



HAWASSA UNIVERSITY  
INSTITUTE OF TECHNOLOGY  
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ASSESSING TEACHER'S EXPERIENCE ON THE USE ICT TO FACILITATE  
TEACHING IN SECONDARY SCHOOLS IN ETHIOPIA

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November, 2024

Hawassa, Ethiopia

**ASSESSING TEACHER'S EXPERIENCE ON THE USE ICT TO FACILITATE  
TEACHING IN SECONDARY SCHOOL IN ETHIOPIA**

**SUBMITTED IN PARTIAL FULFILLMENT OF THE REQUIREMENTS OF THE  
DEGREE OF MASTERS IN INFORMATION TECHNOLOGY**

**BY: MUSA AMAN**

November, 2024

Hawassa, Ethiopia

**Declaration**

declaration I therefore declare that the focus of my own inquiry is this thesis, "Assessing teachers' experience with using ICT to support teaching in selected secondary schools", namely Elbuko Secondary School, Dello Sebro Secondary School, Akasha Secondary School, and Kara Secondary School. With the help and direction of my research advisors, I conducted the study on my own. The thesis has never been approved for a degree before, and it is not currently being presented to any university in the nation as a candidate for a degree.

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## **Abstract**

*In both our everyday lives and our educational system, information and communication technology, or ICT, is becoming more and more crucial for sustainable growth. As a result, educational institutions are under increasing pressure to incorporate and use ICT to improve the teaching and learning process and give students the skills they need to succeed in the twenty-first century. The process of collecting, generating, processing, and storing information through the use of hardware, software, the internet, and the global system of mobile communications (GSM) is known as information and communications technology (ICT). This study aims to evaluate teachers' perceptions on "teachers' experience on the use of ICT to facilitate teaching in secondary schools: in case of Ginnir Woreda secondary schools." Dello Sebro, Elbuko, Akasha, and Kara Ifa Boru secondary schools in the Oromia region of Ginnir Woreda were the study sites for this study, which used a descriptive analysis approach as its research design. There were 143 people in the study's overall population, and 115 people made up the sample size, which included 9 interviews chosen by deliberate sampling and 111 teachers chosen through basic random sampling. Here, 31 questionnaire questions for 115 teachers and 4 interview questions for 9 interviewees were utilized to gather data from the respondents. Descriptive analysis and the SPSS software program were then used as the data analysis technique. The majority of the responses obtained from the three tools indicate that teachers lacked ICT skills and expertise. In this instance, the effective use of ICT in teaching was the dependent variable, and the independent variables were behavioral intention to use, support, and professional development; perceived ease of use of ICT in teaching; perceived usefulness of ICT; barriers that prevent ICT from being used in teaching; and attitudes toward using ICT in teaching. The intention of each individual to adopt new technology has been influenced by the six variables listed. According to the study, there are time limits, technological problems, training and support requirements, and a lack of resources. The study finds that lack of ICT training, insufficient ICT resources, and inaccessibility and unavailability of ICT resources are frequent obstacles that prevent teachers from utilizing ICT to support teaching and learning. The statistical software known as SPSS tools was used to analyze the data.*

*Key words: ICT usage, perceived ease of use, perceived usefulness, ICT integration*

# Table of Contents

CHAPTER ONE .....	1
1. INTRODUCTION.....	1
1.1. Statement of Problem.....	3
1.2. Research questions .....	3
1.3. Objective(s).....	4
1.4. Significance of Research .....	5
1.5. Scope of the Study.....	6
1.6. Organization of the Thesis.....	6
1.7. Chapter Summary .....	6
CHAPTER TWO .....	6
2. Literature.....	7
2.1. Introduction .....	7
2.1.1. Meaning of ICT.....	7
2.2. Theories and Model on the ICT Integration .....	8
2.3. Professional development and support for ICT Integration .....	10
2.4. ICT integration in Education .....	11
2.5. The perception of teachers on the use of ICT in teaching process .....	12
2.6. Teacher’s experience with using ICT in teaching .....	13
2.7. Impact of ICT on teaching and learning practice in secondary schools .....	15
2.8. Equity and Accessibility issue.....	15
2.9. Conceptual framework .....	16
2.10. Research Gap .....	17
CHAPTER THREE .....	18
3. RESEARCH METHODOLOGY.....	19
3.1. Introduction .....	19
3.2. Research design .....	19
3.3. Area of the Study.....	19
3.4. Data Source.....	19
3.5. Study Population.....	20

3.6.	Sample Size and Sampling Technique .....	20
3.7.	Data collection Instrument.....	20
3.8.	Procedures of data collection.....	22
3.9.	Data analysis.....	22
3.10.	Ethical Consideration.....	22
CHAPTER FOUR.....		23
4.	DATA PRESENTATION AND DISCUSSION .....	23
4.1.	Introduction .....	23
4.2.	Rate of Respondents .....	23
4.3.	Respondent Location .....	24
4.4.	General information of the respondents .....	24
4.5.	Perceived ease of use of ICT in teaching .....	26
4.6.	Perceived usefulness.....	28
4.7.	Attitudes toward the use of ICT in teaching.....	31
4.8.	Behavioural Intention to use ICT in teaching.....	34
4.9.	Actual System Use.....	36
4.10.	Support and Professional Development.....	38
4.11.	Perceived Barriers with using ICT in teaching .....	40
4.12.	Interview questionnaires' .....	43
4.13.	Observation Results of Availability of ICT equipment tools or facilities in the Selected Secondary Schools of Ginnir Woreda. ....	44
4.14.	Research model.....	45
CHAPTER FIVE .....		47
5.	DISCUSSION OF THE FINDING.....	49
5.1.	Summary of Key Findings.....	49
5.2.	Teacher's perception toward using ICT in teaching.....	49
5.3.	Teachers attitudes and Intension.....	51
5.4.	Actual use .....	52
5.5.	Support and resources.....	54
5.6.	Barriers and Challenges.....	52
CHAPTER SIX.....		55
6.	CONCLUSION AND RECOMMENDATION.....	55

6.1. Conclusion.....	55
6.2. Recommendation.....	56
6.3. Future work.....	57
REFERENCES .....	58
Appendix A: Questionnaires.....	62

### List of table

Table2.1 Summary of Key Studies of Related Work.....	18
Table 4.1.sex, Age, experience and Qualification of the respondents.....	24
Table4.2. using ICT tools in teaching, relation to ICT tools provided by schools, teachers experience with ICT tools. ....	26
Table4.3. teaching effectiveness with ICT tools, role of ICT tools in classroom management, ICT tools for engaging students in the learning process. ....	28
Table 4.4 uses ICT technology to interact with educational resources, developing confidence of using ICT technology.....	30
Table4.5 enjoyment while using ICT tools in teaching, feeling with using ICT tools makes teaching more interesting; believe in ICT tools as essential for modern teaching. ....	31
Table4.6. teachers believe in ICT Widens access to educational resources, believe in using ICT makes teaching process easier. ....	33
Table4.7. teacher’s willingness to use ICT tools, incorporating new ICT tools into teaching, likely using ICT tools.....	34
Table4.8. teacher’s using ICT tools in your daily teaching, types of ICT tools teachers used most frequently, integrating ICT tools the lesson plans. ....	36
Table4.9. teacher’s satisfaction with the technical support, the effectiveness of professional development programs and teacher’s participation on professional development related to ICT.....	38
Table4.10. there is lack of ICT technical support, insufficient time to use ICT technology in teaching, lack of government support to improve ICT usage in teaching, lack of ICT training. ....	40
Table4.11. the main challenges teachers face while using ICT tools in teaching .....	42
Table4.12. Observation.....	44

### List of Figures

Figure2.1. Technology Acceptance Model .....	<b>Error! Bookmark not defined.</b>
Figure 4.1. rate of the respondents.....	23
Figure 4.2. Location of the respondents.....	24
Figure4.3. Research model on ICT usage in facilitating teaching.....	45

## **Abbreviation and Acronyms**

ICT= Information and communication technologies

IT= Information Technologies

TRA=Theory of reasoned Action

TPB=Theory of planned behavior

TAM= Technology Acceptance Model

TPACK= Technological Pedagogical Content Knowledge

SPSS= Statistical Package for Social Sciences

## **CHAPTER ONE**

### **1. INTRODUCTION**

The word ICT stands for Information and Communication Technology and encompasses the wide range of technologies, not just limited to access to computers and the internet. It includes the using satellites for FM radio and communication (Akhtar 2014). ICT refers to technological advancements that enable the use of information via communication. This encompasses the use of computer, Internet, cell phones, wireless networks and other communication devices. This indicates the opportunities to incorporate Information and communication technology in the enhancement of quality of education through incorporating teacher training programs (Ratheeswari 2018).

In modern society, ICTs, as mentioned by (Bindu 2016), have a noteworthy influence across various aspects of life, with education being notably impacted. This is attributed to its capacity to allow educators to adjust their teaching methods to convene the unique needs of individual students. Consequently, the influence of ICT is particularly prominent in the education sector. Educational institutions are facing challenges to integrate information and communication technologies. Given that ICT can support acquisition and integration of information, it presents remarkable opportunities for developing nations to improve their educational systems. Using ICT in the classroom is taken seriously by educational institutions and the governments throughout the worldwide. As educational systems evolve to include widespread of using ICT in teaching and learning process, more vital measures and key elements are required for the successful integration of ICT within educational contexts. Although unconnected computers have been available in most schools for over two decades, the use of networked ICT remains relatively recent for many, and they continue to face challenges in discovering innovative methods to incorporate ICT into their educational settings.

Since the inception of the first computers, numerous advocates have supported their use to improve learning outcomes. With the advancement of computers into powerful yet cost-effective devices, these discussions have become increasingly fervent(Bindu 2016). The rapid expansion of the Internet has resulted in significant changes in today's world, influencing the requirements of contemporary societies as well. Information and communication technology (ICT) is becoming increasingly vital in both our personal and professional spheres. Consequently, educational institutions are facing an increased demand to integrate ICT into their teaching and learning

practices. To comprehend the effects of ICT in both the workplace and daily life and to address the existing technology gap in education, modern educational institutions are striving to update their curricula and classroom environments. The successful incorporation of technology in educational settings is crucial for facilitating significant learning experiences and enhancing professional efficiency in educational organizations (Kafu-Quvane and Chikoko 2019).

Students can access educational resources not just from their own school but also from various educational institutions and content creators around the globe. The use of web technology enables the creation of a completely student-focused learning environment. While information and communication technology has shown to be beneficial for education, the advantages of e-learning implementation have not been evenly distributed among all schools. Societies in the West have made considerable strides in incorporating technology into the classroom (Assefa, Abera, and Gebru 2022).

According to Kafu-Quvane and Chikoko (2019), various governments around the world have begun to invest in information and communication technology (ICT) to improve education in schools. For example, in 2009, the United States government allocated \$6 billion for K–12 schools and \$4.7 billion for higher education institutions; during the 2008–09 periods, the UK government invested £2.5 billion in educational ICT; and New Zealand’s government spends over \$410 million each year on ICT infrastructure for schools. Indeed with all of these ventures in proficient improvement, foundation, and hardware related to data and communication innovation (ICT), instruction is still moving forward in numerous countries. In spite of noteworthy ventures in instruction, there's less prove of ICT take-up and application in educating and learning, especially in Turkey. The school segment is contributing broadly in ICT, concurring to the prove, but its appropriation of the innovation has slacked behind that of the commercial division.

A number of surveys look into the variables that are connected to with using computer by the teachers' in the classroom (Kafu-Quvane and Chikoko 2019). In 21st century technology and all technological developments around the world have brought rapid changes in every sector of society. All sectors of the economies recognized information and communication as a pillar of modern society. In today world no sector seems to work efficiently without them. Different sectors such as education sector, government sectors, health sectors, business sectors, tourism sectors and finance sectors are critically dependent upon information and communication technology (Malhotra 2020).

In order to foster ICT literacy and lay the groundwork for the growth of ICT professionals in the nation, the Ethiopian government is providing ICT education and training in secondary and tertiary educational institutions. The demand for ICT specialists will only increase as the ICT development sector becomes stronger. It is increasingly acceptable to provide the community with a basic understanding and awareness of computers and related technology in order to enable it to benefit from ICT (Ababa 2017).

### **1.1.Statement of Problem**

It has been observed that throughout the past 20 years, information and communication technologies have proliferated globally and are now influencing education. The idea that ICT can transform an antiquated educational system, speed up national development initiatives, and better educate students for the information age has frequently been the foundation for the global acceptance of ICT in education. The aforementioned promises have sparked a flurry of wild conjecture over the need for educational reforms to adapt the new technologies, especially in developing nations (Albirini 2019). The main factor in creating everything beneficial for people is education. The two processes that make up the educational system are teaching and learning. Information and communication technology (ICT) must be incorporated into education. One of the main instruments for transforming knowledge for the future world is ICT. The traditional system is still used in many schools today, but it does improve education because students need to constantly use ICT because technology is changing the world. ICT integration with education, according to some, is the use of computers in the classroom for processing, creating and designing. Despite spending a lot of money on ICT, research indicates that the school sector has not adopted the technology as quickly as the commercial sector. Numerous studies examine the variables associated with instructors' usage of computer technology in the teaching and learning process (Wijayasundara 2020).

ICT use is playing a significant impact on how teaching and learning are carried out. The traditional teaching approach has prioritized content. For many year textbooks dominated the creation of course materials. The purpose of the activities was to help students retain the material that the lecturers had covered. Today's educators need to create learning activities that are both interesting and pertinent for their students. Technology is a great tool for making sure that everyone has access to education because it can improve. Furthermore, the use of ICT facilitates a learner-centered approach rather than a traditional teacher-centered one. By emphasizing information application over factual

comprehension, modern curricula promote students aptitude and performance. Sharing knowledge based on contemporary curricula is made simpler by the use of ICT. Therefore, using ICT in the classroom benefits both educators and learners because when used properly, it can provide high-quality instruction (Bindu 2016).

