



HAWASSA UNIVERSITY INSTITUTE OF TECHNOLOGY

FACULTY OF INFORMATICS

DEPARTMENT OF INFORMATION TECHNOLOGY

**ASSESSMENT OF STUDENTS DIGITAL SKILL IN ETHIOPIAN
HIGH SCHOOLS (IN CASE OF EAST GUJI GIRJA WOREDA)**

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November, 2024

HAWASSA, ETHIOPIA

**ASSESSMENT OF STUDENTS DIGITAL SKILL IN ETHIOPIAN
HIGH SCHOOLS: (IN CASE OF EAST GUJI GIRJA WOREDA)**

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

BY: FIROMSA DENU

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November, 2024

HAWASSA, ETHIOPI

Declaration

This is to certify that this thesis titled “Assessment of Student Practicing ICT Digital Skill In Ethiopian High Schools : (in Case of East Guji Girja Woreda)” accepted in partial fulfillment of the requirements for the award of the degree of masters of Information Technology by the school of Graduate Studies, Hawassa University done by Firomsa Denu Worku is a genuine work carried out by him under my guidance. The matter embodied in this thesis work has not been submitted earlier for the award of any degree or diploma. The assistance and help received during the course of this investigation have been duly acknowledged. Therefore, I recommend that it can be accepted as fulfilling the research thesis requirements.

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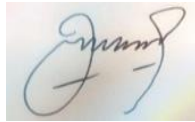


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This Thesis has been submitted for examination with my approval as thesis advisor.

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As members of the board of examining of the final MSC open defense, we certify that we have read and evaluated the study prepared by Firomsa Denu Worku under the titled “Assessment Of Student Practicing ICT Digital Skill In Ethiopian High Schools: (in Case of East Guji Girja Woreda)” & recommend that the thesis can be accepted as fulfilling the study requirement for the degree of masters of science in Information Technology.

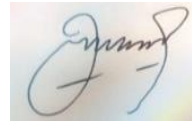
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Abstract

Information and Communication Technology (ICT) is becoming increasingly important for sustainable development, in our daily lives and in our educational system. Therefore, there is a growing demand on educational institutions to integrate and use ICT for enhancing the teaching and learning process and for the students to acquire the necessary skills in this 21st century. ICT is the process of gathering, creating, processing, and storage of information by using hardware, software, as well as the internet and global system of mobile communication (GSM). Realizing the effect of ICT on the workplace and everyday life, today's educational institutions try to restructure their educational curriculum and classroom facilities, in order to bridge the existing technology gap in teaching and learning especially in developing countries like Ethiopia. There exists problems in the inadequacy of exploiting ICT in secondary schools such as lack of the requisite skills and interest of the most teachers as well as lack of active participation digital skill use of student were the widely observed problems in Ethiopia in general and in selected secondary school of this study. Specifically, the objective of this study was focused to assessment of student digital skill in Ethiopian high schools (in case of East Guji Girja Woreda). The research design selected for this study is a descriptive analysis approach and the study areas of this research were East Guji Girja Woreda secondary schools located in Oromia region. The total population of the study was 231 Individuals and the sample size was 144 respondent i.e. 144 students selected using simple random sampling technique and 4 interviewees were selected using purposeful sampling method. Here, in order to collect data from the respondents, 26 questions of the questionnaire for 144 students, and 12 interview questions for 4 teachers were used. Then the data analysis mechanism was by using SPSS software package, and descriptive analysis. Majority of the responses gathered from the three tools shows that there was lack of knowledge and skill of ICT students. In this case, Performance Expectancy, Effort Expectancy, Social Influence, Facilitating Conditions, Behavioral Intention as well as Digital Skills were the independent variables while assessment of student practicing ICT digital skill was the dependent variable. Five mentioned variables have influenced on the Behavioral intention to use new technology. The result shows that there was highly unsatisfied in their learning and using ICT. The lack of attention to improve digital skill in the school and they exists weakness on the position of ICT resources and poor in developing skill students were the major findings.

Key Word: - *ICT practical, perceived ease of use, Digital skills.*

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Abbreviations and Acronyms

ICT -----Information Communication Technology

GSM-----Global system of mobile Communication

ICT4E----- ICT for Education

MoE ----- Ministry of Education

NGOs ----- non-governmental organizations

ICT4D -----ICT for Development

PU -----Perceived usefulness

WWW----- World Wide Web system

TAM -----Technology Acceptance Model

TRA -----Theory Reasoned Action

TPB -----Theory of Planned Behavior

PEOU -----Perceived ease of use

SPSS----- statistical package of the social science

UTAUT----- Unified theory of acceptance and use of technology

ICCM -----Innovation Component Configuration Map

UNIT ONE

1. INTRODUCTION

This chapter introduces the research and provides an overview of the research, statements of the problem, research questions, objectives of the study, significance of the study, and limitations of the study, as well as the organization of the research work. Furthermore, the research methodology and thesis overview that guide the thesis are presented.

1.1 BACHGROUND

Assessment of student digital skills in Ethiopian high schools refers to the process of evaluating and measuring the abilities and proficiency of high school students in using digital technologies, tools, and resources for various academic, personal, and professional purposes. Such as:- Basic Computer Skill;- Proficiency in using computers, operating systems, and common software applications. Internet Literacy;- Ability to navigate the internet, search for information, and evaluate online resources for credibility.

The integration of Information and Communication Technology (ICT) in education has become a global priority, driven by the recognition that digital literacy is essential for students' success in the 21st century. In secondary schools, where foundational skills are built and future academic and career paths are shaped, the effective digital skill of ICT is particularly crucial. This background examines the context in which this study is situated and highlights the need for a thorough assessment of ICT practices in secondary education.

In an increasingly digital world, the role of Information and Communication Technology (ICT) in education has become paramount. ICT encompasses a range of technologies used for communication and information processing, including computers, the internet, and various software applications.

Ethiopia, like many developing countries, has recognized the importance of ICT in education and has made strides to incorporate these technologies into its high school curriculum. The Ethiopian Ministry of Education has implemented various initiatives aimed at improving digital literacy

among students. These initiatives include the establishment of computer labs, the provision of internet access, and the introduction of ICT-focused educational programs[1].

Despite these efforts, several challenges persist. The effectiveness of ICT integration in Ethiopian high schools remains uncertain due to a lack of comprehensive data on how well students are mastering and applying digital skills. Issues such as inadequate infrastructure, limited teacher training, and variable access to technological resources can influence the extent to which students can effectively engage with ICT tools.

The lack of correspondence in ICT resources between urban and rural schools further exacerbates the problem, potentially leading to unequal opportunities for students across different regions. Additionally, there may be gaps in the curriculum and pedagogical approaches that fail to fully address the needs and potential of students in developing digital competencies.

Previous research in similar contexts suggests that successful ICT integration depends on multiple factors, including the availability of resources, teacher competence, and student motivation. However, specific studies focused on Ethiopian high schools are limited, leaving a critical gap in understanding the actual state of ICT digital skill practices among students in this context[2].

This study seeks to address these gaps by evaluating how effectively Ethiopian high school students are practicing ICT digital skills. It will assess students' proficiency with digital tools, Microsoft word, powerpoint, spreadsheets to identify challenges they encounter, and explore factors affecting their engagement with ICT resources. By providing a detailed assessment, this research aims to inform policy and practice, helping to enhance the quality of ICT education and better prepare students for the digital demands of the future.

Information and communication technology (ICT) is becoming increasingly important for sustainable development in business, in our educational system, and in our daily lives. Thus, there's a growing demand on educational institutions to integrate and use ICT for tutoring and the literacy process and educate the skills and knowledge the students need to acquire in the 21st century. This is the era of ICT. Nowadays, every aspect of our lives is connected to ICT. Huge usage of ICT is emerging all over the world. ICT is the process of gathering, creating, recycling, and storing information by using technology, software, the internet, and the global system of

mobile communication (GSM). ICT integration in secondary school education refers to teaching and learning through the use of Information and Communication Technologies. These technologies are currently being utilized in education to enhance teachers' effectiveness by providing access to a wide range of new teaching methods. ICT is also helping educators perform administrative tasks more efficiently. Teachers and students are increasingly incorporating ICT tools into their pedagogical practices, making teaching and learning more engaging and relevant. The adoption of ICT infrastructure and policies in secondary schools, both in developed and developing countries, has long focused on improving teaching and learning processes, facilitating access, and supporting growth. ICT development is a complex process that doesn't always follow a simple policy framework. However, ICT can complement, enrich, and transform education by enhancing digital skills and improving overall learning outcomes[3]. Information and communication technologies (ICT) are electronic technologies used for information gathers and displays storage and retrieval. Development determines in part the capability to produce a synergistic interaction between technological invention and mortal values. Since the mid-20th century, the rapid rate of evolution of ICTs and the integration and omnipresence of ICTs have given them a strong role in growth and globalization. ICTs have influenced the area of education which have inevitably impacted teaching, learning and science[4]. The use of ICT can enhance the quality of teaching by enabling the creation of more relevant and engaging learning materials, improving educational operations, and enhancing the delivery of services in a more cost-effective manner. Students can benefit from ICT in two key ways: first, by using technology as a tutor to strengthen their basic skills and knowledge; and second, by learning with ICT, where technology serves as a tool for achieving various learning objectives. ICT also acts as a resource that helps develop critical thinking, creativity, and research skills in secondary school students[5].

The use of ICT in education advances itself to more student-centered learning settings, and this often creates some tensions among some students. Little emphasis is given to the teaching and learning processes in schools. But with the world moving swiftly into digital media and information, the part of ICT in education is getting further and more important, and this significance will continue to Education is essential digital skill for the overall development of a country. Due to this, a country invests huge amounts of capital to effectively use its mortal

coffers, which in turn determine profitable and social development. And indeed, education is a major instrument that is used to develop human skills and knowledge[6].

According to rapid developments in technology, it was necessary to keep pace with these developments and the prevalence of technology in all areas of life. In the field of education, Ethiopian governments have started investing in information and communication technology to improve the quality and practicing of education, realizing the importance of using technology in education. The Ministry of Education has identified ICT as one of its reform strategies to effectively support practical practicing[7].

