoid them from happening again.

5.4 Areas for further research

With the above findings, the study recommended the following areas for further studies:

i) A study should be carried out to investigate the impact of ICT infrastructure on the integration of ICT.

ii) Similar study should be carried out to examine the influence of teacher attitude on ICT integration to be able to measure what other schools views.

iii) General factors hindering ICT integration in teaching process should also be investigated by future researchers so as to leave no stone unturned.

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APPENDICES

APPENDIX I: INTRODUCTION LETTER

Dear Sir/Madam,

I am Joel Asiimwe a student at Kabale University undertaking Master of Arts in Education Administration and Management. As part of my course work, I am conducting a research study on Teachers' attitude and ICT integration in teaching process among selected secondary schools in Sheema District. You have been selected to participate in this study.

I am therefore seeking for assistance in order to collect the necessary information by filling the questionnaire attached herein. This will only take about 10-15 minutes. Kindly note that the information being sought is purely for academic proposes and will be treated with outmost confidentially.

Your participation in the study will be highly appreciated.

Thank you very much.

APPENDIX II: QUESTIONAIRE FOR TEACHERS

Dear Respondent,

I am Joel Asiimwe, a postgraduate student of Kabale University conducting research on, teachers' attitude on the integration of ICT in the teaching process among secondary schools**.** Kindly answer these questions as objectively as possible so that the results of the data analysis are fairly accurate. All responses received will be treated with utmost confidentiality, and will only be for the purposes of this research work.

SECTION A: demographic and respondents profile (Tick the most appropriate option)

Q1) Name of the School (optional)…….

Q2) Sex of the respondent

Male ☐

Female ☐

Q3) Age of the respondent

20- 35 years ☐ 36-40 years ☐

41-45 years ☐ 46- 50 years ☐

51 & above ☐

Q4) Level of education of the respondent

(a). Diploma ☐

(b). Bachelors ☐

(c). Post graduate ☐

Q5). Teaching experience

Below 5 years ☐ 6-10 years ☐ 11+ years ☐

SECTION B: Level of integration of ICT in the teaching process

This section contains questions about level of integration of ICT in the teaching process. In the table below, the numbers 1-3 represent levels of applicability from highly applicable, moderately applicable and not applicable. Please mark the given statements in the table below according to your level of agreement.

Key

Highly applicable	**Moderately applicable**	**Not applicable**
1	2	3

How applicable are the following aspect of integration of ICT in your teaching process		1	2	3
B.1	Preparation lesson notes			
B.2	Audio/Visual aid			
B.3	PowerPoint presentation			
B.4	Assessment of student through ICT devices			
B.5	Virtual discussion of projects			
B.6	Illustration using Computer image			
B.7	E-record of students bio-data			

B.8	Display of students results in computer			
B.9	Sharing of data with the administration			
B.10	Searching of new English vocabulary			

SECTION C: The challenges of teachers' attitude on the integration of ICT in teaching process

This section contains questions about the challenges of teachers' attitude on the integration of ICT in teaching process. In the table below, the numbers 1-4 represent how often the attitude influence the integration of ICT in teaching process. Please mark the given statements in the table below according to your level of agreement.

Key

More often	Often	Not often	Never
1	2	3	4

How often has your attitude influence the integration of ICT in teaching process		1	2	3	4
C.1	Incompetence				
C.2	Unease to use ICT				
C.3	Time consuming				

C.4	Not comfortable with use of ICT				
C.5	Have no knowledge of ICT to use in planning, actual teaching and assessment				
C.6	Low skills of ICT				
C.7	ICT is complex				
C.8	ICT makes student lazy				
C.9	Use of ICT is a distraction in teaching process				

SECTION D: The strategies to enhance teachers' attitude on the integration of ICT in the teaching process

This section contains questions about the strategies to enhance teachers' attitude on the integration of ICT in the teaching process. In the table below, the numbers 1-5 represent levels of agreement from strongly agree to strongly disagree. Please mark the given statements in the table below according to your level of agreement.