Ethiopia's education service has attempted with the aid of certain policies to achieve the goal of improving the quality of education through the use of ICT. Providing teachers with ICT training is one way to help them become more proficient with ICT tools which will benefit students. It is clear that the potential of information technology to support students learning has not been fully realized despite all of these efforts to improve teaching in Ethiopia through ICT infrastructure, equipment, and professional development.

Hence, it is required to investigate that the level of the teachers using ICT to facilitate teaching in selected secondary schools in Ethiopia specifically in Oromia region Ginnir Worada secondary schools, because using ICT in teaching has a contribution for quality of education and the backward traditional classroom teaching may cause to decline of the result of the students. This study aims to address teachers' experiences with using ICT in the classroom by focusing on the following topics: the advantages of using ICT to facilitate teaching, and the challenges of using ICT to facilitate teaching in four (4) selected secondary schools of Ginnir District (Werada). The researcher's main goal is to evaluate how teachers use ICT to facilitate the teaching process in secondary schools in the Oromia region.

## **1.2. Research questions**

2. What are the teacher's perceptions toward using ICT to facilitate teaching in secondary schools?
3. What are the barriers that hinders from using ICT to facilitate teaching in secondary schools?
4. What are the teacher's attitudes and competences with the use of ICT in teaching in secondary schools?

## **4.1. Objective(s)**

### **4.1.1. General Objective:**

The study's main goal is to find out how teachers in four chosen secondary schools in Ethiopia feel about using ICT to help with instruction (in the case of Ginnir Woreda Secondary Schools).

#### **4.1.2. Specific Objectives:**

1. To examine relevant literature in order to comprehend the idea of utilizing ICT to support secondary school instruction
2. To determine how secondary school instructors feel about utilizing ICT to streamline the instructional process
3. To investigate the barriers of using ICT to facilitate teaching process in secondary schools.
4. To investigate secondary school teachers' attitudes and proficiency using ICT.
5. To determine the theories contribute toward ICT usage in facilitating teaching process.

#### **4.2. Significance of Research**

This study is basically focused on identifying how the teachers use ICT to facilitate teaching and learning procedure to improve students perceptive. After this study conducted the benefits, barriers and attitudes toward using ICT in teaching will be identified. By understanding teachers' perceptions with regarding to the use of ICT to facilitate teaching, this study researcher expect that the study may also serve as a guide for policy-makers, and other stakeholders to put up informed decisions on ICT policies with regard to secondary education. The study's conclusions will help the government and other interested parties understand the barriers to using ICT to improve instruction. With this information, the government may be able to find ways to guarantee that ICT is used successfully to improve instruction in public secondary schools. The study may also help establish a body of knowledge regarding teachers' perspectives on using ICT to support instruction. The data may serve as a guide for teachers looking to overcome challenges when integrating ICT into secondary school instruction.

### **4.3. Scope of the Study**

The study's scope is restricted to evaluating secondary school teachers' experiences using ICT in the classroom, notwithstanding various ICT-related concerns. Second, because the researcher is a teacher, time and manpower constraints prevented the inclusion of several secondary schools in this study, which was limited to a few chosen secondary schools in the East Bale zone Ginnir woreda (Elbukko Secondary School, Dello Sebro Secondary School, Akasha Secondary School, and Kara Secondary School). Lastly, there is a time limit on the study. Only the ongoing ICT lessons from the current academic year will be used as the study's data source; previous years' work will not be.

### **4.4. Organization of the Thesis**

In this chapter one would be the introduction part of the study which includes study background, problem statements, research questions, objectives, significance of the study, Scope of the study, and organization of the study. In chapter two review literatures is presented on teacher's experience with using ICT in teaching. Furthermore, chapter three would be the methodology of the research. Chapter four is data analysis and interpretation of the data collected from the responses would be offered by using quantitative and qualitative description discussion. In the last chapters the conclusion, summary, and recommendation of the study is presented and the reference and appendices would be followed.

### **4.5. Chapter Summary**

The first chapter of the study is presented the introduction of the research. This chapter also covered the contents such as background of the study and problem statement, objective of the study, significance of the study, research questions, and scope of the study.

## **CHAPTER TWO**

### **2. Literature**

#### **2.1. Introduction**

This chapter presents about the review of related literature of the study. In these research different literatures including conceptual and theoretical bases, this reviewed literature helps to identify the gaps and to learn from the research design, method and evaluation.

##### **2.1.1. Meaning of ICT**

"Information and communication technology" is what ICT stands for. It describes technologies that offer telecommunication-based information access. Though it mostly concentrates on communication technologies, it is comparable to information technology (IT). Cell phones, wireless networks, the internet, and other communication tools fall under this category. These days, there are more opportunities to use ICT in teacher training programs to help teachers become better teachers (Use of information and communications technology ( ICT ) in the teaching and learning of writing Research report 2021). In the twenty-first century, "technology" is a crucial topic in many domains, including education. Technology is now the primary means of knowledge transfer in the majority of nations worldwide. Innovations in technology integration have revolutionized our societies and completely altered how we live, work, and think(Sanjay Shah 2022). The modern society is greatly affected by Information Communication Technology in every parts of life, including education. ICT gives great chance for developing countries to improve their education because it helps people learn and understand information better (Bindu 2016). Information and Communication Technology (ICT) facilitates information-related tasks. These tasks consist of acquiring analyzing storing and displaying data. These activities are increasingly involving collaboration and communication as well(Ghavifekr, Kunjappan, and Ramasamy 2006). A useful approach to conceptualize ICT is to take into account all of the present areas of digital technology that support the use of information by people companies and organizations. Information and communication technology (ICT) is playing a crucial role in modern organizations. In the early 1980s, computers were brought into the classroom, and many scholars believe that ICT will be a major part of the education of the next generation. There are many ways to enhance teaching and learning in the classroom with modern technology.

ICT in the classroom has the potential to transform teaching. It may be difficult to realize that potential, though (Ghavifekr, Kunjappan, and Ramasamy 2006).

## **2.2. Theories and Model on the ICT Integration**

### **2.2.1. Theories of ICT Integration in teaching**

According to (Akhtar 2014) an integral part of the educational system are teachers. Without better teachers we are unable to imagine a more ideal learning environment. The teachers were once the focal point of education but their position has since evolved significantly. They are regarded by the students as a friend and mentor. They facilitate learning but do not give knowledge. Our current period is known as the "knowledge explosion age." The body of knowledge is expanding quickly. To deliver better instruction, teachers need to be up to date on changes. In this sense, ICT is quite beneficial. Teachers can gain from ICT in a variety of ways. It might help teachers advance professionally. Technology for information and communication can help teachers acquire a number of skills. They can finish a range of certification programs offered by renowned worldwide educational institutions including Oxford University, Cambridge University, British Council, and others. The applications enhance the teacher's capacity to instruct students while also simplifying and making his subject matter more understandable. It could be beneficial for the professional growth of educators. Information and communication technologies can assist teachers learn a variety of skills. Reputable international educational institutions such as Oxford University, Cambridge University, British Council, and others provide a variety of certification programs that they can complete. By simplifying and making the material easier to understand, these systems aid in the more effective instruction of pupils. Teachers can expand their knowledge with the help of electronic journals, publications, and libraries all of which are made available by information and communication technologies. They can participate in audio and video conferences and conversations with subject-matter experts to increase their understanding and proficiency.

A teacher can acquire contemporary teaching techniques with the aid of ICT. On a variety of projects and assignments he can collaborate with the students. It is also useful in providing lesson plans homework assignments etc. He can help the students comprehend difficult ideas and procedures by using PowerPoint presentations. Moreover he benefits from information and communication technologies by having more interactions with students and teachers. He has easy access to the students at any time or location they choose. According to (Koç, Yüksel, and Altun

2021) Information delivery is the primary focus of teaching in both schools and higher education though this is not the only goal of teaching. The following are the additional goals in addition to providing information enhancing concept application and comprehension, enhancing ones capacity for expression, enhancing cognitive ability and reasoning, The improvement of judgment and decision-making skills, increasing vocabulary speed and comprehension, establishing a clear value system and self-concept, forming suitable study habits, developing a scientific personality, risk-taking ability tolerance for ambiguity etc. Additionally the majority of teachers employ the lecture method which has little chance of accomplishing the majority of the previously stated goals. Because the goals are multifaceted it is necessary to employ a variety of strategies in concert to achieve them. ICT can be useful right now.

It is well known that no teacher is able to give thorough and accurate information about his own subject. By providing access to a variety of information sources, ICT can close this gap (Gupta 2012). ICT can help teachers and students learn about their subject areas in a variety of ways. Technology-based teaching and learning provides a range of interesting techniques to make learning more meaningful and rewarding, including mind mapping guided discovery, data storage, database usage, educational video stimulation, brainstorming, and music (Ghavifekr et al. 2015).

### **2.2.2. Technology Acceptance Model (TAM)**

Using in instruction benefits students as well as teachers, teachers is being the most important and is supported by educational researchers. In order to implement interactive lessons clarify difficult concepts and involve students in the entire pedagogical process teachers can use ICT. ICTs ability to ensure high-quality instruction and learning is its main advantage in the field of education. Even though its benefits are well known teachers haven't always seen ICT as the answer to improving student achievement (Slimani 2022). The Theory of Reasoned Action (TRA) and Theory of Planned Behavior (TPB) which were used to device user's reception of information systems were the foundations of Davis 1989 TAM and to explain why users accept computers the TAM model was established. According to TAM acceptance of technology is greatly affect by two factors in particular: perceived ease of use and perceived usefulness. TAM is the most popular model created by Davis (1989). The Technology Acceptance Model was aimed to being for the new technology. The Theory of Reasoned Action (TRA) and Theory of Planned Behavior (TPB), which were used to gauge consumers' adoption of information systems, served as the foundation for Davis' 1989 TAM.

Figure1 indicates the TAM model created by Davis (1989).

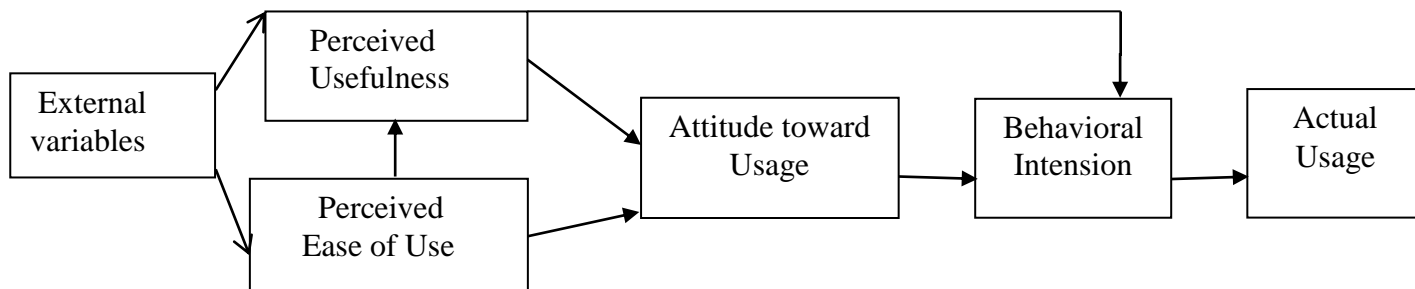


Figure2.1. Technology Acceptance Model

To gain an understanding of teacher’s technology use beliefs and behaviors researchers have put forth and embraced a number of models. Davis created the Technology Acceptance Model (TAM). (1989) is one of the widely used models (Koç, Yüksel, and Altun 2021).

This model was created by conceptualizing the perceived utility usability attitudes toward usage and behavioral intention to use ICT to support teaching in a subset of Ginnir Woredas secondary schools.

According to Davis (1989), **perceived ease of use** is the extent to which users anticipate the target system to be effortless and uncomplicated. The current study's theoretical and fundamental underpinning is the TAM model.

In predicting usage, **perceived usefulness** is far more significant than ease of use and has a direct impact on behavioral intentions in addition to its impact on attitude.

**Attitude toward Usage:** This variable is obvious since it determines whether a person feels good or bad about carrying out the desired behavior. Attitude can be divided into three main categories: attitude toward the behavior, attitude toward the purpose, and attitude toward the main construct. According to (Koç, Yüksel, and Altun 2021), a person's behavioral intention to use technology is also influenced by their attitude toward its use.

**Behavioral Intention:** The idea of behavioural intention to use ICT in teaching, as defined by Chuttur (2017), refers to the possibility or desire of educators to integrate ICT tools and resources into their teaching operations.

### **2.3. Professional development and support for ICT Integration**

We contend that three essential elements content, pedagogy, and technology are at the center of effective technology-based instruction. The connections among these three elements are also crucial. The vast differences in educational technology integration can be attributed to the ways in which these components interact with one another in various circumstances. The three knowledge bases that make up the TPACK framework are content, pedagogy, and technology. Below is a summary of the framework; further published work may have more thorough explanations. Technological Pedagogical Content Knowledge (TPCK) was presented to the field of educational research as a theoretical framework for understanding the teacher knowledge required for effective technology integration (Mishra and Koehler 2014). The acronym for the TPCK framework was changed to TPACK, which is pronounced "tee-pack," in order to make the three categories of knowledge—technology, pedagogy, and content easier to remember and create a more coherent whole (Schmidt et al. n.d.). The field of educational research was introduced to Technological Pedagogical Content Knowledge, or TPCK, as a theoretical framework for understanding the teacher knowledge required for successful technology integration TPACK, which is pronounced "tee-pack," was chosen as the new acronym for the TPCK framework in order to make it easier to remember and to make the three categories of knowledge technology, pedagogy, and content more cohesive (Albion and Tondeur 2015).