Information and communication technology (ICT) is increasingly used in various fields, including business, health care, tourism, and education. The field of ICT now plays a major role in education with the introduction of hardware in most classrooms such as interactive white boards, wireless Internet, and ICTs[8]. information and communication technology (ICT) is the management, preparation, and translation of data such as text, photographs, and diagrams into meaningful information using electronic specialized gadgets[9]. Then comes the practicum or external practice in secondary schools. The contact with educational reality allows them to gain first-hand knowledge, and at the same time, it offers them the possibility of putting into practice the academic knowledge acquired in the previous quarters. This phase included their first experience as teachers and ends with the completion of a practice report[10]. It also promotes networking, research, evaluation and experimentation in ICT tools and ICT enabled practices to utilize the potentials of ICT in school education[11].

Information and Communication Technologies (ICTs) play a pivotal role across various dimensions of education, including teaching and learning, teacher training, local-language instruction, student performance monitoring and assessment, education system management, coaching, and mentoring. ICTs also prepare students for a future where proficiency in these technologies is essential for navigating their careers, contributing to society, and driving national economic growth.[3].

1.2 Statement of the problem

Information and Communication Technology (ICT) has become an integral component of education, influencing teaching methodologies and learning processes. However, the effective practicing of ICT in secondary schools remains a challenge, particularly in assessing the digital skills of students.

Despite the increasing integration of ICT tools in educational settings, there is a lack of comprehensive understanding regarding how well these tools are being utilized in practice. This gap extends to the assessment of digital competencies among students. Specifically, there is limited empirical data on the effectiveness of ICT practicing skill in secondary schools and its impact on enhancing digital skills.

The problem, therefore, is to assess how ICT is practically implemented in secondary schools and to analyze the digital skills of students. This assessment aims to identify the current state of ICT integration, evaluate the proficiency of educators and learners in using digital tools, and uncover any barriers or gaps in ICT practicing. By addressing these issues, the study seeks to provide insights that could inform strategies for improving ICT practices and digital skill development in secondary education.

The significance of ICT from an educational perspective is clear. However, a lack of awareness regarding its benefits remains a major barrier to its widespread adoption, particularly in the education sector. In Ethiopia, the experience with ICT remains limited, leading to challenges in its effective use and integration. ICT refers to technologies that facilitate the creation, processing, and distribution of data and information through computing devices, software, telecommunications, and digital electronics. It has become an essential tool for various activities and business processes in organizations, including educational institutions.

The integration of educational technology and the utilization of ICT is a critical component in modernizing education. It is essential to recognize that ICT-assisted tools can prepare students for learning, with ICT serving as a means to bridge existing gaps and foster independent, active learning[3].

These studies evaluate how teachers and students utilize ICT infrastructure in educational settings. They also highlight the benefits that ICT can bring to the education system, from overcoming barriers of time and distance to facilitating teamwork and knowledge sharing among students and teachers.

The use of educational technology and the preparation and integration of ICT are crucial components in enhancing the learning process. It is essential to recognize that ICT-assisted technologies help students become more prepared to learn, with ICT tools serving as methods and resources that bridge gaps and encourage independent, active learning.

ICT is now pervasive in society and it continues to transform how we live our daily lives. It has the potential to support transformation in teaching, learning and assessment practices in schools and it can connect educational policy with economic and social development[12] ICT enhances the flexibility of education delivery, enabling learners to access knowledge anytime and from anywhere. It shifts the focus from teacher-led instruction to learner-driven processes, better preparing students for lifelong learning and improving the overall quality of education. By advancing teaching and learning practices, ICT can significantly contribute to Ethiopia's development in both the education and ICT sectors, as outlined in the ICT4D policy document. The ICT gap is particularly pronounced in education systems and policies. In many developing countries, policy-making and resource allocation often reprioritize ICT due to misconceptions about its utility and limited awareness of its potential benefits in driving development.[6]

This study examines the role of ICT in supporting Ethiopia's educational policies as the country transitions towards a knowledge- and information-based society and economy. It highlights the advantages of ICT in education, such as breaking down barriers of time and distance, fostering collaboration, and promoting knowledge sharing among teachers and students. By addressing these gaps, ICT can play a transformative role in the nation's education system.

The introduction of a new curriculum for secondary schools in 2008 by the Nigeria Educational Research and Development Council made ICT compulsory for secondary school students. This brought to light the challenges inherent in the practicing of the curriculum. These challenges include a lack of qualified teachers with the requisite skills, a lack of electricity, and a lack of ICT hardware and software. Other challenges include a lack of awareness about the practicing of

the curriculum and the apathy of teachers toward new innovation. ICT teachers' incompetence is always a barrier to the implementation of ICT curriculum in developing countries[13].

Integrating ICT into teaching and learning is a complex process that comes with various challenges. Researchers and educators have categorized these challenges into external and internal factors, focusing on issues faced in the adoption and use of ICT in secondary school education. This study aims to address these challenges, particularly those related to teachers and students, by enhancing their digital skills and promoting the effective use of ICT in the teaching and learning process. A lack of digital skills and insufficient practice in using these skills are key problems under investigation.

The Office of Technology Assessment highlights several essential factors for the successful integration of technology in education, including: Aligning technology with educational goals and standards, Establishing a clear vision for using technology to support the curriculum, Providing both pre-service and in-service training for educators, Ensuring access to suitable technology resources, Offering administrative support for technology use, Allocating time for teachers to plan and learn how to implement technology effectively, Ensuring continuous technical support. Addressing these factors is critical for overcoming barriers and maximizing the potential of ICT in education.

1.3 Research Question

The study attempted to answer the following research questions:

1. How can students' digital skills in ICT be enhanced within the school?
2. What are students' have opinions on learning digital skills in ICT?
3. How students can practices their digital skills within their local environment?

1.4 Objective of the study

1.4.1 General Objective

The general objective of this thesis is to assess of student digital skill and the improvement educational process in Ethiopian high schools (in case of East Guji Girja Woreda).

1.4.2 Specific Objectives

- To review related literature to better understand the digital skills and ICT practices in the teaching learning process.
- To identify strategies enhancing for digital skills in ICT secondary schools.
- To explore students' opinions on learning digital skills in ICT.
- To identify critical issues faced by students and provide solutions for practices their digital skills within their local environment.
- To evaluate the models.

1.5 Scope of the Study

The delimitation of the study is bounded to assess the practicing of ICT in secondary school to student digital skill regardless of considering several ICT related and unstudied issues. Secondly, this study work has also geographical boundary. That is, only the selected two sample secondary schools of Oromia regional state (haranefama secondary school from Haranefama town administration; and Haro Gobu secondary school from Haranefama woreda.),but the other secondary schools in the same regional state or another neighborhood regions will also be excluded. The reason is that shortage of time and labor force as the researcher is student teacher. Finally, this study has time delimitation i.e. only the current academic year on going ICT lesson regarding assessment of student practicing ICT digital skill in Ethiopian high schools would be considered, but what had been undertaken during the previous years will not be used as the data source of the study.

1.6 Significance of the study

The main purpose of this study is Assess the practicing achievement of ICT in secondary school to student digital skill. East guji girja woreda will benefit from this study to the practicing implementation of ICT in secondary school to teachers and student digital skill. So the intent of this study is enhancing ICT practicing integrations in teaching and learning ICT digital skill. ICT enables the use of innovative educational resources and the renewal of learning methods, establishing a more active collaboration of students and the simultaneous acquisition of technological knowledge. Likewise, ICTs are of great help in developing perceptiveness. To search more by providing a better understanding of ICT adoption and make their future works easy in Ethiopian high school.

The study will also help the federal Ministry of Education and a policy maker to enact ICT adoption laws to enhance practicing of ICT in Ethiopian high school to student digital skill.

1.7 Limitations of the study

The sample size of the research, which includes students from Guji Girja secondary school in Heranfama, may not fully represent the entire population. The entire study was questionnaires in English, since this language was as the medium of instruction for all secondary schools in Ethiopia. Therefore, all respondents in the study were chosen on the bases of owner ICT digital skill.

Some respondents faced difficulties in finding time to complete the questionnaires, which impacted the overall results of the study. It is true that a research work cannot be totally free from limitation. Thus, some were very much busy to fill the questionnaires within a given schedule. Moreover, some of the students were not cooperative to complete the questionnaires on time. However, the shortcomings of the study were managed through patiently discussing with teachers and school principals.

1.8. Operational Definition of Terms

Assessment of ICT Practicing skill in Secondary Schools to Students' Digital Skills refers to a systematic evaluation process designed to measure and understands how Information and Communication Technology (ICT) tools and practices are applied in secondary education settings. This assessment aims to device the proficiency and effectiveness of digital skills among students.

Assessment: The systematic process of evaluating students' proficiency and competence in ICT digital skills through various methods. This includes collecting data via tests, surveys, observations, and interviews to measure how well students practice and apply ICT skills.

Student: Individuals enrolled in high school education, specifically those in grades 12, who are the subjects of this study. This includes both male and female students attending public and private high schools in Ethiopia.

Practicing ICT Digital Skills: the application and use of various information and communication technology (ICT) skills by students in their academic and daily activities. This encompasses practical activities such as using computers, software applications, the internet, and

other digital tools effectively. The acceptance of information communication technology in organization, performance prospect, effort expectancy, social influence, and facilitating settings in secondary schools.

ICT Digital Skills: A set of competencies related to the use of information and communication technology. For the purposes of this study, these skills include:

Basic Computer Skills: Familiarity with operating systems, file management, and using various computer peripherals.

Software Proficiency: Ability to use common software applications, such as word processors, spreadsheets, and presentation tools.

Internet Navigation: Skills related to effective use of web browsers, search engines, and online research techniques.

Coding and Programming: Basic understanding and ability to write simple programs or scripts in programming languages.

Ethiopian High Schools: Educational institutions in Ethiopia that provide secondary education, typically covering grades 12. These schools may be public or private and are located across various regions of the country.

Performance expectancy: The degree to which an individual believes that ICT adoption will assistance him access school facilities.