Strongly agree	Agree	Not sure	Disagree	Strongly Disagree
1	2	3	4	5

Please indicate your level of agreement with the following strategiesto enhance teachers' attitude on the integration of ICT in the teaching process		1	2	3	4	5
D.1	Teacher's training					
D.2	Government funding for installation of ICT in schools					
D.3	Flexibility of teachers to use ICT					
D.4	Awareness and seminars on the benefits of ICT in teaching process					
D.5	Mandatory enforcement and supervision during lesson					
D.6	Provision of free internet by the schools					
D.7	Organize ICT training on new equipment, applications and software before integration					
D.8	Creation of well-equipped infrastructure for ICT in schools					

Thank you very much for your precious time and responses.

APPENDIX III

INTERVIEW GUIDE FOR SCHOOL ADMINISTRATORS

I am **Joel Asiimwe**, a student at Kabale University undertaking Master of Arts in Education Administration and Management. As part of my course, I am conducting a research study on Teachers' attitude on the integration of ICT in the teaching process in secondary schools. The study is exclusively for academic purposes and the information provided will exclusively be treated with utmost confidence.

Thank you very much in advance

1. What are the number of ICT infrastructure in your school?
2. What do you do to encourage teachers to integrate ICT in preparation for teaching?
3. How does your school emphasize the use of ICT in teaching?
4. What are your teachers' attitude when encouraged to integrate ICT in teaching process?
5. What ICT tool does your school use in conducting students' assessment?
6. To what extent is ICT used in the assessment of students.
7. What do you think can be done to ensure enhance teachers attitude on integration of ICT in the teaching process in your school?

THANK YOU FOR YOUR TIME AND COOPERATION

APPENDIX IV: TABLE OF MORGAN AND KREJCIE (1970) FOR DETERMINING POPULATION SAMPLE SIZES IN EDUCATIONAL RESEARCH

N	*S*	*N*	*S*	*N*	*S*
10	10	220	140	1200	291
15	14	230	144	1300	297
20	19	240	148	1400	302
25	24	250	152	1500	306
30	28	260	155	1600	310
35	32	270	159	1700	313
40	36	280	162	1800	317
45	40	290	165	1900	320
50	44	300	169	2000	322
55	48	320	175	2200	327
60	52	340	181	2400	331
65	56	360	186	2600	335
70	59	380	191	2800	338
75	63	400	196	3000	341
80	66	420	201	3500	346
85	70	440	205	4000	351
90	73	460	210	4500	354
95	76	480	214	5000	357
100	80	500	217	6000	361
110	86	550	226	7000	364
120	92	600	234	8000	367
130	97	650	242	9000	368
140	103	700	248	10000	370
150	108	750	254	15000	375
160	113	800	260	20000	377
170	118	850	265	30000	379
180	123	900	269	40000	380
190	127	950	274	50000	381
200	132	1000	278	75000	382
210	136	1100	285	1000000	384

Note.—*N* is population size. *S* is sample size.

Source: Krejcie & Morgan, 1970

APPENDIX V: APPROVAL LETTER FOR DATA COLLECTION

KABALE UNIVERSITY

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admissions@kab.ac.ug

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DIRECTORATE OF POSTGRADUATE TRAINING

January 12th, 2023

To whom it may concern

This is to certify that *Mr. Asiimwe Joel Owakubariho Reg. No: 2020/A/EDM/1926/R* is a postgraduate student of Kabale University studying for a *Masters of Arts in Educational Management* in the department of *Foundations of Education.*

He has successfully defended his Research Proposal for a study entitled,
"Teachers' attitude and integration of ICT in the teaching process: A case of selected secondary Schools in Sheema District."

The student is now ready for field work to collect data for his study. Please give the student any assistance you can to enable him accomplish the task.

Thanking you for your assistance,

Yours sincerely

KABALE UNIVERSITY DIRECTORATE OF POSTGRADUATE TRAINING P.O. BOX 317 KABALE
12 JAN 2023

Assoc. Prof. Sekiwu Denis
DIRECTOR, POSTGRADUATE TRAINING