### **2.4. ICT integration in Education**

ICT integration in education refers to the use of computer-based communication that is incorporated into the standard teaching procedure in the classroom. Apart from preparing students for the contemporary digital world, educators are seen as the primary facilitators of incorporating ICT into standard classroom instruction. The term ICT integration in education refers to tech-based teaching and learning procedures that are closely related to the use of educational technology in classrooms. ICT integration in schools, especially in the classroom, is a critical issue because students are used to technology and will learn more effectively in a technologically advanced setting. This is because the use of technology in education can lead to effective learning with the help and support of ICT

elements and components, which significantly enhances the pedagogical aspects of this field (Ghavifekr et al. 2015). The impact of information and communications technology (ICT) advancements on our society has resulted in a radical transformation in how people think, work, and live. This includes the requirement that ICT be incorporated into the curriculum of educational institutions such as schools in order to educate pupils for life in a knowledge-based society (Ghavifekr et al. 2012). Using ICT to prepare students for life in the twenty-first century may be beneficial. By gaining the necessary knowledge, students who learn ICT will be better prepared to face obstacles in the future. Students can acquire the abilities required for the current globalization by using ICT. According to (Ghavifekr et al. 2012), this is because ICT can help students increase their knowledge and information, develop their skills, and become more motivated. The role of local school policies in ICT integration can be discussed from the perspective of school improvement. In short, the school improvement movement is a practice-and policy-oriented approach to improve schools' capacity to handle change. While school effectiveness is primarily concerned with what needs to be changed within schools, school improvement is much more focused on how schools can change to become more effective; the quality of the changes is the primary focus of school improvement, with less attention paid to the effects on student outcomes (Ghavifekr et al. 2012). Most technical people would describe Ethiopia's progress in less than ten years, at least in terms of infrastructure, as leapfrogging. Even while the country may have one of the lowest tele-densities on the continent at the moment, there are signs that things will soon change. The backbone of e-government communication, WoredaNet, operated by Ethiopian Telecommunication Corporations, has enormous potential to accelerate the country's ICT development. This network has already begun to benefit the public and educational sectors, and the next phase will see the addition of the agriculture and health sectors. All of this, along with a corresponding ICT for education strategy and implementation plan, positions Ethiopia to become a pioneer in ICT usage on the continent. The infrastructure seems to be coming together and the policies and strategies are in place. Currently, the government's job is to effectively coordinate the implementation of the education policy and implementation plan strategy (Hare 2007).

### **2.5. The perception of teachers on the use of ICT in teaching process**

It is true that using ICT in the classroom has made teaching more difficult and requires longer retention of material but it also demands competencies from the teachers. Based on data from the United Nations Population Fund (UNDP) in 2001 nearly 80% of educators in developing nations

believe they are not ready to use technology. An essential aspect of ensuring high-quality education is the inclusion of information and communication technologies in the curriculum (Gebremedhin et al. 2015). ICT development is happening very slowly but over the past ten years it has changed gradually. The Internet is now available to more educators and students allowing them to access a wealth of information. In terms of educational establishments though there aren't many Indonesian schools using ICT for language instruction. These schools are mostly located in large cities or in international schools in contrast ICT use in small cities like the Aceh province is still restricted to educators and educational institutions. Since they view technology as a tool to help teachers and students better comprehend and share ideas, educators and educational organizations in smaller cities like Aceh province mostly use it in the classroom (Teuku et al. n.d.). The majority of these schools are located in international institutions or bigger cities (Teuku et al. n.d.).

## **2.6. Teacher's experience with using ICT in teaching**

### **2.6.1. Teachers attitudes**

Research has shown that teachers who hold a more favorable view of modern technological tools can more effectively integrate technology into their teaching methods. The perspectives that teachers possess regarding information and communication technologies (ICTs) play a crucial role in the educational process, as these attitudes can act as a significant obstacle to the successful incorporation of ICT in classrooms ((Laabidi 2022). In other words, negative attitudes are likely to have a profound adverse impact on the use of modern technologies for educational purposes. There is an increasing worry that anxiety towards computers or unfavorable views about them among educators and students will hinder their use of ICT tools in supporting teaching and learning ((Laabidi 2022). Altering individuals' negative perceptions is crucial for enhancing their computer proficiency. The experiences that instructors have with ICT greatly influence their favorable attitude toward utilizing it. As a result, teachers who want to successfully include technology into their courses need to be positive about the topic. This kind of mindset is promoted when teachers are comfortable with technology and know how to use it effectively (Mahdi and Al-dera 2016).

### **2.6.2. Challenges and barriers faced by teacher**

The issues that prevent teachers from using ICT are divided into three categories under Article 2019: teacher-level, school-level, and system-level restrictions. Lack of ICT proficiency, lack of confidence, lack of academic teacher training, lack of innovative follow-up, and lack of training

programs are examples of teacher-level hurdles. Inadequate project-related experience, limited access to ICT, obsolete or inferior hardware, and a lack of ICT strategies incorporated into school policy are some of the obstacles at the school level. At the system level, the obstacles include restrictive administrative structures, obsolete pedagogical approaches, old appraisal processes, and curricula that are too narrowly designed. The process of integrating ICT into teaching and learning is difficult and may encounter several challenges. We call these problems "challenges." A challenge is any situation that makes progress or achieving an objective difficult (Ghavifekr, Kunjappan, and Ramasamy 2006). The following are some of the primary challenges that educators face while implementing ICT in the classroom: limited network connectivity and accessibility; schools with limited technical assistance; insufficient training; time restrictions; and low instructor proficiency.

### **2.6.3. Support and resources**

ICT can be implemented in a variety of ways that influence how effectively teachers and students alike memorize materials pertaining to their respective subject areas. To improve learning and encourage critical thinking, development-based teaching and learning offers a range of engaging strategies that incorporate teacher recordings, prompting, data capacity, database utilization, mind mapping, guided disclosure, conceptualizing, and music (Patil 2018). ICT integration, on the other hand, will help understudies because it will release them from the restricted educational modules and resources. A technology-based course's step-by-step practical exercises are intended to assist students better understand the subject matter. The dynamic learning of their students will also change for teachers who create their lesson plans with success, creativity, and curiosity in mind. Prior studies have demonstrated that incorporating ICT into instruction improves student readiness and maximizes their capacity for dynamic learning (Patil 2018). Technology-based teaching and learning has the potential to significantly improve education, but it requires thorough preparation and strategy formulation. For long-term planning, analysts and policymakers must agree. ICT initiatives can serve a number of vital purposes. They offer a set of objectives, a comprehension of how educational frameworks work, and a considered approach when ICT is used into teaching and learning. In a given country, they are advantageous to the general public, parents, teachers, and students. Malaysia's Ministry of Instruction has created three primary ICT in education arrangements. All pupils must be provided the opportunity to use ICT in order to implement the first method. This could contribute to reducing the educational system's digital gap. ICT's contribution to

education is currently being highlighted. Furthermore, another tactic encouraged the use of ICT as a tool for efficiency, data access, and communication (Patil 2018).

### **2.7. Impact of ICT on teaching and learning practice in secondary schools**

Around the world, people are talking about the haves and have-nots. The "digital divide," or the gap between those who have access to and are proficient with technology and those who do not, has been the subject of nearly all of the research on the topic. Even while telecommunications coverage has increased significantly in poorer nations, the global digital divide is still widening. Some communities benefit from having extensive access to the Internet because it gives them the technological know-how they need to thrive in the digital economy (Afzal, Daud, and Training 2023). By no means is the concept of a "digital divide" novel. The terms "information rich" and "information poor" were frequently used in the late 1980s and early 1990s. The Internet's widespread accessibility then further highlighted the divide between the knowledgeable and the uninformed (Afzal, Daud, and Training 2023). On a national and international level, disparities in computer ownership, information technology access, and basic Internet connectivity metrics have shed light on social inequality.

According to (Afzal, Daud, and Training 2023), they give the rhetoric of the information rich versus the information poor a concrete form, raising awareness of distributive injustice among those who should be concerned. The "digital divide" is the term we use to describe differences in how people use digital technology. However, rather than being a microcosm of larger societal issues, the digital divide has garnered increasing public attention as a technology issue (Afzal, Daud, and Training 2023). Technology integration in education is crucial for a number of reasons. In the first place, it makes learning more dynamic and interesting by allowing students to explore concepts using multimedia tools, virtual worlds, and interactive simulations (Eden, Chisom, and Adeniyi 2024). This technological utilization promotes engagement and a deeper understanding of the subject matter, which ultimately enhances memory retention. Additionally, by enabling teachers to design personalized learning experiences that cater to each student's particular learning style and pace, this technology promotes diversity and accessibility.

### **2.8. Equity and Accessibility issue**

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the subject of nearly all of the research on the topic. Even while telecommunications coverage has increased significantly in poorer nations, the global digital divide is still widening. Some communities benefit from having extensive access to the Internet because it gives them the technological know-how they need to thrive in the digital economy (Afzal, Daud, and Training 2023). By no means is the concept of a "digital divide" novel. The terms "information rich" and "information poor" were frequently used in the late 1980s and early 1990s. The Internet's widespread accessibility then further highlighted the divide between the knowledgeable and the uninformed (Afzal, Daud, and Training 2023). On a national and international level, disparities in computer ownership, information technology access, and basic Internet connectivity metrics have shed light on social inequality.

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## **2.9. Conceptual framework**

To ascertain the relationship between the factors stated under evaluation, a conceptual framework has been established. The effective use of ICT in teaching is a dependent variable in the conceptual framework, whereas the perceived ease of use, perceived benefits of using ICT in teaching, attitudes toward using ICT in teaching, and the barriers that prevent teachers from using ICT in their teaching are independent variables. Each of the aforementioned five factors influences a person's intention to use new technology. In order to assess if these factors may affect the intention to utilize ICT in the teaching and learning process at a chosen secondary school in Oromia Regional State, this study will use these variables to propose a research model.

The direction of arrows shows the fundamental element that affect the use of ICT in teaching

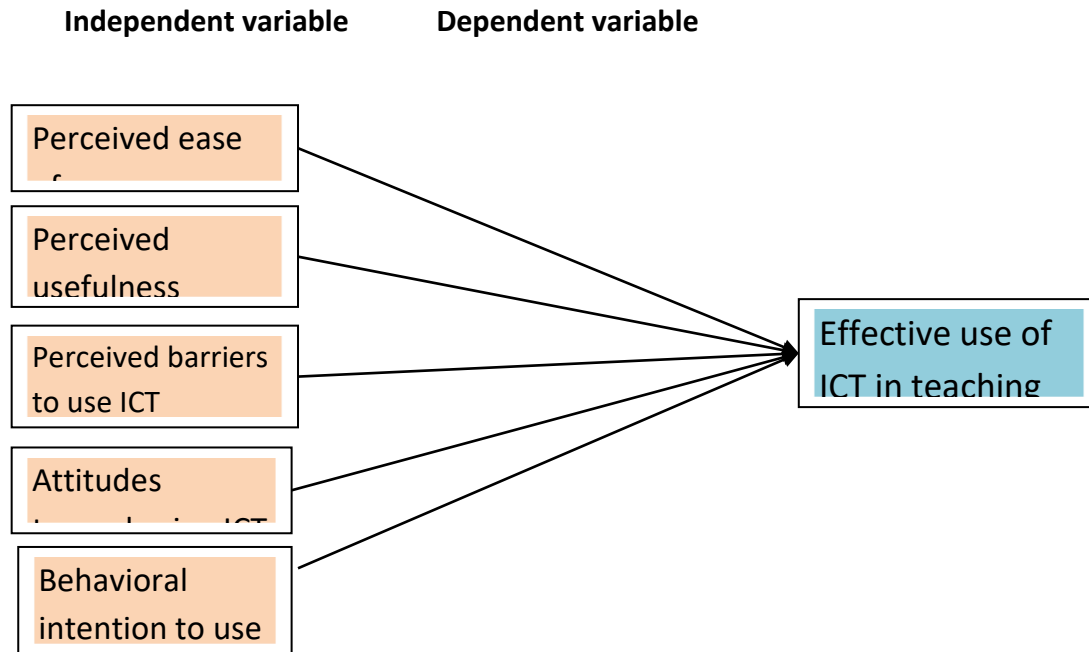


Figure2.2. Conceptual framework

This framework's objective is to construct additional independent variables for investigating local context-based factors influencing ICT and utilization in a chosen secondary school in Ethiopia's Oromia regional state.

### 2.10. Research Gap

According to the literature evaluations, studies of ICT use in the classroom have been conducted both inside and outside of Africa. The majority of these studies were carried out to evaluate how well ICT was used in the classroom. Very little research has been done to evaluate teachers' experiences using ICT to support instruction in the classroom. A study on the evaluation of secondary school teachers' ICT usage and its implications for the future growth of ICT use in Nigerian secondary schools was conducted by (Ayodele and Education 2007). The researcher's evaluation of related literature revealed that no such study had been done on evaluating teachers' experiences using ICT to support instruction in a chosen secondary school in Ethiopia, Ginnir woreda, to give teachers instruction on how to effectively use ICT. Ethiopia was not covered in the aforementioned studies. As a result, our study sought to close a contextual gap.

**Table 2.1 Summary of Key Studies of Related Work**

No	Related literature	Author	Literature gaps
1	Assessment of secondary school teacher's use of ICT	Ayodele, Adewuyi, and Math Science Education. 2007.	Focused on the on the assessment of teachers use of ICT in urban which is ICT more facilitated area of Nigeria, rather than focusing on the rural and less ICT facilities in Ethiopia.
2	The Impact of Teachers' Age, Gender and Experience on the Use of Information and Communication Technology in EFL Teaching	Mahdi, Hassan Saleh, and Abdullah Sa Aldera. 2016	Focused on investigating the effect of teachers' age, teaching experience, and gender on the integration of ICT into language teaching in EFL situations. This didn't address the teacher's experience of using ICT in facilitating teaching process.

## **CHAPTER THREE**

### **3. RESEARCH METHODOLOGY**

#### **3.1. Introduction**

The research methodologies that were employed are the main topic of this chapter. The research design, study population coverage, sampling methods and methodologies, data collection tools, and data analysis approaches were all covered in this chapter.