Effort expectancy: The degree of easily associated with the utilization of ICT facilities.

Social influence: The extent to which the individuals believe that others believe that they should use ICT services.

Facilitating conditions: The perceived level to which the secondary schools, technical infrastructure required maintenance of ICT services.

1.9. Organization of the Thesis

The research is organized in to five chapters. The first chapter deals with the introductory part of the research in which background of the research, statement of the problem, objectives of the study, scope of the study, significance, Limitations of the study, organization of the paper and Operational definition are incorporated. The second chapter deals with the literature review ;this include theoretical literature, introduction to ICT in education , Technology Acceptance Model, Benefits of ICT for education, The perception of students on the use of ICT, Challenges of ICTs, Concept and Evolution of ICT, Empirical review, ICT in Education in Ethiopia, Role of Technology in Ethiopia Schools, ICT Enhancing in Education, ICT Digital skill.

The third Chapter discuss about research design and methodology; this included the research design, research approach, sample and sampling method, data collection methods and method data, data validity and reliability and ethical consideration. The fourth Chapter deals about the major finding of the study .its uses table, graphs compare results and discuss key finding of the study. Discusses survey results presentation and interpretation. Finally, the last chapter contains summary, conclusion, and recommendations, parts of the study.

CHAPTER TWO

2. LITERATURE REVIEW

In this chapter different literature including both conceptual, theoretical bases and related literature is reviewed which helped to identify the gap, learn and gain experience on the evaluation of the research result.

2.1 Theoretical Literature

Information and Communication Technology (ICT) has the potential to enhance access to information, enable learning anytime and anywhere, and make the learning experience more engaging, thereby increasing participation and improving learning outcomes. ICT can also enhance the quality of teaching, facilitate the creation of more relevant and stimulating learning materials, improve education management, and make educational services more efficient and cost-effective.

The term *Information and Communication Technology (ICT)* encompasses all forms of technology used to transmit, process, store, create, display, share, or exchange information electronically. In the context of education, ICT includes tools such as mobile learning (m-learning) applications and interactive programs, which enhance teaching and learning experiences.

The Practicing of ICT curriculum goes beyond a focus on subject knowledge to explicitly include 21st century skills that are needed to construct new knowledge and engage in lifelong learning. The ability to collaborate, communicate, create, innovate and think critically is vital in ICT Curriculum practicing. The results also demonstrate that most student teachers are not proficient in using a variety of ICT programs and equipment, which is crucial for enhancing and supporting their educational experiences and integrating ICT into the classroom [13].

The term Information and Communication Technology (ICT) refers to all forms of technology used to transmit, process, store, create, display, share, or exchange information through electronic devices. In education, ICT is a cross-cutting theme that applies to various areas, including education policy, teacher education, teaching and learning practices, and cross-sector

ICT programs. The integration of ICT in education spans across these diverse fields, making it an essential tool in modern educational systems.

Therefore, it was necessary to broaden the scope of this review to also focus on ICT and policies underpinning their practicing into secondary schools more generally. As a result, this literature study identifies and discusses five themes: the Saudi Arabian education system, ICT generally, the procedures involved in developing and implementing policies, the factors that support and hinder ICT adoption in secondary schools, and the elements that are thought to be crucial for ICT adoption[8].

This implies Information and communication technology is not only automating the organizational operational process but also changing the very base of the operation itself.

When the usefulness of Information and communication technology get recognize by an organization it is more likely that ICT will be included into an organizational strategic plan.

To meet the ICT strategic plan and the organizational strategic plan in general, it is important that organizations have a well thought procedure for the ICT practicing.

In general, to get the full benefit of ICT and the success factors of a satisfactory system, one has to have a successful organizational ICT practice starting from the initiation to the overall practicing.

2.2 Introduction to ICT in Education

ICT encompasses a broad range of technologies, including computers, the internet, software applications, and multimedia tools. These technologies offer opportunities to support and enrich the educational experience by facilitating interactive learning, fostering digital literacy, and preparing students for a technology-driven world. The successful practicing of ICT in schools can lead to enhanced teaching methodologies, improved student outcomes, and the development of essential digital skills that are increasingly critical in the workforce.

Despite the recognized benefits of ICT, there are several challenges that schools face in its practicing skills. These challenges include disparities in infrastructure, varying levels of teacher expertise, and differences in students' digital competencies. For instance, while some schools may have state-of-the-art technology and well-trained staff, others may struggle with outdated

equipment and limited access to professional development. Additionally, students' digital skills can vary widely, influenced by their prior exposure to technology and the quality of ICT integration in their education.

To address these challenges and ensure effective ICT practicing, it is crucial to assess the current state of technology use in secondary schools. This assessment involves evaluating both the digital skills of students and the practical aspects of ICT integration. By identifying strengths and weaknesses in ICT practices, educators and policy makers can develop targeted strategies to improve resource allocation, training programs, and curriculum integration.

This research aims to provide a comprehensive assessment of ICT practicing in secondary schools, focusing on enhancing the digital skills of students. Key areas of investigation include the availability and integration of ICT resources, the proficiency of teachers in using technology, and the digital competencies of students. The goal is to uncover insights that will help enhance the effectiveness of ICT in education, ensuring that both educators and learners are well-equipped to navigate and benefit from the digital age.

In summary, assessing the practicing digital skill of ICT in secondary schools is essential for understanding its impact on teaching and learning. By evaluating the current state of technology use and the digital skills of teachers and students, this research seeks to contribute valuable knowledge that can guide improvements in educational practices and technology integration.

To conduct an assessment of ICT practicing in secondary schools to analyze students' digital skills, you can design a comprehensive questionnaire tailored to gather relevant data. Here's a structured example of such a questionnaire.

2.3 Technology Acceptance Model (TAM)

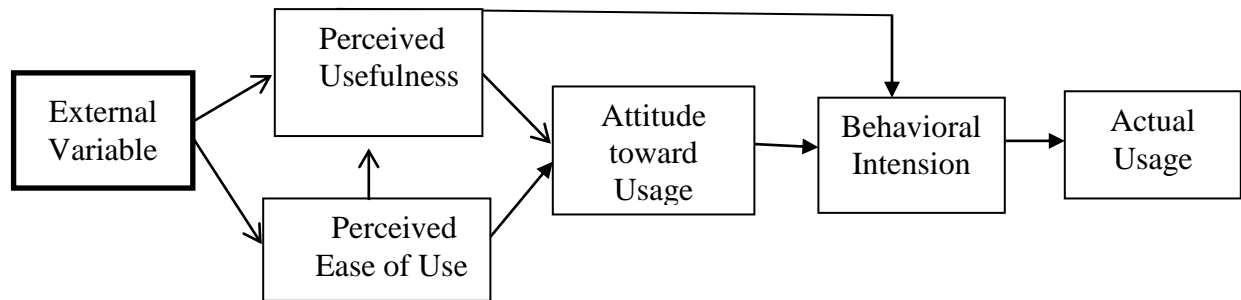
The information system models were mainly established to investigate the factors that lead to the Acceptance and use of new technology for organization or individual[14]. The achievement of an information system depends on the continuous use and intention to use the new system [15].The purpose of the Technology Acceptance Model was being for the new technology. TAM which is founded by Davis in 1989 was derived from the Theory of Reasoned Action (TRA) and Theory of Planned Behavior (TPB) which were used to test the users' acceptance of information system. Technology Acceptance Model was set to explain the computer acceptance elements by its users.

TAM theorizes that two particular, perceived usefulness and perceived ease of use are vital importance in technology acceptance.

Perceived usefulness (PU) is defined as the prospective user's subjective probability that using a specific application or system will increase his or her job performance within an organizational context.

Perceived ease of use (PEOU) refers to the degree to which the prospective user expects the target system to be free of effort strenuous and otherwise (Davis 1989). The TAM model is basic and theoretical grounding for the current study.

The TAM model is shown in figure 2.1 External Variable, Attitude, and Actual Usage



Source: Davis (1989)

Figure 2.1: Technology acceptance model

Technology Acceptance Model can be reformed by adding or reducing some External variable to satisfy the context of the study (Venkatesh, 2000).The model was developed from a conceptualization of perceived usefulness, perceived ease of use, and impact towards behavioral intention to ICT digital skill in selected secondary schools in East Guji Girja Woreda State.

Perceived usefulness: Perceived usefulness has direct effect on behavioral intentions over and above its effect on attitude and usefulness is far more important than ease of use in a predicting usage.

Attitude toward Usage: This variable is clear as person's positive or negative feelings about performing the goal behavior Attitude can be classified into main construct, attitude toward the purpose, and attitude toward the behavior. According to Davis (1993), attitude towards usage defines as "the degree to which an individual evaluates and associated the target system with his or her job".

Technology Adoption

Technologies that aid collaboration electronic have become an important component of day to day life. Thus several studies have examined the adoption of collaboration technology services and so on. Assumed that adoption of collaboration technologies is not progressing as fast or as broadly as predictable, it seems a different approach needed. New system or new technologies acceptances require input both the managerial or organizational level and the individual level. It is important to understand not only the end user beliefs, attitudes and intentions, but the management strategies, policies and actions which have significant effect on the successful acceptance of a technology[16].

2.4 .Unified theory of acceptance and use of technology (UTAUT)

There are Critical success factors on the adoption and utilization of ICT in teaching and learning processes. UTAUT shows that performance expectancy, effort expectancy, and social influence have significant relationships with the intention to use technologies[17]. Later studies found that social influence affect perceived usefulness and perceived ease of use[18]. UTAUT is one theory that covers extensive individual difference constructs including gender, age, and experience of use as moderating variables. Even though there are some inconsistencies in previous studies on individual differences, academics reported significant moderating effects according to individual differences such as [17]. UTAUT provides a refined view of how the determinants of intention and behavior evolve over time. It assumes that there are three direct determinants of intention to use, performance expectancy, effort expectancy, and social influence and two direct determinants of usage behavior, intention, and facilitating conditions [19]. These relationships are moderated by gender, age, experience[20].