#### **3.2. Research design**

Information on teachers' experiences using ICT to support teaching and learning in Ethiopian secondary schools was gathered for this study via a descriptive survey. Because teachers could easily provide information about their opinions or beliefs regarding certain study concerns in their natural setting, a descriptive survey research approach was chosen. Reconstructing the "what is" of a topic can be accomplished by combining quantitative and qualitative data using a descriptive survey research design. Getting data from a specific group of people is the primary goal of descriptive survey design in order to extrapolate sample results to the entire population. Because the researcher wished to determine the attitude, ideas, views, and sentiments of teachers regarding their usage of ICT in school, the descriptive survey design was chosen. Additionally, the design was chosen because it would allow the researcher to collect and distribute the surveys to a sizable sample.

#### **3.3. Area of the Study**

The research was carried out in Ginnir Werada, which is in the Oromia region. The East Bale Zone in Oromia, Ethiopia, is home to Ginnir Woreda. It is around 580 kilometers to the southeast of Addis Ababa. Ginnir Town, the capital of the East Bale Zone, is home to the woreda's headquarters. The Ginnir Woreda was chosen since the researcher was familiar with the area and could easily obtain information from the respondents due to its accessibility. The perfect location, the researcher's interest, ease of access, and the opportunity to establish an instant understanding with responders are the reasons the researcher chose this place. The survey was carried out in secondary schools in Ginnir woreda.

#### **3.4. Data Source**

Teachers from four distinct secondary schools served as the study's data source; two of these schools had ICT labs and equipment, while the other two did not. The information for this study came from

both primary and secondary data sources. The researcher's observation checklist, interview, and respondents' thoughts on the questionnaire served as the main sources of data in this case. In a similar vein, the study's secondary materials included reference books and past research projects.

### **3.5. Study Population**

According to a report by the Ginnir Woreda Education Bureau, Ginnir Werada is home to seven secondary schools. The researcher uses purposive sampling to choose four of those secondary schools for the investigation. Information for this study came from both primary and secondary data sources. Here, the researcher's observation checklist, interview, and respondents' responses to the questionnaire served as the main sources of data. In a similar vein, the study's secondary materials included reference books and past research projects. The chosen schools offer greater ICT resources and a conducive study environment. Four principals, four vice-principals, and six ICT teachers make up the study's population, which consists of 46 teachers from Dello Sebro Secondary School, 25 teachers from Elbuko Secondary School, 30 teachers from Akasha Secondary School, and 28 teachers from Kara Ifa Boru Secondary School. In conclusion, there were 143 people in the study's entire population. Subject teachers in secondary schools are the study's target demographic since they play a significant role in implementing ICT into the classroom. The participants in this study were required to provide their opinions.

### **3.6. Sample Size and Sampling Technique**

Four public secondary schools with and without ICT facilities in Gindhir woreda made up the study's sample unit. Teachers in the corresponding secondary schools were the study's target population. Dello Sebro, Elbuko, Akasha, and Kara Ifa Boru secondary schools were the study's target schools, respectively, since the researcher had enough time and opportunity to learn about each secondary school's usage of ICT to support instruction. Random sampling was used in this study to choose sample participants from each of the chosen regions.

A total of 143 instructors from four secondary schools were chosen to participate in the study by answering questionnaires. Kothari's formula for determining the sample size was utilized.

$$n = \frac{e^2 (N-1) + z^2 * p * q}{(z^2 * p * q * N)}$$

where  $q=1-p$ ,  $N$ =population size,  $n$ =sample, and  $P$ =estimated population features ( $p=0.5$ ).

$Z$  is the amount of confidence (1.96).

(0.05)  $\alpha$ =Acceptable (marginal) error

Purposeful sampling was used to choose 143 teachers, 4 principals, 4 vice-principals, and 6 ICT instructors based on the Kothari formula.

### **3.7. Data collection Instrument**

Purposive sampling was used for this study in light of the researchers' existing understanding of the sample subject; it offers control over important study variables and ensures that the people in the samples are homogeneous. This sample technique was chosen to enable the researcher to focus on individuals with specific traits who will be helping the researcher with pertinent study. The benefits of purposive sampling include ease of sample selection, low cost, quick sample selection, and findings that are representative of the target population when compared to other sampling techniques. In general, four secondary schools were chosen in order to gather the necessary data regarding the usage of ICT to support instruction in particular Ginnir Woreda secondary schools. The researcher observed classes, administered questionnaires, and conducted interviews.

#### **3.7.1. Questionnaires'**

This survey was created using closed-ended rating scale items. 115 target teachers were given the questionnaire, which had 31 items. The responses to these questions were of the Likert scale item type include(very difficult, Difficult, Neutral, Easy, very easy, not at all, slightly, moderately, very, extremely, very friendly, unfriendly, friendly, very friendly, never, rarely, sometimes, often, always, very dissatisfied, dissatisfied, satisfied, very satisfied, occasionally, frequently, very frequently, strongly agree, Disagree, Neutral, Agree, strongly disagree). As a result, a survey would be conducted and given to respondents in four secondary schools. A total of thirty-one questions were prepared for the participants. Only four of the thirty-one surveys were not returned by the respondents. This demographic is suitable for this study because of the delicate nature of the research issue. Both closed-ended and open-ended questionnaires were given to teachers in order to help the researcher and allow respondents to give precise answers in accordance with the research study.

#### **3.7.2. Interview**

Additionally, three open-ended interview questions were written by the researcher using the short answer item type. The researcher then gave the prepared interview guide questions to the two principals, one vice-principal, and two ICT teachers of the target schools—that is, the teachers per

school at Dello Sebro Secondary Schools 1, Elbuko Secondary Schools 1, Akasha Secondary Schools 1, and Kara Ifa Boru Secondary Schools 1 directly there. 9 interviewees in total were taken.

### **3.7.3. Classroom Observation**

For this study, an observation checklist was created to evaluate how teachers in a few secondary schools in the Oromia region specifically, Ginnir Woreda secondary schools use ICT to support the teaching process. The researcher chose one grade 11 section at random from each school to observe. The researcher personally made the observations in each segment for four weeks in a row.

### **3.8. Procedures of data collection**

The researcher created the instruments in accordance with the study's goals. The respondents promised that their answers would be kept private, and the researcher verified that their answers would only be utilized for scholarly research. The researcher only knew who answered the questions on each questionnaire, which was coded, given, and collected from the responder. In order to gather primary data, the coding technique was solely used to match completed questionnaires that were returned with those that were given to the respondents. Last but not least, the researcher personally carried out the observation in the chosen part for four weeks in a row.

### **3.9. Data analysis**

Both qualitative and quantitative methods were used to analyze the study's findings. The questionnaire was created and revised for consistency and completeness prior to processing the answers. In particular, the Statistical Package for the Social Sciences (SPSS) version 27 software was used to analyze, interpret, and present the qualitative descriptions of the questionnaire responses that were gathered from the reflections.

### **3.10. Ethical Consideration**

The researcher used ethical concern to make the study process professional. The researcher explained to the respondents that the study was conducted for academic purposes only, and that this information was also covered in the questionnaire's introduction and interview guide. In this case, the researcher additionally guaranteed respondents' agreement and validated the confidentiality of the subjects. Finally, credit was given to all of the materials used in this study. Obtaining approval and the respondents' informed agreement, as well as upholding confidentiality, are ethical guidelines for study.

## CHAPTER FOUR

### 4. DATA PRESENTATION AND DISCUSSION

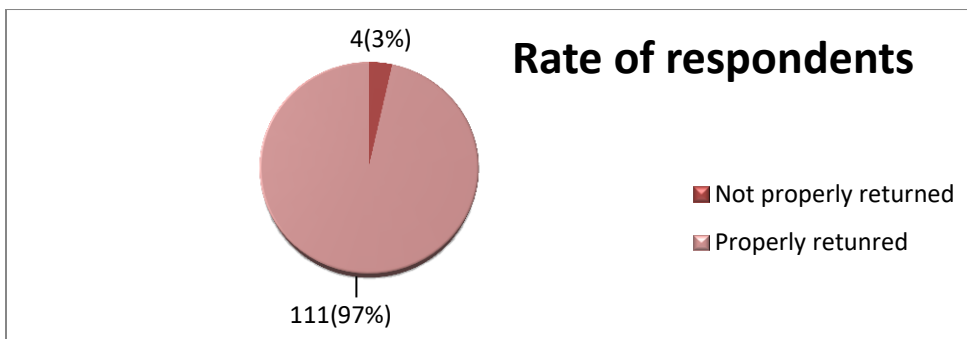
#### 4.1. Introduction

The outcomes of data analysis using both quantitative and qualitative methods are presented in this chapter. Out of 143 respondents from four (4) secondary schools in Ginnir Woreda, 115 teachers were interviewed and questionnaires were issued in order to gather the data. The respondents' response rate is 96.52%. The following sections present the studies according to their purpose. SPSS (statistical package for social science) version 27 was the computer program used to statistically evaluate the data gathered via surveys. There are 31 items in all on the questionnaire. Likert-type scales covering very difficult, difficult, neutral, easy, very easy, not at all, slightly, moderately, very, extremely, very friendly, unfriendly, friendly, very friendly, never, rarely, sometimes, often, always, very dissatisfied, dissatisfied, satisfied, very satisfied, occasionally, frequently, very frequently, strongly agree, disagree, neutral, agree, strongly disagree were used to measure all but seven items.

#### 4.2. Rate of Respondents

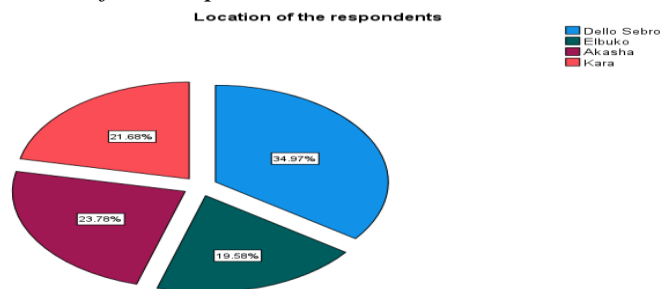
The validity of the survey can be understood by looking at the response rate, which is the percentage of all chosen respondents who finish the survey. The population size at the time of data collection was 143. All of these possible respondents were given the questionnaire in order to gather the necessary data regarding the use of ICT to support instructional activities in certain secondary schools. Out of 115 respondents, 111 (96.52%) returned the questionnaires, while 4 (3.48%) did not, as seen in figure 4.1 below. Therefore, 111 (96.52%) of the questionnaires that were gathered were used for the analysis and interpretation of the respondents, which is sufficient for this study.

Figure 4.1. rate of the respondents



### 4.3. Respondent Location

Figure 4.2. Location of the respondents



### 4.4. General information of the respondents

#### 4.4.1. Demographic status of the respondents

In this section the information of respondents such like gender, age, year of service as a teacher and level of education were presented.

Table 4.1. sex, Age, experience and Qualification of the respondents

		Frequency	per cent	Valid per cent	Cumulative per cent
Gender	Male	74	66.7	66.7	66.7
	Female	37	33.3	33.3	100.0
	Total	111	100.0	100.0	
	25-35	22	19.8	19.8	19.8

Age	36-45	56	50.5	50.5	70.3
	46-50	19	17.1	17.1	87.4
	above 50	14	12.6	12.6	100.0
	Total	111	100.0	100.0	
Experience	1-5 year	16	14.4	14.4	14.4
	5-10 year	49	44.1	44.1	58.6
	above 10 year	46	41.4	41.4	100.0
	Total	111	100.0	100.0	
Qualification	Postgraduate	6	5.4	5.4	5.4
	First degree	81	73.0	73.0	78.4
	Diploma	24	21.6	21.6	100.0
	Total	111	100.0	100.0	

The table 4.1 presented below indicates that out of the total number of the respondents 111, 74(66.7%) were male and 37(33.3%) female. The finding of the study indicates that the majority of the respondents were male and the table 4.1 shows the age of the respondents indicate 22(19.8%) is 25-35 years, 56(50.5%) is 36-45 years, 19(17.1%) is 46-50 and 14(12.6) is above 50 years. this indicate the majority the respondents were in the range of the age 36-45 that means the most the respondents of the questionnaires were above 35 and below 46 stages.

As the table 4.1 shows the researcher grouped the year of service of the teachers as 1-5 year, 5-10 year and above 10 year. The finding of this study indicates that the experience of the teachers 1-5 year is 16(14.4%), 5-10 years is 49(44.1%) and above 10 year is 46(41.4%). The result shows that the number of respondents 1-5 year experience is the least number the three groups of respondents in years of serving as teachers and 5-10 years' experience is the majority group of the respondents with 44.1% of 111 total respondents.

From the teachers response the researcher discovers level of education. The study found out that 6(5.4%) of the respondents are postgraduates, 81(73%) of the respondents had first degree and 24(21.6%) of the respondents are diploma qualifications holders. The finding of the study shows the majority of the respondents were first degree with the 81(73%) of the total respondents.

#### 4.5. Perceived ease of use of ICT in teaching

This study finds that teaching in a few secondary schools can be made easier by utilizing information and communication technology.

*Table4.2. using ICT tools in teaching, relation to ICT tools provided by schools, teachers experience with ICT tools.*

How easy is it for you to learn new ICT tools used in teaching?					
		Frequency	Percent	Valid percent	Cumulative percent
Valid	very difficult	25	22.5	22.5	22.5
	Difficult	46	41.4	41.4	64.0
	Easy	34	30.6	30.6	94.6
	Very easy	6	5.4	5.4	100.0
	Total	111	100.0	100.0	
How user-friendly are the ICT tools provided by your school?					
valid	very unfriendly	30	27.0	27.0	27.0
	Unfriendly	40	36.0	36.0	63.1
	Friendly	24	21.6	21.6	84.7
	very friendly	17	15.3	15.3	100.0

	Total	111	100.0	100.0	
How often do you experienced technical difficulties with ICT tools?					
	Rarely	17	15.3	15.3	15.3
	Sometimes	28	25.2	25.2	40.5
	Often	59	53.2	53.2	93.7
	Always	7	6.3	6.3	100.0
	Total	111	100.0	100.0	

Of the respondents, 25 (22.5%) said it was very difficult, 46 (41.4%) said it was difficult, 34 (30.6%) said it was easy, and 6 (5.4%) said it was very easy, according to Table 4.2. This suggests that the majority of respondents (46, or 41.4%) gave difficult answers when asked how easy it was to use new ICT tools to support instruction. This indicates that the majority of respondents had trouble utilizing ICT technologies to support secondary school instruction. Additionally, table 4.2 reveals that just 5.4% of all respondents selected "Very easy." As can be seen in Table 4.2, 30 respondents (27.0%) gave extremely unfriendly responses, 40 respondents (36.0%) gave unfriendly responses, 24 respondents (21.6%) gave friendly responses, and 17 respondents (15.3%) gave very unfriendly responses.

The majority of respondents' comments were unfriendly and extremely unfriendly with the ICT resources offered by their school, as seen in table 4.2. This led the researcher to the conclusion that the majority of teachers are not familiar with the ICT resources offered in schools.

Table 4.2 reveals that 17 respondents (15.3%) indicated that they responded infrequently, 28 respondents (25.2%) indicated that they responded occasionally, 59 respondents (53.2%) indicated that they responded frequently, and 7 respondents (6.3%) indicated that they responded always. Table 4.2 shows that the majority of respondents' answers (59, or 53.2%) frequently dealt with technical issues involving ICT technologies. Because of this, the researcher came to the conclusion that the majority of teachers have trouble using ICT technologies.

#### 4.6. Perceived usefulness

*Table 4.3. teaching effectiveness with ICT tools, role of ICT tools in classroom management, ICT tools for engaging students in the learning process.*

To what extent do you believe that ICT tools enhance your teaching effectiveness?					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	not at all	13	11.7	11.7	11.7
	Slightly	10	9.0	9.0	20.7
	Moderately	35	31.5	31.5	52.3
	Very	45	40.5	40.5	92.8
	Extremely	8	7.2	7.2	100.0
	Total	111	100.0	100.0	
How much do ICT tools help you in managing your classroom?					
valid	not at all	11	9.9	9.9	9.9
	Slightly	65	58.6	58.6	68.5
	Moderately	25	22.5	22.5	91.0
	Very	6	5.4	5.4	96.4
	Extremely	4	3.6	3.6	100.0
	Total	111	100.0	100.0	
How useful are ICT tools for engaging students in the learning process?					

Valid	Slightly	10	9.0	9.0	9.0
	Moderately	10	9.0	9.0	18.0
	Very	78	70.3	70.3	88.3
	Extremely	13	11.7	11.7	100.0
	Total	111	100.0	100.0	

Table 4.3 reveals that 13(11.7%) respondents response not at all, 10(9.0%) of the respondent response were slightly, 35(31.5%) of the total respondents response were moderately, 45(40.5%) of the respondents response were very and 8(7.2%) of the respondents response were extremely.

The table 4.3 indicates that the majority of the respondent's responses were very and moderately with their extent of believe in the enhancement of ICT tools in teaching effectiveness. As a result, the researcher came to the conclusion that the majority of teachers think that employing ICT tools may improve instruction.

Table 4.3 reveals that 11 (9.9%) of respondents said they did not answer at all, 65 (65.58%) said they responded slightly, 25 (22.5%) said they responded moderately, 6 (5.4%) said they responded substantially, and 4 (3.6%) said they responded excessively.

Table 4.3 shows that the majority of respondents used ICT tools to help manage the classroom in a mild to moderate way. The researcher came to the conclusion that most teachers only use ICT tools to a small extent in order to run their classrooms.

According to Table 4.3, 78 (70.3%) of the respondents' responses were very, 13 (11.7%) were exceedingly, and 10 (9.0%) of the respondents responded slightly, 10 (9.0%) responded moderately.

According to table 4.3, most respondents expressed a high level of satisfaction with the use of ICT tools in including students in the learning process. Because of this, the researcher came to the conclusion that the majority of teachers think that ICT tools are helpful for getting students involved in the learning process. Reveals that 10 (9.0%) of the respondents gave a slight response, 10 (9.0%) gave a moderate answer, 78 (70.3%) gave a very response, and 13 (11.7%) gave an extremely response.

According to table 4.3, most respondents expressed a high level of satisfaction with the use of ICT tools in including students in the learning process. Because of this, the researcher came to the conclusion that the majority of teachers think that ICT tools are helpful for getting students involved in the learning process.

*Table 4.4 uses ICT technology to interact with educational resources, developing confidence of using ICT technology.*

I use ICT technology to interact with educational resources					
		Frequency	per cent	Valid per cent	Cumulative per cent
Valid	strongly agree	21	18.9	18.9	18.9
	Agree	20	18.0	18.0	36.9
	Disagree	23	20.7	20.7	57.7
	strongly disagree	47	42.3	42.3	100.0
	Total	111	100.0	100.0	
I develop my confidence of using ICT technology					
valid	strongly agree	18	16.2	16.2	92.8
	Agree	31	27.9	27.9	68.5
	Neutral	9	8.1	8.1	76.6
	Disagree	45	40.5	40.5	40.5
	strongly disagree	8	7.2	7.2	100.0

	Total	111	100.0	100.0	
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According to Table 4.4, 21 respondents (18.9%) highly agreed, 20 respondents (18.0%) agreed, 23 respondents (20.7%) disagreed, and 47 respondents (42.3%) severely disagreed. This suggests that the majority of respondents disagreed, or strongly disagreed, with the idea of interacting with educational resources through ICT devices. This indicates that the majority of respondents do not engage with educational resources via ICT. Additionally, table 4.4 reveals that only 36.9% of all respondents strongly agreed and concurred.

Table 4.4 reveals that 18 respondents (16.2%) strongly agreed, 31 respondents (27.0%) agreed, 9 respondents (8.1%) were neutral, and 45 respondents (40.5%) disagreed. The majority of survey participants highly agreed and agreed with their growing ICT confidence, according to table 4.4.

#### 4.7. Attitudes toward the use of ICT in teaching

*Table 4.5 enjoyment while using ICT tools in teaching, feeling with using ICT tools makes teaching more interesting; believe in ICT tools as essential for modern teaching.*

I enjoy using ICT tools in my teaching					
		Frequency	per cent	Valid per cent	Cumulative per cent
Valid	strongly agree	35	31.5	31.5	100.0
	Agree	57	51.4	51.4	68.5
	Neutral	19	17.1	17.1	17.1
	Total	111	100.0	100.0	
I feel that using ICT tools makes teaching more interesting					
	Disagree	5	4.5	4.5	4.5

valid	Neutral	4	3.6	3.6	8.1
	Agree	67	60.4	60.4	68.5
	strongly agree	35	31.5	31.5	100.0
	Total	111	100.0	100.0	
I believe that ICT tools are essential for modern teaching					
Valid	Neutral	12	10.8	10.8	10.8
	Agree	57	51.4	51.4	62.2
	strongly agree	42	37.8	37.8	100.0
	Total	111	100.0	100.0	

Table4.5 shows that 19(17.1%) of the respondents response were neutral, 57(51.4%) of the respondent response Agree, 35(31.5%) of the total respondent response were strongly agree. The table4.5 indicates that the majority of the respondent's responses were agreed with the enjoyment with ICT tools when using in teaching practice. Due to that the researcher concluded that most of the teachers agree with enjoyment with ICT tools in teaching practice.

Table4.5 shows that 7(6.3%) of the respondents response were strongly disagree, 5(4.5%) of the respondent response disagree, 4(3.6%) of the total respondent response were neutral, 77(69.4%) of the respondent response agree, 18(16.2%) of the total respondent response were strongly agree. The table4.5 indicates that the majority of the respondent's responses were agreed with their feeling of using ICT tools makes teaching more interesting. Due to that the researcher concluded that most of the teachers with 69.4% agree with their feeling of using ICT tools makes teaching more interesting.

Table4.5 shows that 12(10.8%) of the respondents response were neutral, 57(51.4%) of the respondent response agree, 42(37.8%) of the total respondent response were strongly agree. The table4.5 indicates that the majority of the respondent's responses were agreed with their belief in

ICT tools as they are essential for modern teaching. Due to that the researcher concluded that most of the teachers agreed with their belief in ICT tools as they are essential for modern teaching.

*Table4.6. teachers believe in ICT Widens access to educational resources, believe in using ICT makes teaching process easier.*

I believe that ICT Widens access to educational resources					
		Frequency	per cent	Valid per cent	Cumulative per cent
Valid	strongly disagree	3	2.7	2.7	2.7
	Disagree	16	14.4	14.4	17.1
	Neutral	6	5.4	5.4	22.5
	Agree	33	29.7	29.7	52.3
	strongly agree	53	47.7	47.7	100.0
	Total	111	100.0	100.0	
I believe that using ICT makes teaching process easier					
valid	strongly disagree	3	2.7	2.7	2.7
	Disagree	6	5.4	5.4	8.1
	Neutral	3	2.7	2.7	10.8
	Agree	37	33.3	33.3	44.1
	strongly agree	62	55.9	55.9	100.0
	Total	111	100.0	100.0	

Table4.6 shows that 19(17.1%) of the respondents response were neutral, 57(51.4%) of the respondent response Agree, 35(13.5%) of the total respondent response were strongly agree. The table4.6 indicates that the majority of the respondent’s responses were agreed with the enjoyment with ICT tools when using in teaching practice. Due to that the researcher concluded that most of the teachers agree with enjoyment with ICT tools in teaching practice.

Table4.6 shows that 7(6.3%) of the respondents response were strongly disagree, 5(4.5%) of the respondent response disagree, 4(3.6%) of the total respondent response were neutral, 77(69.4%) of the respondent response agree, 18(16.2%) of the total respondent response were strongly agree. The tabl4.5 indicates that the majority of the respondent’s responses were agreed with their feeling of using ICT tools makes teaching more interesting. Due to that the researcher concluded that most of the teachers with 69.4% agree with their feeling of using ICT tools makes teaching more interesting.

Table4.6 shows that 12(10.8%) of the respondents response were neutral, 57(51.4%) of the respondent response agree, 42(37.8%) of the total respondent response were strongly agree. The table4.6 indicates that the majority of the respondent’s responses were agreed with their belief in ICT tools as they are essential for modern teaching. Due to that the researcher concluded that most of the teachers agreed with their belief in ICT tools as they are essential for modern teaching.

#### 4.8. Behavioural Intention to use ICT in teaching

*Table4.7. teacher’s willingness to use ICT tools, incorporating new ICT tools into teaching, likely using ICT tools.*

I plan to use ICT tools more frequently in my future lessons					
		Frequency	Per cent	Valid per cent	Cumulative per cent
	strongly disagree	4	3.6	3.6	3.6
	Disagree	6	5.4	5.4	9.0
	Neutral	13	11.7	11.7	20.7

Valid	Agree	52	46.8	46.8	67.6
	strongly agree	36	32.4	32.4	100.0
	Total	111	100.0	100.0	
I intend to incorporate new ICT tools into my teaching as they become available					
valid	Neutral	20	18.0	18.0	18.0
	Agree	47	42.3	42.3	60.4
	strongly agree	44	39.6	39.6	100.0
	Total	111	100.0	100.0	
I am likely to use ICT tools even if they are not required by the curriculum					
Valid	strongly disagree	4	3.6	3.6	3.6
	Disagree	4	3.6	3.6	7.2
	Neutral	32	28.8	28.8	36.0
	Agree	62	55.9	55.9	91.9
	strongly agree	9	8.1	8.1	100.0
	Total3	111	100.0	100.0	

According to Table 4.7, 45 respondents (40.5%) disagreed, 9 respondents (8.1%) were neutral, 31 respondents (27.0%) agreed, and 18 respondents (16.2%) strongly agreed. Table 4.7 shows that most survey respondents agreed and highly agreed with their increasing ICT confidence.

According to Table 4.7, 77 (69.4%) of respondents agreed, 18 (16.2%) strongly agreed, 5 (4.5%) disagreed, 4 (3.6%) were neutral, and 7 (6.3%) severely disagreed. The majority of respondents agreed, as shown in tabl4.7, that employing ICT tools makes teaching more engaging. As a result, the researcher found that the majority of teachers (69.4%) concur that employing ICT tools makes teaching more engaging.

Table 4.7 reveals that 42 (37.2%) of the respondents strongly agreed, 57 (51.4%) agreed, and 12 (10.8%) were neutral by response. Based on the data shown in Table 4.7, the majority of respondents believed that ICT tools are necessary for modern teaching. Therefore, the researcher came to the conclusion that the majority of teachers shared the belief that ICT tools are necessary for modern instruction.

#### 4.9. Actual System Use

*Table4.8. teacher’s using ICT tools in your daily teaching, types of ICT tools teachers used most frequently, integrating ICT tools the lesson plans.*

How often do you use ICT tools in your daily teaching?					
		Frequency	per cent	Valid per cent	Cumulative per cent
Valid	Never	63	56.8	56.8	56.8
	Rarely	11	9.9	9.9	66.7
	Sometimes	37	33.3	33.3	100.0
	Total	111	100.0	100.0	
What types of ICT tools do you use most frequently in your teaching?					
	laptop/tablet	14	12.6	12.6	18.9

	educational software	4	3.6	3.6	22.5
	online resource	32	28.8	28.8	51.4
	not any ICT device	54	48.6	48.6	100.0
	Total	111	100.0	100.0	
How integrated are ICT tools in your lesson plans?					
Valid	not at all	4	3.6	3.6	3.6
	Slightly	14	12.6	12.6	16.2
	Moderately	70	63.1	63.1	79.3
	Very	13	11.7	11.7	91.0
	Extremely	10	9.0	9.0	100.0
	Total	111	100.0	100.0	

According to Table 4.8, 63 respondents (56.7%) said they never responded, 11 respondents (9.9%) said they responded infrequently, and 37 respondents (33.3%) said they responded occasionally. The majority of respondents never mentioned utilizing ICT tools in their regular teaching, as table 4.8 demonstrates. This suggests that the majority of secondary school instructors at the chosen institution never use ICT tools in their day-to-day instruction.