2.4.1 Unified Theory of Acceptance and Use of Technology (UTAUT) model

This study preferred the Unified Theory of Acceptance and use of Technology model is combines technology acceptance model related teachings. The uses of UTAUT purpose to clarify user intentions to use an Information System and consequent behavior. UTAUT suggests four

core constructs to explain and guess user acceptance of technology adoption, which are: performance expectancy (equivalent to perceived usefulness), effort expectancy (equivalent to perceived ease of use), facilitating conditions, and social influence.

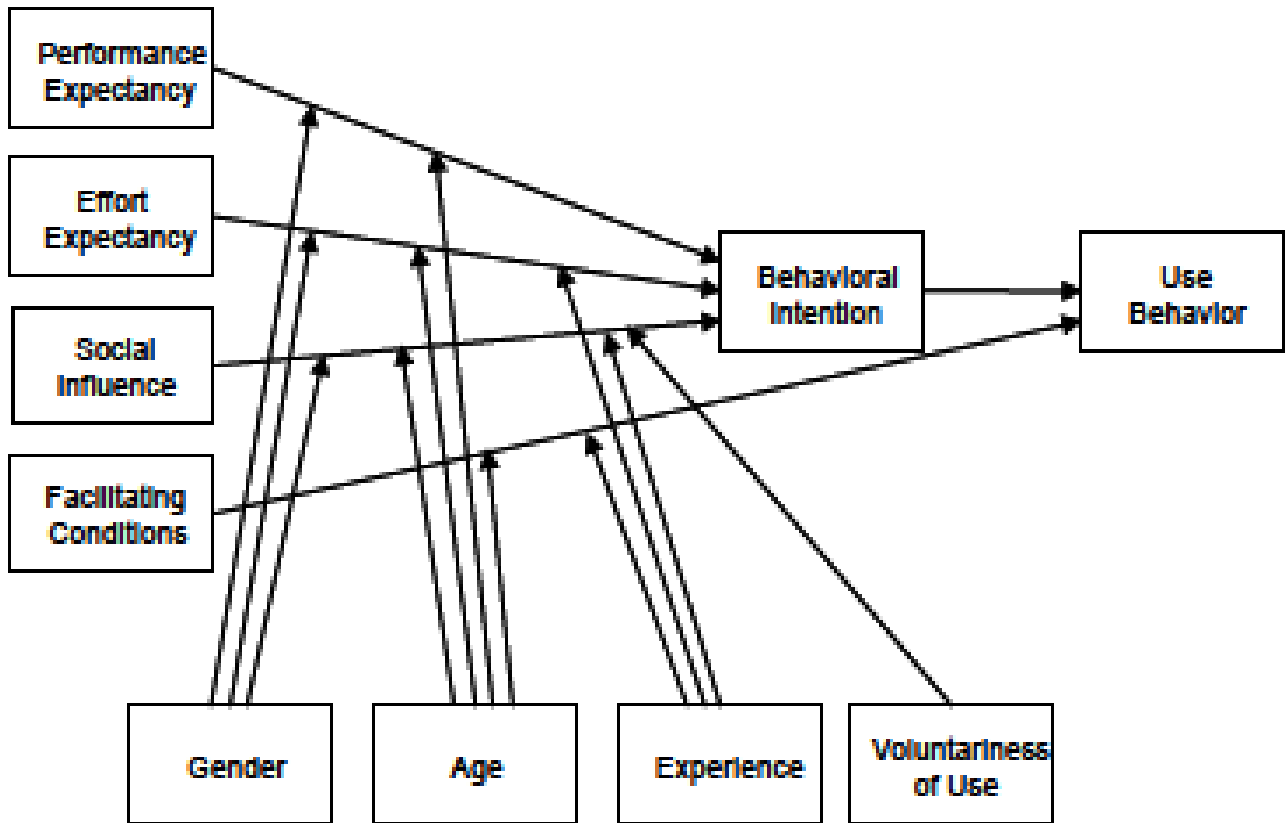


Figure2.2: Unified theory of acceptance and use of technology (UTAUT)

[19] the variables are also Gender and Age which affect the performance of the factors. In the unified technology of acceptance and use of technology, performance expectancy, effort expectancy, and social factors variables have direct effects on the behavioral intention which in chance impacts the use behavior. However, facilitating conditions variable has directly influence on the use behavior.

Performance expectancy: Effort expectancy, Social influence, facilitating conditions behavioral Intentions Use Behavior gender and age. The effect of facilitating conditions on behavioral intention is not considered because it is assumed non-significant when both

performance expectancy and effort expectancy have been included[21]. These factors affect the use of behavior and consequently ICT practicing digital skills.

Effort expectancy: The step of ease associated with the use of the ICT adoption. Effort expectancy imagined to adequate the influence on behavioral intention according to age and gender.

Social influence: The point to which an individual perceives that important others believe he or she should use the new technology. Social influence, assumed to adequate the influence on behavioral intention by gender and age.

Facilitating conditions: The idea of an individual believes that an organizational and technical moderate the influence on use behavioral According to age.

2.5. Benefits of ICT for education

1) ICT can increase access to education:

Acts such as distance education system, electron learning and access to personal ICTs provides education to people in remote areas where teacher recruitment is often difficult. It is also evident that educational by teacher and students practice in ICT in Ethiopia has been accessed to rural and urban areas. Moreover, the internet enables these educational contents and other educational information to access in the world without actual transportation.

2) ICT can improve the quality of education:

The quality of education is improved by Information Communication Technology (ICT) through use of multimedia digital teaching and learning materials, ICT, projects and providing distance learning for students as well as teachers.

3) ICT can motivate students:

ICT motivates not only students to study but also their parents to send their children to schools, because ICTs are something new which seem attractive and nowadays people recognizes that Information Communication Technology skill is necessary for the information age.

To realize the above mentioned benefits, many ICT4E projects have been implemented by international organizations, non-governmental organizations (NGOs) and developing countries'

governments. Amongst these stake holders, government may have the strongest influence since the educational sector is managed within a framework of national educational policies and most schools are governmental ones. In reality, the ICT4E initiative has been carried out by the Ethiopian government as a crucial part of the country's extensive e-government plan[6]

Moreover, when one considers that "the government has been the single largest producer, holder, user, and collector of information,"[7] and that the national development policy is created by the government, it is obvious that the government is the most important stake holder not only for ICT4E but also ICT4D initiatives in general.

2.6. The perception of students on the use of ICT

The students in the conducted study affirmed the fact that utilizing of ICT for teaching and learning process increased the student's involvement in the educational process. The Information and Communication Technology integrated teaching and learning motivates academic performance and deal a feeling of success that will move the students from the low of awareness to the dynamic part of creators of information.

In Africa[3] also explored the influence of ICT integration on the learning pattern of students of University of Bureau in Cameroon and found out that students were more comfortable using ICTs and used it to improve their learning ways. The study also highlighted the positive relationship between students 'approach towards the utilization of ICT and their study custom. According to our country Ethiopia ICT is very important to make attractive teaching and learning environment.

2.7 Challenges of ICTs

Information and communication technology for education, or ICT4E, programs face a variety of obstacles and dangers, including inadequate infrastructure[8]. organization or community acceptance [22] relevance of information [23], financial sustainability [9]. Absence of instruction and expertise the main obstacles to schools utilizing ICTs as teaching and learning tools, such as educational satellite plasma television, the school net, and ICTs, are a lack of funding, a shortage of ICTs, a shortage of instructors with ICT literacy, a lack of teacher competency in integrating ICTs into various subject areas, and a lack of curriculum specifically designed to teach ICT

skills[10]. This area discusses that school-networking projects should address and provides examples of how countries in Africa are coping with the challenges facing them.

As mentioned above, since the advantage/benefits and rationale of ICT use for development is understandable, an optimistic expectation may be generated that ICT is used as a powerful tool for development in numerous systems under the acceptable government action. Still, the reality is different from such an optimistic anticipation.

2.8 Concept and Evolution of ICT

[24]postulate that information can be defined as knowledge communicated by others or obtained from investigation of study or instruction. It could be the process by which the form of an object of knowledge is impressed upon by the arresting mind so as to bring about a state of knowing. Technology, on the other hand, is the wisdom of operation of knowledge to practical purposes. Technology defines a people's standard of living and the general state of their country[25]. Information has been the driving force of so numerous human conditioning in search of developing one's self, which has created a base for the need to know. ICT stands for Information and Communication Technology and is defined as a "different set of technological tools and resources used to communicate, and to produce, circulate, store, and manage information." The term ICT refers to forms of technologies that are used to create, store, share or transmit, and exchange of ICT includes such information. This broad definition covers a variety of gadgets and services associated with these technologies, including email and video conferencing, television, video, and DVD players, satellite systems, landline and mobile phones, information and communications technology, and network hardware and software[9].

ICT has been defined by different commentators; many of such definitions focusing particularly on the 'newer' ICT-assisted, digital or electronic technologies, such as the internet of mobile telephony. Some, still, do include 'aged' technologies, similar as radio or TV. Others indeed do include the whole range of technologies that can be used for communication, including print, theatre, folk media and dialogue processes. Some concentrate only on the idea of information running or transmission of data. Others fall under the more general category of instruments to improve information exchange and communication processes [26].

ICT-using academics and students comprehend difficult subjects and ideas more deeply, are more likely to remember material, and are more likely to apply it to address issues outside of the

classroom[9]. In addition, through ICT, Academics and students extend and consolidate their knowledge, disquisition, and inquiry according to their requirements and interest when access to information is available on multiple situations (CEO Forum on Education and Technology, 2001).