Table 4.8 indicates that 14 respondents (12.6%) use computers, four respondents (3.6%) use instructional software, thirty-two respondents (28.8%) use online resources, and seven respondents (6.3%) use interactive white boards. Among those surveyed, 54 (48.6%) reported not using any ICT gadgets.

The majority of respondents did not use any ICT devices, as table 4.8 demonstrates. This shows that 48.6% of all respondents, or the majority of instructors at the chosen secondary school, do not use any ICT tools to help with instruction.

Table 4.8 reveals that 4 respondents (3.6%) said they did not answer at all, 14 respondents (12.6%) said they responded slightly, 70 respondents (63.1%) said they responded moderately, 13 respondents (11.7%) said they responded substantially, and 10 respondents (9.0%) said they responded excessively. The bulk of respondents' comments were moderate, as table 4.8 demonstrates. This suggests that the majority of secondary school teachers at the chosen institution use ICT tools in their lesson plans in a modest manner.

#### 4.10. Support and Professional Development

*Table 4.9. teacher's satisfaction with the technical support, the effectiveness of professional development programs and teacher's participation on professional development related to ICT.*

How satisfied are you with the technical support provided for ICT tools?					
		Frequency	per cent	Valid per cent	Cumulative per cent
Valid	very dissatisfied	58	52.3	52.3	52.3
	Dissatisfied	19	17.1	17.1	69.4
	Neutral	24	21.6	21.6	91.0
	Satisfied	6	5.4	5.4	96.4
	very satisfied	4	3.6	3.6	100.0
	Total	111	100.0	100.0	
How effective are the professional development programs in improving your ICT skills?					
valid	slightly effective	51	45.9	45.9	45.9
	moderately effective	49	44.1	44.1	90.1
	very effective	5	4.5	4.5	94.6

	extremely effective	6	5.4	5.4	100.0
	Total	111	100.0	100.0	
How often do you participate in professional development related to ICT?					
]Valid	Never	34	30.6	30.6	30.6
	Rarely	48	43.2	43.2	73.9
	Occasionally	23	20.7	20.7	94.6
	Frequently	6	5.4	5.4	100.0
	Total	111	100.0	100.0	

Table 4.9 reveals that 58 participants (52.3%) expressed extreme dissatisfaction, 19 respondents (17.1%) expressed dissatisfaction, 24 respondents (21.6%) expressed neutrality, 6 respondents (5.4%) expressed satisfaction, and 4 respondents (3.6%) expressed extremely satisfaction. The majority of respondents (52.3%) expressed extreme dissatisfaction, as indicated in table 4.9. This shows that a large majority of the secondary school teachers in the chosen school were extremely unhappy with the technical assistance they received with ICT tools.

According to Table 4.9, 51 respondents (45.9%) indicated that their responses were somewhat effective, 49 respondents (44.1%) indicated that they were moderately effective, 5 respondents (4.5%) indicated that they were very effective, and 6 respondents (5.4%) indicated that they were highly effective. Table 4.9 demonstrates that most respondents' responses were only marginally successful in enhancing their ICT skills through their professional development programs. This suggests that there are insufficient professional development opportunities to enhance teachers' ICT proficiency.

According to Table 4.9, 34 respondents (30.6%) said they never responded, 48 respondents (43.2%) said they seldom responded, 23 respondents (20.7%) said they responded very sometimes, and 6 respondents (5.4%) said they responded regularly. Table 4.9 demonstrates that the majority of

respondents rarely provided information on their involvement in ICT-related professional development. This suggests that the majority of secondary school teachers in the chosen institutions hardly ever take part in ICT-related professional development.

#### 4.11. Perceived Barriers with using ICT in teaching

*Table 4.10. there is lack of ICT technical support, insufficient time to use ICT technology in teaching, lack of government support to improve ICT usage in teaching, lack of ICT training.*

There is a lack of ICT technical support					
		Frequency	per cent	Valid per cent	Cumulative per cent
Valid	strongly disagree	6	5.4	5.4	5.4
	Disagree	22	19.8	19.8	25.2
	Neutral	1	.9	.9	26.1
	Agree	31	27.9	27.9	54.1
	strongly agree	51	45.9	45.9	100.0
	Total	111	100.0	100.0	
I don't have sufficient time to use ICT technology in teaching					
valid	strongly disagree	8	7.2	7.2	7.2
	Disagree	16	14.4	14.4	21.6
	Neutral	3	2.7	2.7	24.3
	Agree	48	43.2	43.2	67.6
	strongly agree	36	32.4	32.4	100.0

	Total	111	100.0	100.0	
There a lack of government support to improve ICT usage in teaching					
Valid	strongly disagree	8	7.2	7.2	7.2
	Disagree	16	14.4	14.4	21.6
	Neutral	7	6.3	6.3	27.9
	Agree	33	29.7	29.7	57.7
	strongly agree	47	42.3	42.3	100.0
	Total	111	100.0	100.0	
There is a lack of ICT training					
Valid	strongly disagree	6	5.4	5.4	5.4
	Disagree	16	14.4	14.4	19.8
	Neutral	7	6.3	6.3	26.1
	Agree	49	44.1	44.1	70.3
	strongly agree	33	29.7	29.7	100.0
	Total	111	100.0	100.0	

According to Table 4.10, 51 respondents (45.9%) highly agreed, 31 respondents (279.9%) agreed, 1 respondent (0.9%) was neutral, 22 respondents (19.8%) disagreed, and 6 respondents (5.4%) severely disagreed. The majority of respondents strongly agreed and agreed with the lack of ICT technical help, according to the study's findings in table 4.10. The researcher came to the general conclusion that their school lacks ICT technical help. As a result, most teachers are unable to use ICT to support secondary school instruction.

Table 4.10 reveals that 56 respondents (50.5%) highly agreed, 28 respondents (25.2%) agreed, 3 respondents (2.7%) were neutral, 16 respondents (14.4%) disagreed, and 8 respondents (7.2%) severely disagreed. According to table 4.10, the majority of respondents strongly agreed that there was not enough time to use ICT to support secondary school instruction.

The data shown in Table 4.10 indicate that 51 respondents (45.9%) highly agreed, 33 respondents (20.7%) agreed, 7 respondents (6.3%) were neutral, 12 respondents (10.6%) disagreed, and 8 respondents (7.2%) severely disagreed. The majority of respondents strongly agreed with the lack of government assistance to enhance the use of ICT in secondary school instruction, as shown in table 4.10.

According to Table 4.10, 43 respondents (38.7%) highly agreed, 39 respondents (35.1%) agreed, 8 respondents (7.2%) were neutral, 15 respondents (13.5%) disagreed, and 6 respondents (5.4%) severely disagreed. The majority of respondents strongly agreed and agreed with the lack of ICT training, as shown in table 4.10. As a result, the researcher came to the conclusion that the majority of teachers lack ICT training.

*Table 4.11. the main challenges teachers face while using ICT tools in teaching*

What are the main challenges you face when using ICT tools in teaching?					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	lack of training	23	20.7	20.7	20.7
	technical problems	10	9.0	9.0	62.2
	insufficient resources	59	53.2	53.2	53.2
	time constraints	10	9.0	9.0	91.9
	lack of support	9	8.1	8.1	100.0
	Total	111	100.0	100.0	
	Total	111	100.0	100.0	

According to Table 4.11, 23 respondents (20.7%) reported a lack of training, 10 respondents (9.0%) reported a technical issue, 59 respondents (53.2%) reported a lack of resources, 10 respondents (9.0%) reported time restrictions, and 9 respondents (8.1%) reported a lack of support.

Table 4.11 shows that the majority of respondents said they were not trained on the primary difficulties that could arise while utilizing ICT technologies in the classroom. This suggests that the primary barrier to using ICT tools for instruction in certain secondary schools is a lack of resources.

#### 4.12. Interview questionnaires'

The responses that were gathered from the respondents during in-person interviews are displayed in accordance with the study's goal.

**Question1.** What is your opinion on the benefits of using ICT in facilitating teaching activities in your school?

According to the majority of respondents in the interviews between the interviewer and the respondents, the majority of respondents answered this question by listing the potential advantages of using ICTs in the classroom. These advantages included the following observations: facilitates and eases the teaching process; ICTs increase access to educational resources; ICTs pique students' interest in the subject; ICT use makes learning more independent; ICT use improves students' comprehension of the subject; ICT use in the classroom allows students to collaborate; and ICT use increases students' engagement and attachment to the lesson.

**Question2.** Barriers that hinder teachers from using ICT to facilitate teaching

In their verbal responses, the majority of respondents listed the common barriers that prevent the use of ICT to facilitate teaching and learning. The researchers have identified the most frequently mentioned barriers, which include: lack of access to and availability of ICT resources; inadequate ICT resources in schools; lack of training on ICT use that hinders its effective use in teaching; teachers' negative attitudes toward the use of ICTs in teaching; and the lack of technical support staff. When questioned about the obstacles to using ICT to support instruction, many responded that they lacked the necessary ICT skills and knowledge.

**Question3.** What improvements would you suggest for better integration of ICT tools in your teaching practice?

According to the majority of respondents, the government ought to give teachers basic ICT training that covers both how to utilize ICT tools and how to incorporate ICT into their lesson plans. Since integrating ICT into the classroom improves the learning process, the government and education investors should make the required accommodations.

**Question4.** What are the main challenges you face when using ICT tools in teaching?

The majority of respondents verbally listed the typical difficulties they encountered when utilizing ICT to support teaching and learning. The researchers have determined that the most frequently mentioned difficulties in this study are technical issues, a lack of resources, time constraints, and lack of support.

**4.13. Observation Results of Availability of ICT equipment tools or facilities in the Selected Secondary Schools of Ginnir Woreda.**

As part of the observation, it was determined whether the schools had enough computer lab space, desktop computers, LCD projectors, a wide-band internet connection, and Wi-Fi. As indicated in table 4.12, the researcher would mark any ICT equipment provided by chosen secondary schools with a checkmark [√]. Information on the availability of ICT equipment in the chosen secondary schools in Ginnir Woreda was the primary goal of this study. As a result, the table provides a summary of the observation findings.

*Table4.12. Observation*

School name	computer laboratory	computer desktops	LCD projectors	broad band internet connection	Wi-Fi connection
Dello Sebros	√	√	√		√
Elbuko	√	√	-	-	-
Akasha	√	√	-	-	-
Kara ifa boru	√	√	-	-	√

The aforementioned findings demonstrated that none of the four (4) secondary schools that were chosen for the study had all of the ICT tools that were required in order for ICT to support instruction. Additionally, none of the chosen schools had Broad Band Internet connections, just two schools had Wi-Fi, and only one school had an LCD projector. There are not enough computer labs or desktop computers at those chosen secondary schools. According to the aforementioned findings, there is still much to be done and relatively little use of ICT in the classroom in relation to the availability of ICT equipment.

#### 4.14. Research model

The review of relevant technological literature is the research model. This study's goal is to find out how teachers in a few Ginnir Woreda secondary schools use ICT to make teaching easier. The model can be expanded to incorporate intermediate variables as this study progresses.

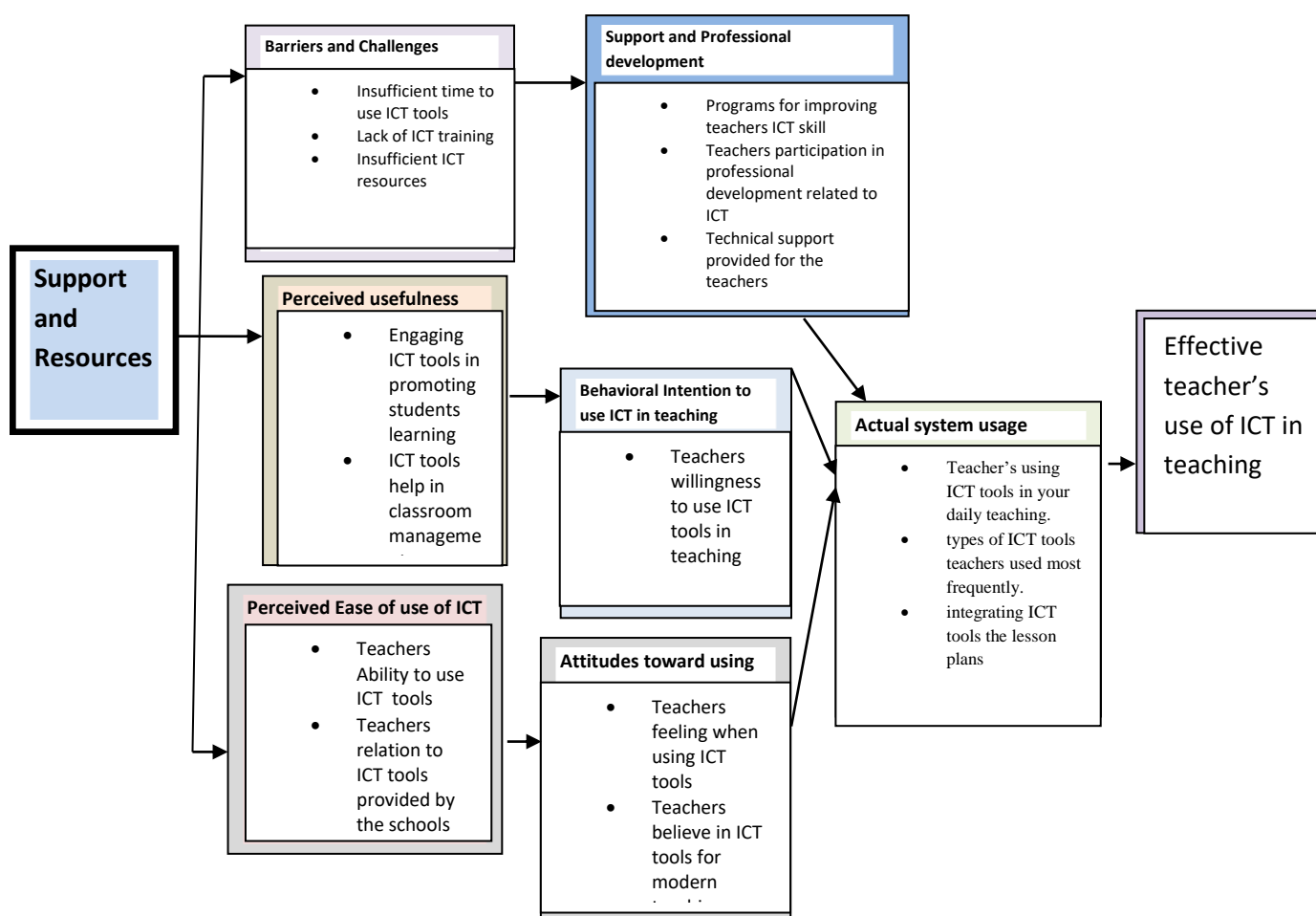


Figure4.3. Research model on ICT usage in facilitating teaching

The ICT Usage in Facilitating the Teaching Process model is intended to display both independent and dependent variables for this study. Eight independent variables barriers and challenges, perceived usefulness, perceived ease of use, support and professional development, behavioral intention to use, attitudes toward using, training and support for ICT use, and actual system use—can be used to characterize the use of ICT in teaching in this context. The choice to employ an ICT in the teaching and learning process is known as ICT usage in teaching. This suggests that ICTs are employed to improve the process of teaching and learning.