[9] recognizes that information and communication technology (ICT) is the processing, upkeep, and application of all ICT, communication, network, and mobile technologies for information mediation. Communication technologies include all media employed in transmitting audio, video, data or multimedia such as cable, satellite, fiber optics, wireless (radio, infra-red, Bluetooth, and Wi-Fi). Network technologies include particular area networks(PAN), campus area network(CAN), intranets, extranets, original area networks(LANs), wide area networks(WANs), metropolitan area network(MANs) and the internet. ICT technologies include all removable media such as optical discs, disks, flash memories, video books, multimedia projectors, interactive electronic boards, and continuously emerging state-of-the-art PCs. According to him, mobile technologies comprise mobile phones, particular digital sidekicks (PDAs), palmtops, etc. These technologies have information as their material object. Information isn't reserved for use in insulation, but rather communicated among druggies. ICT consists of tackle, software, networks, and media for collection, storehouse, processing, transmission, and donation of information (voice, data, textbook, images), as well as their affiliated services. It can be divided into two orders factors; Information and Communication structure (ICI) which refers to physical telecommunications systems and networks (cellular, broadcast, string, satellite, postal) and the services that use information (internet, voice, correspondence, a radio, and TV). In the words of Amenyó (2003), the characterization of ICT is robust. He purported that it encompasses automation of the information and meta-information aspects and representations of people, items, goods, systems, tools, equipment, instrument and machinery. It necessarily embraces data capture (gathering, collection, entry, acquisition and measurement), data storage (recording, archiving and logging), data retrieval, data processing (manipulation, calculation, computation, , modeling, representation, presentation and simulation) and data communication (transfer, flow, interchange and exchange).

2.8.1 Categories of ICT facilities

[3] separates ICT into the subsequent groups: capturing technologies that use digital information conversion and collection input devices. Keyboards, mice, system units, touch displays, voice recognition software, bar code readers, image scanners, and compact cameras are a few examples of these gadgets.

Storage technologies which produce a variety of devices to store and retrieve information in digital form. Among these are glamorous video tapes, floppy disks, hard disks, RAM disks, optic disks (similar as CD- ROMs), erasable disks and smart cards (credit- card sized cards with memory and processing capacity for fiscal deals or medical data). Also, the processing technologies produce the systems and operations software that are needed for the performance of digital ICT. Communications technologies which produce the bias, styles and networks to transmit information in digital form. They include digital broadcasting, integrated services digital networks, digital cellular networks, LANs, WANs, such as the Internet, electronic bulletin boards, modems, transmission media such as fiber optics, cellular phones and fax machines, and digital transmission technologies for mobile space communications. Display technologies which produce a variety of affair bias for the display of digitized information. similar bias include display defenses for ICTs, digital TV sets with automatic picture adaptation, set- top boxes for videotape- on- demand, printers, digital videotape disc, voice synthesizers and virtual reality helmets. ICT has been applied to several angles of our world. These include education (schools), health (hospital), business (trade) and numerous others. Therefore, it's the purpose of this review to bandy the accessibility, vacuity and use of ICT by academics in advanced education. This enables policy makers, school directors, and academics to pay the required attention to integrate this technology into the educational system. In so doing, it highlights the situations of accessibility, vacuity and use of ICT in education, being promises, the limitations and challenges of ICT integration into the educational system.

2.8.2 ICT accessibility, availability and use by academics

Educational systems around the world are under adding pressure to use the ‘ new’ ICT(UNESCO, 2002 as cited by Yuen, Lee, Law and Chan,(2008) grounded on the premise that it's important for bringing changes to classroom tutoring and literacy. These abilities include the

capacity to work and learn from peers and experts in a linked global community as well as the capacity to become lifelong learners within the framework of collaborative inquiry[4]. The information society demands a workforce that can use technology as a tool to increase productivity and creativity. This involves identifying reliable sources of information, effectively accessing these sources of information, synthesizing and communicating that information to colleagues and associates [27]. Affirmed that information is a crucial resource for undergraduate tutoring, literacy, research and publishing. This brings the need for effective styles of information processing and transmission [28]. Emphasized how, over the course of the last century, research projects pertaining to educational innovation and instructional technology have advanced extremely quickly, starting with the invention of the phonograph, radio, film, and television and their use as teaching and learning aids in secondary schools. As ICT-based innovations were developed, they also became tools in the classroom in many forms (e.g., drill and practice software, educational games, tutorials, internet access, email, digital media, personal ICTs, laptops, etc). Therefore, [9] concurred that the educational system is being challenged to change as innovative technology changes the interaction with information and knowledge and as new generations of students pass through with new outlooks and new needs.

According to [12], today's education world is information and communication intensive, and IT professionals and the entire faculty in the context of this study need to be empowered with the knowledge, skills and abilities that technology offers. Even with the enormous potential and academic advantages that innovation and improvement of communications afford, without the direct participation and support of a secondary school, this power cannot be pushed to its full potential. Secondary school in IT requires many of the characteristics common to all leaders, but also requires special abilities and insights into technology's impact. Jesse Jackson said "You can't teach what you don't know, and you can't lead where you won't go". This means that the Academics of secondary school education cannot impact ICT driven education without them acquiring the knowledge.

Therefore, effective professional development may require an understanding of the kinds of motivations and cerebral resistances that determine how faculties will decide to use new technologies. To what degree, for illustration, is the adoption of educational technology related to a faculty's correctional cooperation or commitment to high quality instruction? Information technologies are becoming more and more integrated into societal norms[29].opine that the

pressure to adopt them in education can only increase. Informing educational leaders and decision makers on the full range of issues concerning development and deployment of technology and invention is decreasingly a critical precedence. The demands on higher education faculties no longer focus on content expertise but also on creating active learning environments that integrate technology within content. Faculties can adapt to this role by reflecting, analyzing, observing, implementing, and evaluating successful examples of best practices in technology integration [30]. Use of an Innovation Component Configuration Map (ICCM) which measures technology integration practices, would also help faculties reflect on their pedagogical practices related to technology integration within their class and allow them to document contemporary exemplary practices in technology integration.

It is unavoidable that teaching and research will always be innovative, particularly given the evolving landscape of higher education [31]. The political, social, economic and educational imperatives for the engagement in e-learning now seem to be clear. However, without institutional sponsorship, support and appropriate rewards for engagement in ICT (e-learning) and the pursuit of excellence, faculty members are likely to remain disengaged and unenthusiastic about engagement in e-learning or innovative educational practices.

2.8.3 Ease of Access to ICT resources

[6] discovered that academics can become experts in information retrieval rather than factual interpretation thanks to the accessibility and ICT resources available. According to him, accessibility enhances people's awareness of their surroundings. Inadequate funding causes access to vital infrastructure to be restricted [13]. While ICT continues to advance in western and Asian countries, African countries still witness a pause in its implementation, and that continues to widen the digital and knowledge divides. [32] noted that one of the biggest challenges facing most African countries is access to ICT facilities in higher education, with a ratio of one ICT for every 150 students, compared to a ratio of 1:15 students in industrialized nations.

2.8.4 Use of ICT by academics

In secondary school learning, ICT facilities can be put into several uses and for various purposes. It was the objective of this study to compare the level of use of ICT student academics.

2.8.5 Different uses of ICT

Much literature described faculty in secondary school education as comfortable using technologies such as word processing, email, and web searching [30], but not comfortable integrating technology into their classroom practices for meaningful learning [29]. The issues of best practices in innovative use of technology and integration among secondary school education faculty are not clearly focused and the results of research in this area vary widely indicating the need for additional research [33]. Interestingly, a study by A [26] Discovered that with global technological wave that is affecting every sector and every aspect of Academics' Individuals, regardless of gender, experience level, or field of study whether in humanities, sciences, or vocational disciplines must actively strive to become ICT literate to overcome the challenges of modern education. Not only that, [13]confirmed the findings in this study that, attitude of male academics towards integration of ICT in tertiary institution is higher than female academics.

Academics in fields such as science and technology have traditionally shown more interest in using ICT tools and equipment for teaching and research compared to their counterparts in the humanities and vocational disciplines. ICT has the potential to enhance university effectiveness and productivity by offering a variety of tools that support and improve teachers' professional development. Eventually, ICT is seen as means to reform and introduce tutoring, that is, to stimulate learners to learn laboriously and singly in a tone- directed way and/ or in collaboration with others [9]. It can be concluded that ICTs have the potential to enhance both teaching and learning within the secondary school system.

However, some scholars [10] have raised doubts about the effectiveness of ICTs in education. Others have claimed that the effectiveness of ICT depends on those who use them. Academics are keys to the successful practicing of ICT in secondary school education. what we do know is that ICT impacts learning for some students, under certain conditions, but it cannot replace a teacher whether based on personal experience as a teacher or learner, or from the findings of 20 years of research. [34]McFarlane has placed great emphasis on the key role of the Academic's skill in integrating ICT.[29] Confirmed the findings in the present study by identifying three specific areas of relevance of ICT to Academics in the area of research:

I. ICT provides opportunities for scholars to communicate with one another through email, mailing lists, newsgroups, and online forums. These resources enable scholars to share research, assignments, books, or journal references, allowing for discussion of issues and results. Researchers can engage with others' work in electronic formats. The use of ICT also fosters greater opportunities for research collaboration and networking among scholars worldwide, enabling the study of global and international research topics. Communication with peers and experts around the world is facilitated, supporting collaborative knowledge-building. This collaborative framework helps highlight global trends through both human and technological cooperation.

II. The use of ICT enhances research across disciplines by providing faster and easier access to extensive and up-to-date information through digital libraries, which offer digitized full-text resources for students and researchers. Other resources include electronic directories of scholarly and professional conferences with relevant topics and papers, as well as electronic reference sections or virtual libraries. Additionally, electronic journals, databases, and image repositories are valuable tools. Internet resources, such as Gopher and CD-ROMs, provide researchers with current, in-depth, first-hand information.

III. ICT can be used to perform complex mathematical and statistical computations, which are essential in research. These tools facilitate data manipulation and statistical analysis, streamlining data collection and enhancing accuracy. In fact, complex statistical operations can be completed instantaneously and more accurately using ICT than through manual methods.

2.9 Empirical Literature

Information and Communication Technology (ICT) in education has evolved, becoming increasingly integral to teaching and learning. The world's education system is undergoing an unprecedented transformation thanks to the quick growth of web-based applications, internet technologies, and information and communication technologies (ICTs)[27].

The World Wide Web has impacted every aspect of human interaction and relationships within the educational environment in multiple ways. This technological advancement, particularly through the use of electronic learning, offers significant benefits to education.