### **Perceived usefulness**

ICT is being used effectively in assessment, learning, and instruction. ICT is regarded as a potent instrument for reforming and changing education. Numerous earlier research have demonstrated that effective ICT use can improve educational quality and relate what is learned to real-world scenarios (Technology 2013)). According to the model, the behavioral intention to use is influenced by how beneficial ICT is regarded to be in the classroom. Training and support for ICT use are impacted by the behavioral intention to use. The efficiency of ICT use in the classroom is influenced by training and assistance.

According to the study's findings, the majority of secondary school teachers who responded said that ICT was a helpful tool for improving the teaching process.

### **Ease of use of ICT**

Perceived ease of use refers to the extent to which a person thinks that utilizing a specific system would require no physical hardship. The user's motivation can be explained by this element (Chuttur n.d.)). The results of the study indicate that the majority of the chosen teachers who responded find it tough to learn ICT tools and describe the use of ICT in the classroom as being extremely challenging.

### **Barrier's and challenges**

Teachers face both institutional and individual obstacles when attempting to use ICT to enhance their instruction. Individual obstacles include things like a lack of training, ICT competencies, and background knowledge. Lack of ICT facilities, a lack of government backing, and a lack of ICT training for teachers are examples of institutional barriers (Bingimlas 2009). The study's conclusions indicate that there is not enough time, ICT resources, or government backing to enhance the use of ICT in the classroom.

## **Support and Professional development**

In order to successfully integrate technology into the classroom, instructors who use information and communication technology (ICT) must receive professional development (PD). Effective use of ICT in the classroom can be ensured by better professional development for teachers and well-equipped schools, which will improve student learning outcomes and get them ready for a digital future (Schmidt et al. n.d.). Availability and quality of support for ICT-related difficulties are not satisfactory, according to the study's findings.

## **Behavioral intention to use**

The possibility or willingness of educators to integrate ICT tools and resources into their teaching methods is known as behavioral intention to use ICT in the classroom. It is essential to comprehend this goal in order to support successful technology integration in the classroom. Perceived utility influences behavioral intention to use, as this model shows.

## **Attitudes toward using**

Teachers' and students' attitudes toward ICT integration played a major role on how well ICT was incorporated into the teaching and learning process; good attitudes toward ICTs are likely to promote ICT integration in the teaching and learning process (Technology 2018). Generally speaking, information and communication technology (ICT) is viewed as a potent instrument that presents both opportunities and problems, while attitudes about its use in the classroom can vary widely depending on the situation. The results of the study show that teachers who responded from the chosen secondary schools have favorable opinions about the use of ICT in the classroom.

## **Actual system use**

To improve learning and expedite educational procedures, teachers include a range of systems and tools into their classrooms as part of the real usage of ICT in teaching (Koç, Yüksel, and Altun 2021).

## **Evaluating the Model**

Interviews and questionnaires were used as key data collection tools in this study. The model of ICT usage in the teaching process was developed based on the responses of the respondents, and an attempt was made to test the model in Elbuko public schools. To assess the model's efficacy, the

respondents, who were ICT teachers at Elbuko Secondary School, informed the researcher about the factors influencing the teachers' ICT usage model in Ginnir woreda secondary schools.

### **Expected Outcomes for the ICT Usage developed Model in Ginnir Secondary Schools.**

As respondents informed the researcher, there are a number of anticipated outcomes from ICT use in the classroom: the process of teaching and learning is made simpler with the aid of this model; it is more appealing in this context; it raises the standard of education; it fosters students' creativity; students will have easy access to materials; This model will make it easier for professors and students to communicate by utilizing ICT resources. Professors can also connect their lecture notes. This methodology will significantly increase the efficacy of ICT use in secondary school instruction.

### **Factor affects the developed Model**

ICT use in supporting instruction of the suggested model in the chosen secondary schools of the Ginnir Woreda is influenced by a few factors. The main factors affecting the use of ICT to facilitate teaching in Ginnir Woreda's secondary school were: a lack of IT training; a lack of skilled manpower for effective ICT use; a lack of power and an unreliable Internet connection (poor ICT infrastructure); and ICT illiteracy in the schools, which refers to a lack of knowledge and skills to use ICT.

## **CHAPTER FIVE**

### **5. DISCUSSION OF THE FINDING**

#### **5.1. Summary of Key Findings**

This section discusses the study's findings by contrasting them with the opinions of other academics, as stated in the literature review. The results of the analysis are contrasted with the study's goals in order to determine the extent to which these goals have been met. The purpose of this study was to examine how ICT use can enhance the teaching and learning process in Ginnir Woreda's secondary schools. The study focused on four schools from Ginnir woreda secondary schools: Dello Sebro Secondary School, Elbuko Secondary School, Akasha Secondary School, and Kara Secondary School. Both qualitative and quantitative methods were employed in this study, along with a descriptive survey. Data was gathered from 111 respondents, including 103 teachers, four principals, and four vice-principals who were purposefully and randomly selected from a certain secondary school. Questionnaires, interviews, and document analysis were conducted in order to accomplish the study's goal and provide answers to the research questions.

The following are the study's questions:

1. What are the teacher's perceptions toward using ICT to facilitate teaching in secondary schools?
2. What are the teacher's attitudes and competences with the use of ICT in teaching in secondary schools?
3. What are the barriers that hinders from using ICT to facilitate teaching in secondary schools?

The following overarching topics serve as the framework for the debate based on these research questions. Under the heading "teachers perception toward using ICT in teaching," the research's first question what are the instructors' perceptions toward using ICT to enhance teaching was addressed. Under the heading "Teachers Attitudes and Intentions," the second question "What are the teacher's attitudes and competences with the use of ICT in teaching in secondary schools?" was addressed. "What are the barriers that hinder using ICT to facilitate teaching in secondary schools?" is the third question.

## **5.2. Teacher's perception toward using ICT in teaching**

This section discusses teachers' beliefs about how user-friendly and accessible ICT tools are and the beliefs about how ICT tools enhance their teaching effectiveness and student learning outcomes

### **5.2.1. Perceived usability**

The majority of the respondents (63.9%, combining those who find it "Very Difficult" and "Difficult") struggled with learning new ICT tools. A smaller portion of respondents (36.0%, combining those who find it "Easy" and "Very Easy") find learning new ICT tools to be relatively easier. A majority of respondents (63.0%, combining those who find the tools "Very Unfriendly" and "Unfriendly") perceive the ICT tools as not user-friendly. Smaller segments (36.9%, combining those who find the tools "Friendly" and "Very Friendly") have a more positive view of the user-friendliness of the tools. A majority of respondents (59.5%, combining those who experience difficulties "Often" and "Always") face frequent technical issues with ICT tools. A smaller proportion (40.5%, combining those who experience difficulties "Rarely" and "Sometimes") encounter technical problems less frequently.

### **5.2.2. Perceived usefulness**

A majority of respondents (72.7%, combining those who believe ICT tools enhance teaching "Very" and "Extremely") perceive that ICT tools enhance their teaching effectiveness significantly. A smaller segment (20.7%, combining those who believe ICT tools enhance teaching "Not at All" and "Slightly") perceive minimal or no enhancement. A significant majority of respondents (68.5%, combining those who feel ICT tools help "Slightly" and "Moderately") perceive that ICT tools provide some level of assistance in classroom management, though this assistance is not overwhelmingly strong. A smaller portion of respondents (9.0%, combining those who feel ICT tools help "Very" and "Extremely") see substantial benefits from ICT tools in managing their classroom. A majority of respondents (72.7%, combining those who believe ICT tools enhance teaching "Very" and "Extremely") perceive that ICT tools enhance their teaching effectiveness significantly. A smaller segment (20.7%, combining those who believe ICT tools enhance teaching "Not at All" and "Slightly") perceive minimal or no enhancement. A significant majority of respondents (62.0%, combining those who "Disagree" and "Strongly Disagree") do not use ICT technology to interact with educational resources. Only a minority (36.9%, combining those who "Strongly Agree" and "Agree") use ICT technology for this purpose.

A significant majority of respondents (68.4%, combining those who "Strongly Agree" and "Agree") feel confident in using ICT technology. A smaller segment (23.4%, combining those who "Disagree" and "Strongly Disagree") do not feel confident in using ICT technology. A small percentage (8.1%) remains neutral on this issue.

### **5.3. Teachers attitudes and Intension**

This section addresses teachers' general attitudes and sentiments on the use of ICT in the classroom as well as their readiness and desire to incorporate ICT into their lesson plans.

#### **5.3.1. Attitude toward using**

A majority of respondents (82.9%, combining those who "Agree" and "Strongly Agree") enjoy using ICT tools in their teaching. A smaller percentage (17.1%) are neutral on the matter, indicating that while they do not express strong feelings either way, they neither particularly enjoy nor dislike using ICT tools. A significant majority of respondents (85.6%, combining those who "Agree" and "Strongly Agree") believe that ICT tools make teaching more interesting. Only a small percentage (14.4%, combining those who "Strongly Disagree," "Disagree," and "Neutral") do not perceive ICT tools as making teaching more interesting. A substantial majority of respondents (89.2%, combining those who "Agree" and "Strongly Agree") believe that ICT tools are essential for modern teaching. Only a small percentage (10.8%) is neutral, indicating no strong opinion on the essential nature of ICT tools. A substantial majority of respondents (77.4%, combining those who "Agree" and "Strongly Agree") believe that ICT widens access to educational resources. Only a small percentage (17.1%, combining those who "Disagree" and "Strongly Disagree") do not share this belief, while 5.4% remain neutral. A significant majority of respondents (89.2%, combining those who "Agree" and "Strongly Agree") believe that ICT tools make the teaching process easier. A very small percentage (8.1%, combining those who "Disagree" and "Strongly Disagree") do not believe that ICT tools make teaching easier, while 2.7% remain neutral.

#### **5.3.2. Behavioral Intension to use**

A majority of respondents (79.2%, combining those who "Agree" and "Strongly agree") planned to use ICT tools more frequently in their future lessons. Only a small percentage (9.0%, combining those who "Disagree" and "Strongly Disagree") do not plan to increase their use of ICT tools, while 11.7% are neutral. A substantial majority of respondents (81.9%, combining those who "Agree" and "Strongly Agree") intend to incorporate new ICT tools into their teaching as they become available.

Only a small percentage (18.0%) are neutral, indicating no strong opinion on incorporating new ICT tools, and no respondents disagreed or strongly disagreed with this intention. The vast majority of respondents (64.0%, combining "Agree" and "Strongly Agree") said they are likely to use ICT tools even if the curriculum does not require them. If not needed, a lesser number (7.2%, combining "Disagree" and "Strongly Disagree") are unlikely to employ ICT tools, whilst 28.8% are neutral.

### **5.3.3. Barriers and Challenges**

This section covers the barriers to effective ICT use, such as inadequate resources, technical issues, or a lack of training, as well as the strategies and solutions teachers employ to deal with ICT-related difficulties.

A combined total of 65.5% of respondents also strongly agree or agree that there is a lack of ICT technical support. A smaller percentage (28.8%) either disagrees or strongly disagrees, suggesting a less significant perception of the problem. A very small proportion (5.8%) remains neutral. A substantial majority (75.7%) of respondents either strongly agree or agree that they lack sufficient time to incorporate ICT technology into their teaching. A smaller proportion (21.6%) either disagrees or strongly disagree, indicating that these respondents may not feel constrained by time in using ICT. A combined total of 75.6% of respondents either strongly agree or agree that there is insufficient government support for improving ICT usage in teaching. A smaller proportion (18.0%) either disagrees or strongly disagree, indicating that these respondents may not perceive a significant lack of government support. A small percentage (6.3%) remains neutral on this issue.

A significant majority (73.8%) of respondents either strongly agree or agree that there is a lack of ICT training available. A smaller proportion (18.9%) either disagrees or strongly disagree, indicating that these respondents may not perceive a significant shortage of ICT training. A small percentage (7.2%) remains neutral on this issue. The data indicates a widespread perception among respondents that there is a significant lack of ICT training, with 73.8% either strongly agreeing or agreeing with this sentiment.