In the "National ICT for Development (ICT4D) Five-Year Action Plan for Ethiopia," Dzidonu (2006) highlights that Ethiopia has recognized the transformative potential of the information and technological revolution. The country is using ICT to drive economic transformation by modernizing key sectors, including agriculture, services, and industry. Dzidonu (2006) further notes that the Ethiopian government views ICT not only as a critical tool for poverty reduction but also as a key enabler of state transformation. The goal is to use ICT to improve service delivery across all sectors, contributing to Ethiopia's broader socioeconomic development objectives. The government envisions Ethiopia becoming an ICT-driven nation that can effectively participate in the global, networked economy.

Developing countries can often be reprioritize in policymaking and resource allocation due to attitudes regarding the usefulness of ICT in the development process, as well as lack of knowledge regarding the potential benefits of ICT implementation [35].

Like other developing countries, Ethiopia's ICT implementation is still in its early stages, despite the government's efforts to promote it. According to the Ethiopian Ministry of Education (MoE), the role of ICT in expanding access to education cannot be overstated. ICT is recognized for enhancing education and streamlining the delivery of training at all levels, a viewpoint endorsed in the Ethiopian ICT for Development (ICT4D) policy document. This document also acknowledges the crucial role ICT can play in transforming the education system and making it accessible to a broader segment of the population.

Moreover, in its five-year action plan (2006–2010), the Ethiopian Ministry of Capacity Building emphasized the government's commitment to addressing the country's human resource needs in ICT by promoting mass ICT literacy education and training. The plan also aims to increase ICT usage in educational institutions (schools, universities, and colleges) and connect these institutions to online resources, including the Internet.[36] also stated that this type of teaching and learning environment cannot be created by ICT alone. Teachers need to be able to plan lessons, choose resources, direct activities, and facilitate learning; many teachers with traditional training are ill-equipped to do these duties. Light (2009) asserted that in order to effectively employ technology, the educational paradigm needs to change to one that is more focused on student-centered learning, making reference to the work of Branford, Brown, and Cocking

(2000). This is not an easy or trivial transition to make, especially in nations where the educational system is teacher-centered.

2.10 Empirical review

2.10.1 ICT and its application

Information and Communication Technology (ICT) is commonly used as a broader term than Information Technology (IT), emphasizing the integration of unified communications and telecommunications, including telephone lines, wireless signals, middleware, software, storage systems, and audiovisual technologies. These components enable users to create, access, store, transmit, and manipulate information. Essentially, ICT encompasses IT as well as telecommunications, broadcast media, and all forms of audio and video processing, transmission, and network-based control and monitoring functions[27]. ICT supports all activities related to communication and information. It operates on the premise that its use should be aligned with specific purposes, requiring a clear rationale for its application.

The effective use of ICT depends on local culture, the available technology, and how it is configured and managed. The understanding, operation, and configuration of the technology can vary, influencing the scope of ICT. This variation is not just about a collection of tools and devices for specific tasks, but rather an organized system of equipment—like a "workshop"—designed for handling information and communication. It includes integrated systems of devices, tools, services, and practices that facilitate the collection, processing, storage, and sharing of information. This system connects people, information, and devices, enabling learning, problem-solving, and higher-order collaborative thinking. In essence, ICT serves as a key element in creating a shared workspace for learning and collaboration [37].

The application of ICT in institutions encompasses a broad range of areas. It involves a holistic approach to innovating training systems, methods, and management through information and communication technology. This includes restructuring educational delivery systems, diversifying teaching and learning methods, engaging all stakeholders, adapting quickly to societal and environmental changes, and ultimately improving the efficiency, effectiveness, and productivity of education[38]. In the administration of institute, ICT can also be applicable in the administering of human, physical and financial resources.

2.10.2 ICT use in instruction

The use of ICT in education can be traced back to 1924, when Sidney Presley experimented with the so-called "tutoring machine" for modification and testing at Ohio University in the United States. However, the integration of technology in education progressed slowly until the advent of modern ICTs[33]. In today's world, ICT plays a crucial role in the learning and teaching processes. According to Branford et al. (2000), reviews on the use of ICT in learning have highlighted its significant potential to enhance student (or trainee) achievement. Angriest and Levy (2002) argue that education systems must prepare citizens for lifelong learning in an information-driven society. This transformation, driven by societal changes due to ICT, will see societies evolve into information societies, with citizens acquiring new skills through educational innovations. These changes will help strike a balance between traditional and modern educational goals. As a result, education will increasingly focus on creating opportunities for students to develop skills such as autonomous learning, communication, problem-solving, and collaboration in teams using various communication technologies.

Technology integration spans a broad range, from teaching programming skills and self-directed drills to testing, instructional delivery, and internet-based access to information and communication.

Overall, ICT can be utilized in numerous ways to support and enhance the teaching and learning process. Notably, ICT holds considerable potential to improve academic performance[39] Many theorists and scholars argue that the use of ICTs can help learners become more knowledgeable, reduce the amount of direct instruction required, and create a learning environment where instructors can offer support to students with special needs. Furthermore, the integration of new technologies can motivate students, fostering a positive attitude toward time management training and improving their learning experience.

ICT contributes to more effective instruction. Kulak (1994) notes that students learn more in classrooms where ICT-based instruction is used, as lessons take less time and students tend to enjoy the classes more. Additionally, they develop more positive attitudes toward ICT when they receive assistance through these technologies in the classroom.

Forman and Puffer (2003) explain that ICT can support new educational methods by serving as tools that enable student learning through active engagement. Modern learning theories emphasize critical thinking, problem-solving, authentic learning experiences, social knowledge negotiation, and collaboration. These approaches challenge the traditional role of the instructor as a disseminator of information, instead positioning them as facilitators who guide students as they actively engage with materials to construct their own understanding. In this context, students learn how to learn, not just what to learn.

ICTs offer numerous benefits for both instructors and students. They provide easy access to books and a wide range of reference materials, promote student interaction, save time during research, encourage learner-centered approaches, expose students to technology, aid in revision, and help simplify complex concepts, making them easier for students to grasp[40].

Information and Communication Technology (ICT) provides various support services for institutions, including lab manuals, assignments, lecture notes, course outlines, digitally recorded class materials, discussion groups, live lectures for later viewing, links to course-specific websites, online tutorials, and virtual libraries[7]. According to Brown and Duguid (2000) to improve the usage of information and communication technology evaluating the current usage is important.

2.10.3 Purpose of using ICT

According to the Swedish National Agency for School Improvement (2008), Information and Communication Technology (ICT) has a positive impact on learning and student performance when it is integrated into the classroom and teaching process. Typically, performance is measured by how effectively a process achieves its intended purpose. Moulin (2003) defines an institution's performance as "how well the institution is managed." "and "the value the institute delivers for customers and other stakeholders." Though ICT have the capacity to facilitate easy access to information and provide more efficient information services to users and consequently improve overall performance of users [41].

ICTs are revolutionizing education by removing distance from education and making knowledge more accessible to all. Technology enhances learning performances by empowering learners. It is not surprising therefore to see a growing interest in technology-based learning across the world.

Technology based learning may be defined as the array of hardware and software used in the teaching and learning system that include ICT- based training system, as well as the internet with World Wide Web system (WWW). Technology also provides greater flexibility to adapt teaching and learning to meet a goal.

Although ICTs are by far the most significant element undergirding the foundation of management training, there is paucity of literature and research regarding its practicing and use in this field of education and training.

Limited information on the current use of ICTs in management training institute constrain the researcher to go further Information and communication technology make it possible to engage people in widely dispersed locations through ICT network, learners can be drawn together from almost anywhere, and they can construct their own learning groups.

An ICT network or data network is a telecommunications network which allows nodes to share resources in ICT networks; networked computing devices exchange data with each other using a data link. The connections between bumps are established using either string media or wireless media. ICT networks support an enormous number of operations and services similar as access to the World Wide Web, digital videotape, digital audio, participated use of operation and storehouse servers, printers and fax machines, and use of e-mail and instant messaging operations as well as numerous others. A ICT network facilitates interpersonal dispatches allowing users to communicate efficiently and fluently via colorful means furnishing access to information on participated storehouse devices is an important point of numerous networks.

2.10.4 Availability of ICT resources

Resistance to change and negative attitudes by instructors affect ICT practicing. This study therefore, sought to find out where assessing ICT resources that were found in EMI then assessing the usage of ICT. Further, a study by Kiptalam and Rodrigues (2010) observed that access to ICT installations is a major challenge facing most African countries, with a rate of one ICT to 150 scholars per academy against the rate of 115 scholars per academy in the developed countries. This rate in the advanced world has now improved with time to 15 per academy. An ideal student ICT ratio would be 1:1, but due to the advantage of collaboration, 1:2 would be best whereby learners can share a ICT and assist each other in the learning process. ICT use also

encourages disabled students to learn according to Davis (2000) assert that increased availability of ICT is especially useful for students who suffer from learning disabilities science ICT use allows instructors to prepare suitable tasks for individual needs and each individual more effectively.

2.10.5 Accessibility of ICT resources

Successful integration of ICT in any institute would help to access any information and resources via Internet and Intranet. The ICT labs and classroom ICTs need to be sufficient in number to allow ready access by student and staff in most subjects across the institute. A wide range of supplemental and remote working bias, including videotape- conferencing, is provided and integrated into the class. Large and small group presentation facilities are readily available [42]. Even with the ideal scenario mentioned above, the majority of African institutions encounter obstacles to the successful integration of ICT in the teaching and learning process. These include inadequate infrastructure in terms of labs' adequate physical state and the learners' subsequent access to the resources (ICT) [41].

Accessibility and use of ICT allows students to investigate more thoroughly the real world [22]. They can more readily access information sources outside the classroom and can use tools to analyze and interpret similar information. Information may be accessed through online system or through data logging systems [4]. The technologies allow them to receive feedback, refine their understanding, build new knowledge and transfer from school to non- school setting (Committee on developments in the science of learning, 2000). In the history this has been delicate to give in seminars due to logistical constraints and the quantum of material to be covered all of which can now be addressed with ICT. What can be learned is broadened and deepened [11].