As the study indicates data there is several key challenges educators face when using ICT tools:

1. Primary Challenge - Insufficient Resources: The most significant challenge reported is the lack of sufficient resources, with over half of the respondents (53.2%) identifying this issue.

This suggests a need for improved allocation and provision of ICT resources to support effective teaching.

2. **Training and Support Needs:** According to a sizable portion of respondents (20.7%), a key obstacle is a lack of training. This suggests that in order to give educators the skills they need to properly use ICT tools, professional development and training programs are crucial.
3. **Technical Issues and Time Constraints:** Technical problems and time constraints are reported by smaller groups of respondents (9.0% each). These issues, while less widespread, still impact a significant number of educators and should be addressed through better technical support and time management strategies.
4. **Support Structures:** The lack of support is mentioned by 8.1% of respondents, suggesting that additional support mechanisms may be beneficial to assist educators in overcoming challenges related to ICT integration.

Most interviewees indicated that there may be advantages to using ICT in a classroom setting, according to the study's findings. According to the study, ICT in the classroom promotes learning autonomy, facilitates and streamlines the teaching process, increases access to educational resources, allows students to collaborate with one another, and increases student engagement and attachment to the lesson. Inaccessibility and unavailability of ICT resources, inadequate ICT resources in schools, a lack of ICT training, teachers' negative attitudes toward ICT use, and a lack of technical support staff are some of the common obstacles that prevent teachers from utilizing ICT to enhance teaching and learning, according to the study. The responders recommended that the government give teachers a foundational education in ICT so they can include it into their lessons. Any essential resources for incorporating ICT into instruction should be made available by the government and education investors.

#### **5.4. Actual use**

This section addresses how frequently and to what degree teachers integrate ICT resources into their lesson plans and instructional activities as part of their everyday teaching activities. When those who select "Never" and "Rarely" are combined, a sizable majority (66.7%) do not often employ ICT tools in their day-to-day instruction. A lesser percentage of respondents (33.3%) utilize ICT tools occasionally ("Sometimes"), suggesting that they are somewhat integrated into their teaching methods.

With 28.8% of respondents saying they utilize internet resources the most, these are the ICT technologies they use the most. The fact that a sizable percentage of respondents (48.6%) said they never used any ICT devices at all points to a serious lack of ICT integration. The usage rates of other equipment, like interactive whiteboards, laptops/tablets, and educational software, range from 3.6% to 12.6%. Most responders (63.1%) use ICT tools in their lesson preparations in a modest way. The percentage of teachers that incorporate ICT tools very substantially or significantly into their lesson plans is lower (11.7% + 9.0% = 20.7%). Just 3.6% + 12.6% = 16.2% of people integrate ICT technologies either very little or not at all.

### **5.5. Support and Professional development**

This part covers training and continuing assistance for teachers to use ICT technologies in the classroom, as well as the availability and caliber of support for technical and troubleshooting concerns. The vast majority of respondents (69.4%) express either dissatisfaction or extreme dissatisfaction with the technical support they received.

Just 9.0% of those surveyed said they are either pleased or extremely satisfied. Of those surveyed, 21.6% are neutral, meaning they have neither strong good nor negative feelings on the support. The professional development programs are rated as moderately or slightly effective by the majority of respondents (90.0%). The programs are rated as very effective or extremely effective by a lower percentage (9.9%). The vast majority of respondents (73.9%) either participate in ICT-related professional development infrequently or never. Just 26.1% of people participate regularly or occasionally.

## **CHAPTER SIX**

### **6. CONCLUSION AND RECOMMENDATION**

#### **6.1. Conclusion**

The results of the study demonstrate that offering teachers ICT training aims to increase their proficiency with ICT tools, which in turn affects pupils. Despite this, all of these initiatives to improve teaching in Ethiopia focus on ICT infrastructures, equipment, and professional development. It is clear that information and communication technology's promise to support students' learning has not been fully realized.

The main challenges in achieving the study's goal of evaluating teachers' experiences using ICT to enhance instruction in secondary schools in Ethiopia, particularly in Oromia, Ginnir woreda, were defining the theoretical and practical aspects of ICT use in the classroom, evaluating teachers' perceptions of its use, and determining which theories influence ICT use. The researcher employed a descriptive survey strategy based on questionnaire instruments to address the study's goal. Using questionnaires, interviews, and document analysis, information was gathered from four secondary schools in Ginnir woreda: Elbuko Secondary School, Dello Sebro Secondary School, Akasha Secondary School, and Kara Secondary School. The SPSS tool, a statistical software program, was used to examine the data. The researcher employed the survey approach to make sure the data was gathered. Thirty-one surveys were given to the chosen instructors who answered them. Ninety-seven percent of the 115 questionnaires that were collected and examined were returned.

The use of information and communication technology (ICT) in our daily lives and educational system is growing in importance in the modern world. In ways that were previously impossible or challenging, the new technologies have the ability to enhance education across the curriculum and offer chances for efficient communication between educators and students. The world's economic growth, social transformation, and efficient teaching and learning delivery all depend heavily on ICT. According to the study's findings, the issue found here indicates that the practical application of ICT in instruction was insignificant. Over the years, films, radio/television, textbooks, and chalkboards have all been utilized for instructional reasons, but none have had as much of an impact on the educational process as computers. Information and communication technology is supposed to make the teaching and learning process easier for students and create a more appealing learning environment; however this hasn't been accomplished successfully.

According to the study, most respondents had trouble learning new ICT tools, even when they had more positive opinions about how user-friendly the tools were. Teachers frequently encountered technical issues when utilizing ICT technologies. This suggests that the majority of teachers lack the ICT skills necessary to address technological issues. This indicates a decrease in the use of ICT in the classroom. Few respondents felt comfortable using ICT technology, according to the researcher's findings. According to the majority of respondents, ICT technologies improve the efficacy of the educational process. This demonstrates that the majority of educators have a favorable view on the use of ICT in the classroom. This indicates that there is interest in integrating ICT into the classroom. As this study shows few of the teacher's respondents with 28.8% response as they use online resources most frequently and a significant portion of respondents (48.6%) report not using any ICT devices at all, highlighting a substantial gap in ICT integration. Another ICT tools such as interactive whiteboard, laptop/tablets and educational software are used less frequently. Majority of the teacher's respondents of the selected secondary schools are either very dissatisfied or dissatisfied with ICT technical support provided. The response rate of their professional development program is less effective. The study finds several obstacles that prevent instructors from using ICT to enhance instruction, such as a lack of technical support for ICT, a lack of time to integrate ICT into their lessons, a lack of government backing, and a lack of access to ICT training. According to the report, educators encounter a number of significant obstacles when utilizing ICT tools, including a lack of resources, the need for training and assistance, technical difficulties, time limits, and support structure.

## **6.2. Recommendation**

The study's conclusions make it abundantly evident that integrating ICT into the classroom is crucial and advantageous for improving the teaching and learning process in secondary schools. It is necessary to integrate ICT into the teaching and learning process in order to improve it utilizing ICT technologies.

The report suggests the following actions to do this:

1. Training of the secondary schools principal's and vis-principals on the use of computers.
2. Teacher needs different training on the new technology
3. Inviting diverse non-government organizations and other education investors that doing on the academic sector.

4. All secondary school teachers and administrators, particularly those in management roles, should receive in-service training from the ministry of education in coordination with other interested parties.
5. The government should make it a top priority to provide secondary schools with enough ICT supplies and equipment, including energy, so that all schools may benefit from ICT.
6. The Ministry of Education should determine how to supply schools with computers, tablets, laptops, servers, e-learning, cloud computing, and network equipment together with their application software.
7. The integration of ICT in all schools should be monitored by the governments.
8. The student also makes appropriate use of mobile phones and other ICT services and infrastructure for learning.
9. Teachers ought to adopt a favorable outlook on ICT.
10. Teachers ought to receive training on the use of ICT in the classroom.
11. By supporting in-service training and providing adequate ICT resources, school administrators should empower educators.
12. In order for schools to have these teaching infrastructures, the Ministry of Education must provide additional funding to provide at least rudimentary ICT facilities.
13. The Ministry of Education ought to require teachers to complete ICT training and provide in-service ICT training programs for educators working in public schools.
14. Since public schools employ laboratory technicians, the Ministry of Education should provide funding for public schools to acquire ICT infrastructures, hire ICT technical workers, and outfit teacher resource centers with ICT resources for quick access.

### **6.3. Future work**

The primary goal of this study was to evaluate teachers' experiences using ICT to enhance the teaching and learning process in a few secondary schools in Ginnir woreda. The usage of ICT in the educational process is the primary topic of this study. The researcher suggests that similar research be conducted in other parts of Ethiopia to broadly reveal teachers' experiences with the difficulties they encounter while integrating ICT into the teaching and learning process.

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## **Appendix A: Questionnaires.**

HAWASA UNIVERSITY Institute of Technology

Department of Informatics

Master of Information Technology (MSc) program

Questioner to be filled by teacher's respondents

Dear respondents,

Dear Respondent,

The main purpose of this questionnaire is to collect data on the Teachers experience on the use ICT to facilitate teaching in secondary schools in Ethiopia: in case of Ginnir Woreda secondary schools. The researcher needs your response only for the successful accomplishment of this study. Before you fill read all the questions and feel free to give your opinion because no response is treated as wrong. Be sure that your responses will not be used for other except for academic purpose and kept confidential.

Thank you for your cooperation

### **Instruction:**

1. You don't write your name on the paper.
2. Read all the instructions and questions before you answer the questions.
3. Answer the questionnaires based on your current school.
4. Please, tick mark "√" or "X" in the box in front of the questions. And, write your opinion briefly for the short answer questions on the space provided.

### **NB**

No need of writing your name.

**PART I:** -General Information Please insert tick mark (√) details or circle the appropriate category for you.

Name of your school \_\_\_\_\_

1. Sex :

Male  Female

2. Age: 25-35  36-45  46-55  Above 55

3. Experience: 1-5 year  5-10 year  Above 10 year

4. Qualification: Postgraduate  First degree  Diploma

**Part Two: Questionnaire**

**Hint:** VD=very difficult, D=Difficult, N=Neutral, E=Easy, VE=very easy, NA= not at all, S=slightly, M=moderately, V=very, E=extremely, VF=very friendly, U=unfriendly, F=friendly, VF= very friendly, N=never, R=rarely, St=sometimes, O=often, A=always, VDS=very dissatisfied, DS=dissatisfied, S=satisfied, VS=very satisfied, O=occasionally, F=frequently, VF=very frequently, SA= strongly agree, D= Disagree, N= Neutral, A= Agree, SD=strongly disagree

		1	2	3	4	5
<b>Roll</b>	<b>Lists of Items</b>					
<b>Number</b>	<b>I. Perceived Ease of Use (PEOU)</b>					
5	How easy is it for you to learn new ICT tools used in teaching?					
6	How user-friendly are the ICT tools provided by your school?					
7	How often do you experienced technical difficulties with ICT tools?					
	<b>II. Perceived Usefulness (PU)</b>					

8	To what extent do you believe that ICT tools enhance your teaching effectiveness?					
9	How much do ICT tools help you in managing your classroom?					
10	How useful are ICT tools for engaging students in the learning process?					
11	I use ICT technology to interaction with educational resources					
12	I believe that ICT Widens access to educational resources					
13	I develop my confidence of using ICT technology					
	<b>II. Attitude Toward Using (ATU)</b>					
14	I enjoy using ICT tools in my teaching					
15	I feel that using ICT tools makes teaching more interesting.					
16	I believe that ICT tools are essential for modern teaching					
17	I believe that ICT Widens access to educational resources					
18	I believe that using ICT makes teaching process easier					
	<b>III. Behavioral Intention to Use (BI)</b>					
19	I plan to use ICT tools more frequently in my					

	future lessons.					
20	I intend to incorporate new ICT tools into my teaching as they become available					
21	I am likely to use ICT tools even if they are not required by the curriculum.					
	<b>III. Actual System Use</b>					
22	How often do you use ICT tools in your daily teaching?					
23	What types of ICT tools do you use most frequently in your teaching?					
24	How integrated are ICT tools in your lesson plans?					
	<b>IV. Support and Professional Development</b>					
25	How satisfied are you with the technical support provided for ICT tools?					
26	How effective are the professional development programs in improving your ICT skills?					
27	How often do you participate in professional development related to ICT?					
	<b>V. Barriers and Challenges</b>					
28	What are the main challenges you face when using ICT tools in teaching?					
29	There is a lack of ICT technical support					

30	I don't have sufficient time to use ICT technology in teaching					
31	There a lack of government support to improve ICT usage in teaching					
32	There is a lack of ICT training					

**Appendix B: Interview Questions**

**Hawassa University Institute of Technology Faculty of Informatics, Department of Information Technology**

Dear Respondent: I am Master of Science (MSc.) student in Information Technology (IT) at Hawassa University Institute of Technology, Faculty of Informatics, and Department of Information Technology. Currently I am conducting a thesis research under the title: **Teachers Experience on the use of ICT to Facilitate teaching in secondary school in Ethiopia: (in case of Ginnir Woreda secondary schools)**. I would like to hear your views on this area. I hope that you will respond to all of the questions. This study requires that you complete an interview and I kindly request you to answer the interview with at most care and honesty. Your name and any of the information you provide will be kept strictly confidential and will not be attributed to the individual or organization. All responses will be stored in a secure environment. The results of this research would be used for academic purposes only. Your help would be greatly appreciated. Thank you very much for your time and cooperation.

**Interview questions**

Write your opinion briefly for the short answer questions on the space provided.

**1. Part Three: Questionnaire (open end questions)**

- What is your opinion on the benefits of using ICT in facilitating teaching activities in your school?

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- What are the barriers that hinder the use of ICT to facilitate teaching process in your school?

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- Please provide any additional comments or experiences related to the use of ICT in your teaching.

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