Now a day in many government and training school seem to recognize the importance of introducing ICT in education and training. Important as scholars and staff need training on a nonstop base with ultramodern needful chops to completely exploit the ICT terrain in their different functions. Mindfulness chops only may not be sufficient enough but rather nonstop availability to ICT coffers would do much better. Continuous access to ICTs helps instructors/instructors feel more secure in their ICT use during lessons and gives them the courage to experiment more and thus helps them integrate ICT into lessons effectively. Many

studies also indicate that the impact on learning will increase over time as instructors and students become more experienced in continued practice on using ICTs (Swedish National Association for School Improvement, 2008).

2.11. ICT in Education in Ethiopia

The ICT in Education perpetration Strategy and its corresponding Action Plan are factors of a wider Ethiopian public e-education action. This action forms one of the pillars of the ICT for Development 2010 Plan. The strategy is built on three main streams: Ethiopian National School Net Initiative, The National ICTs in Higher Education Initiative and The National ICT Education, Training and Awareness Initiative. These three aqueducts form the base for the perpetration of the strategy across the education sector. The National School Net action, for case, is aimed at the deployment and the exploitation of ICTs to grease the tutoring and literacy process within primary, secondary, specialized and vocational seminaries. The ICTs in secondary school Initiative focuses on deploying ICTs within the school, universities, colleges, and research institutions. And, eventually, the National ICT Education, Training and mindfulness action promotes ICT mindfulness and knowledge, lifelong and adult education, and distance and virtual education and literacy. The strategy also identifies strategic goals and draws up a programmer and activities for each initiative. Both the national ICT for Development 2012 Plan and the ICT in Education Practicing Strategy recognize ICT as an enabler for widening access to education for the Ethiopian population, for supporting literacy education, and for facilitating educational practice and training at all levels.

Ethiopia is one of the African country which have more than 100 million population and 2nd largest populous in Africa. Ethiopia is on the way to implement “Ethiopian Education Development Roadmap (2019-2030)”. The study of the roadmap proposed reforms (“Ethiopia and Education Strategy”). The Secondary and preparatory schools, Teacher education, Higher education. Replace the Instructional current Satellite TV (Plasma) and radio with ICT technologies and Restructure the traditional learning areas by introducing new learning areas such as Technology and Citizenship Education to shift from the traditional knowledge-focused curriculum to competence-focused curriculum. School Net, a nationwide satellite-based network of Ethiopia’s secondary schools provides TV broadcast educational content for more than 2000 secondary schools nationwide. The idea is the original server will be connected to a central server to download the rearmost digitalized programs locally so it can be penetrated by scholars

and preceptors in the computer lab than accessing the contents from the TV broadcast only. As part of its efforts to enhance the quality of general education through ICT adoption, MOE have designed a program targeting secondary schools which are already connected to the independent and secured School-Net using 2 Mbps bandwidth and Universities Having Faculty of Education[43]

2.13. ICT Enhancing in Education

The practical of ICT in education improves the teaching and learning process by providing quality education for teachers and students information in an efficient way[44]. ICT facilitates teaching and learning environment more attractive.

According to[44], the use of ICT in education sector supports teachers in carrying out various tasks which include: searching for information and preparing lesson materials; presenting information (e.g. using power point presentations, interactive white boards and LCD projectors) collection and management of data about students' activities; for collaborating with teachers and students; communicating with other students and parents and sharing materials through the networks.

[44]mentioned that utilization of ICT which include the use of electronic media, internet platform, and advanced educational technologies results in several benefits: accessibility of online learning materials; better clarifications and insights on the subject taught.

Indeed, while few teachers seem to have no difficulties in integrating ICT in the educational process and have a largely positive opinion about the benefits of ICT in education, many educators do express some form of adverse reactions [36].

Technology is even seen by some educators as being a source of threat to their traditional way of work[45]. Consequently, it becomes significant to identify the determinants of ICT adoption in education sector so as to increase its use in the teaching and learning process to teachers and learners.

2.14. ICT Digital skill

Hence we learned on yet another conceptual framework for understanding the ICT practicing process, which is described in detail in the school report that ICT competencies are a prerequisite

for ICT perpetration, but it doesn't insure that a school teacher is suitable to apply ICT in tutoring. The offered framework addresses all aspect of preceptors 'professional conduct, it three consecutive approach types to teaching technology knowledge; knowledge deepening; and knowledge creation. This framework encompasses aspects related to producing proactive adults who contribute to society; in the case of pre-service teachers, productive future teachers who are relevant in their teaching to students of the knowledge society.

Research Gap

Several studies by the following issues regarding digital skills have been identified. Research by [2][27][1] [46][7]has focused on ICT and digital skills among secondary school students. After reviewing related literature, the researcher was unable to locate any studies on digital skill Ethiopian secondary schools that were chosen to improve the teaching and learning process. The research mentioned above don't go into much detail regarding how digital skill is incorporated into the educational process. However, there has been no research conducted on this topic within Oromia. Therefore, there is a contextual gap in understanding students' participation in digital skills development. Consequently, this study aims to fill this gap by exploring the current state of digital skills. As a result, there are contextual gaps.

Conceptual Framework

To determine the relationship between the variables under review, conceptual framework was developed. In the conceptual framework Performance Expectancy, Effort Expectancy, Social Influence and Facilitating Conditions were the independent variables while Assessment of student Digital Skill in teaching learning process is the dependent variable. The Four mentioned variables have influenced on the individual committed to use new technology of the literature. Consequently, this study will employ these variables to propose research model in order to evaluate whether these variables might influence the Behavior intention to use assessment of student digital skill in Ethiopian high schools (in case of east guji girja woreda) The direction of arrows shows an element of assessment of student digital skill in one direction. This deals with the overall framework of the variables.

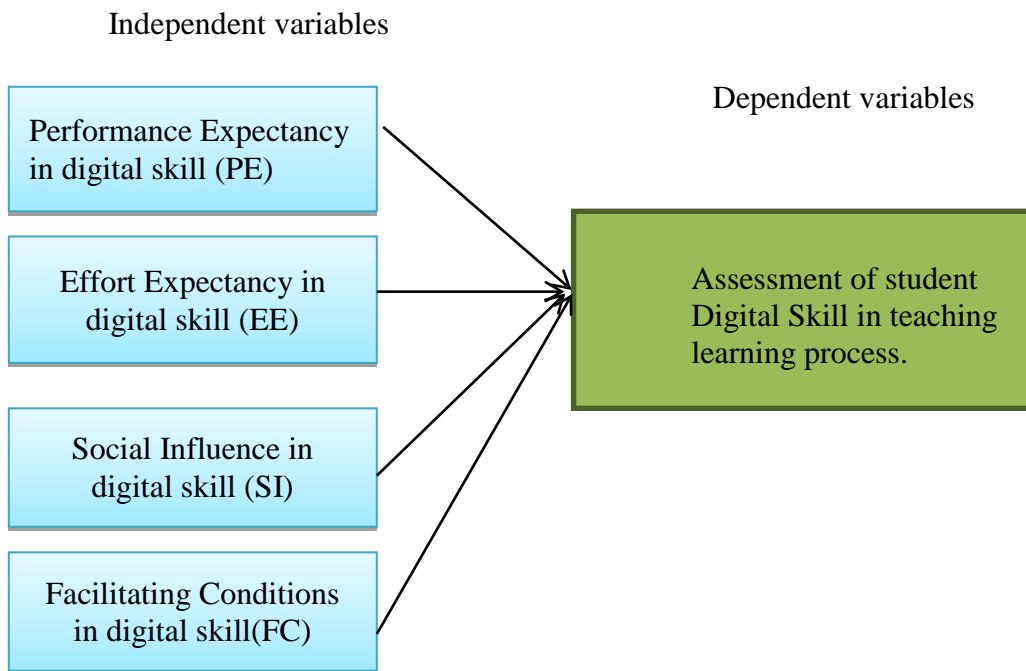


Figure 1.3 Conceptual Frameworks

The purpose of this framework is to frame on further independent variables to explore on factors influencing ICT and utilization from the local context in selected Ethiopian high schools (in case of east guji girja woreda).

Summary Table of Key Studies related work

Author(s)	Year	Title	Purpose/Focus	Methodology	Key Findings
Rodríguez & Ronald	2024	Digital Skills and Academic Performance	To assess the relationship between ICT skills and student performance	Survey of 200 students	Positive correlation between ICT skills and academic success.
Assefa, and Abera	2022	ICT Integration in Ethiopian High Schools	To identify barriers to effective ICT usage in Ethiopian high schools	Interviews with teachers and students	Lack of infrastructure and training noted as major challenges.
Hirut & Kassa	2022	ICT Skills Proficiency among High School Students	To evaluate proficiency levels in digital skills among students	Mixed methods (surveys and assessments)	Students showed basic proficiency but lacked advanced skills.
Edene.G	2020	Assessment of ICT Implementation Practice In Higher Education Institutions	To explore how Assessment of ICT Implementation Practice.	Interviews with teachers and students	Teachers using ICT reported increased student engagement.
Ayodele and Education	2007	ICT Usage in Ethiopian High Schools: A Regional Study	To compare ICT usage across different regions in Ethiopia	Comparative analysis of multiple schools	Significant regional disparities in ICT access and usage.

Table 2.1 Key Studies related work of digital skill

CHAPTER THREE

METHODOLOGY OF THE STUDY

This chapter focused on the method that is to be used in the study. In the following sections, detailed description of research design, research approach, source of data, sample and sampling method, sampling population, data gathering instruments, procedures of data collection, method of data and ethical consideration are also discussed.

3.1 Research Design

Study design is the method that the researcher was used during research study. And this was used to show what kind of the method that the researcher found out to get the needed information in order to solve the problem raised. And researcher was used primary data and effectively selected simple random sampling. In this study design in order to get the needed information the researcher was used surveys/questionnaire, interviews and observation whether it was open-ended and closed-ended questionnaire as well as structure interview were taken place as soon as possible. Furthermore, the study employed both qualitative and quantitative methods in relation to this concept. A researcher's design is the configuration of parameters for data collection and in a way that seeks to integrate pertinent to the research goal with procedural economy [47].

The survey strategy for this study was descriptive. The descriptive survey research design is employed because it is suitable for revealing reality through the collection of in-depth factual data that characterizes phenomena as they exist at a specific point in time [27]. Furthermore, a research design is the setup of parameters for data collection and with the goal of integrating process economy with pertinent to the study goal[23]. The study were adapted a correlation survey design, which enables the researcher to establish the relationship between gender and sex of students in secondary schools of East Guji Zone Girja Woreda focus. The design is selected as it will be suitable because of it studies the relationship between gender and age of students in secondary schools.

3.2 Description of the study area

Oromia region in East Guji Girja woreda is the area where the study was conducted. The choice of Oromia region in East Guji Girja woreda was made based on the researcher's familiarity of

the locality, the accessibility of the locality which made easy for the researcher to develop immediate understanding with the respondents hence making data collection less bulky. It is chosen because of its ideal setting, one that is related to the researcher's interest, is easily accessible, and allows the development of immediate understanding with respondents. The study was conducted in Oromia Regional State, East Guji Girja woreda of the Secondary Schools.

3.3. Research Approach

The study used both qualitative and quantitative approach to take meaning on the findings understudy. Quantitative approach was adopted in an attempt to give meaning by giving the findings in numerical terms through percentage and tables. Again, the study used qualitative approach subjectively to assess the opinions and behavior of respondents. A methodology was used to produce results, particularly from interviews, and to facilitate the findings' discussion [48].

3.4. Source of data

During research session the source of information is the vital one. The source of this study was directly concerned with to whom it concern. So then, the researcher was used primary data. In order to get tangible evidence for expected information. Primary data was the best crucial method to get the source of what the researcher wanted to get. The researcher chose the primary data he did in this research through surveys. Survey refers to the system of securing information concerning A Phenomena under study from all or a selected number of repliers of the concerned universe. And the sources of this study were the school principals, teachers and students of East Guji Girja Woreda secondary schools. Data collection tools like surveys, interview and observation were used.

3.5. Study Population

Population is the totality number of people under investigation while a sample is a part of the population. The population for this study involved students in two secondary schools in East Guji Girja Woreda. In this study area 125 student from harenfama secondary school, 106 students from Haro Gobu secondary schools there are total 231 students. which is the population of this study there researcher select the grade 12th student. To sum up, the total population of the study were 231 individuals.

3.6. Sample Size and Sampling Techniques.

The entire set of case that the researchers select from the total population is known as sample size. Sampling is the method that is used to specifically select from the whole of the participant of the respondents and can be represented by the other subjects. Afterwards, simple random sampling technique was drawn for the selection of sample individuals from each of the selected areas. Total population found in the two schools 231 in grade 12th students was selected for respondents of the questionnaire of the study. Simultaneously, using sample size. According to [49], qualitative investigations typically involve the use of small samples; choice of sample size still is an important consideration because it determines the extent to which the researcher can make each of the four types of generalizations, Simultaneously, using sample size. Determination formula noted by Kothari

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

n= sample size

P= Estimate characteristic of the population (p=0.5), q=1- p,

Z= Desired Confidence level (95%) (1.96)

e= Acceptable (marginal) error (0.05)

Accordingly on the Kothari formula 144 students and teachers were my sample size with 2 secondary school students and all were selected using purposefully sampling technique.

3.7 Data collection Instruments

In order to get the desired information about the assessment of digital skill in secondary school to student digital skill, two secondary schools were selected. They were: Harenfama secondary school from Harenfama town administration; Haro Gobu secondary school from Harenfama woreda. The researcher used questionnaire, interview and observations. To gather the data from respondents 'close and open ended questionnaires and interview questions were prepared. In an attempt to collect data, questionnaires, interview and observation are tools used to gather data for the study.

3.7.1 Questionnaire

This questionnaire was prepared in rating scale close ended items. The questionnaire contained 26 questions which were given to 144 target students. The questionnaires were prepared in the use of language that can be contains both close-ended and open-ended questionnaires. And it covers with issues concept to the students' knowledge performance in case of their assessment the practicing digital skill of ICT in secondary school to student digital skill. The questionnaire had two parts. The first part was about Test background information of the respondents. The second part of the questionnaire contained items on the assessment the practicing digital skill of ICT in secondary school to student digital skill, In this part, each item were prepared with five scales ranging from strongly agree to strongly disagree that helped to measure the level of conformity of the respondents. In this study a questionnaires were prepared and distributed to students. Among this 26 questionnaires were returned and only 4 questionnaires respondent were not returned. Due to the sensitivity of the research topic, this population is adequate for this study.

Questions will be ranked based on the nature of questions in five point Likert scales which range from (*1= strongly Disagree, 2= Disagree, 3= Neutral, 4=Agree, and 5= strongly Agree*) based on the questions.

3.7.2 Interview

The researcher also prepared four open-ended interview guide inquires using short answer item type. Then, the prepared interview guide inquiries were orally presented in person by the researcher to the 2 principals and 2 ICT teachers of the target schools, i.e. teachers per school Harenfama secondary schools 1, Haro Gobu secondary school 1. As a whole, 4 interviewees were taken.

3.7.3. Observation

The observation checklist prepared for this study assessing the digital skill in Ethiopian school of Oromia region East Guji Girja for digital skill for students, namely, Harenfama secondary school from Harenfama town administration; Haro Gobu secondary school from Harenfama. For observation, the researcher randomly selected one grade 12 section per each school. The

observation had been conducted for three consecutive weeks in each section by the researcher in person.

3.8 Procedures of Data Collection

During the research study the researcher was personally contacted with his respondents in order to collect data. So then, he selected some of the school's students from the schools mentioned before in order to set up the report introduced for the purpose of the study and facilitated the condition to get cooperated collected data. And the researcher secured confidentiality with regard to names and members of the students as well as from the principals of the schools respectively. Then the researcher carried out interview with the school principals and teachers as much as possible and after completion of the interviews session the researcher has been collected by using distributed questionnaires. And identified the number of the distributed questionnaire papers and the researcher tried to the response of the respondents as well and as it expected the needed information thoroughly.

3.9 Method of Data

The research used both qualitative and quantitative research methods to analyze data. Each question had its responses coded by assigning codes of responses for each point. The pilot study estimated the effectiveness and validity of the instruments. The responses were categorized into themes based on research questions and objectives. Categories like demographic information were analyzed using descriptive statistics such as frequencies and percentages and data interpretation were analyzed using descriptive statistics such as frequencies, percentages and mean. Some of the coded items were analyzed with the aid of an ICT on the statistical package of the social science programs (SPSS) and Excel program software. Finally the researcher concluded and recommended the response of the respondents determining on the suggestion of the respondents.

3.10 Ethical Consideration

Ethical considerations play a role in all research studies, and all researchers must be aware of and attend to the ethical considerations related to their studies. Therefore, there are a number of ethical considerations should be made during the study. To conduct this study, supportive letters from the department of Information Technology will be written from the university. After receiving supportive letter from the department, the researcher, moved to the study area and

contact with principals and to arrange their convenient time to the questionnaire and interviews. The respondents informed of the purpose of the research. Finally they were informed of the information obtained from the respondents; the data obtained was used for research purpose only. All assistance, collaboration of others and sources from which information will be drawn is going to be acknowledged

CHAPTER FOUR:

4. PRESENTATION, DATA AND INTERPRETATION

This chapter presents the data and interpretation involving both the quantitative and qualitative techniques. This chapter accounts two parts. The first part deals with characteristics of the respondents and the second part presents and interpretation of data on Assessment of Digital skill in Secondary School to Student in the indicated secondary schools cited for the researcher study. The data collected from the questionnaire were first presented in the table and then various statistical tools were used for.

The data collected from the questionnaire were first presented in the table and then various statistical tools were used for. The total number of questionnaire paper was 144 copies were prepared and distributed for the total respondents. And the others sampler students were 122 male and 109 females totally 231 students. Out of these, 144 questionnaires papers copies were distributed to the respondents. In among these respondents were 122 males and 109 females were properly filled the questionnaires and returned to the researcher effectively. Besides, of this interview was held with the teachers and school principals. And the other 4 respondents were not returned the questionnaires to the researcher.

4.1. Questionnaire returned rate

The total questionnaire papers distributed to the respondents were filled beyond the researcher expected but not all in all. And proportionally as it estimated in this research method all the research procedures were fulfilled. When become to the total number of the student respondents were 231. In among these student respondents 96.6% students were returned the questionnaires and the others 3.4% left were not filled well and returned back to the researcher.

4.2. Demographic Information of respondents

This section deals with demographical information of the total respondents participated in this research; were the school principals, teachers and students of in the East Guji Girja Woreda secondary schools.

4.2.1 Age and Gender of the students respondents

The age and gender of the students participated in this study were can be shown below this table.

Part1. Demographic information of students

Table 4.1: Age and Gender of respondent

Indicate your age and Gender					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	15-17 years	44	30.6	30.6	30.6
	18-20 years	53	36.8	36.8	67.4
	21and above	47	32.6	32.6	100.0
	Total	144	100.0	100.0	
Valid	Male	87	60.4	60.4	60.4
	Female	57	39.6	39.6	100.0
	Total	144	100.0	100.0	

The above table 4.1 shows that Age and Gender of respondent student from the total of the respondent of 144, the table shows that the age of the respondents that 15-17 were 44(30.6%), from 18-20,53(36.8%), and 21 above, 47(32.6%).the total respondent 144, 87(60.4%) were Male and the remaining 57(39.6%) were female. this indicates that the majority of the respondents were male and also this table indicates that the majority of the respondent founded in the age of 18-20 which means most of the respondent were 36.8 and below stages.

Table 4.2 Grade of respondent

Indicate level of grade					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Grade 12	144	100.0	100.0	100.0

The above table 4.2 shows that from the total of the respondent of 144 were 144(100%)

4.2.2 Performance Expectancy

Table 4.3: Using ICT tools improves my performance in ICT skill.

Using ICT tools improves my performance in ICT skill.					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	strongly Agree	63	43.8	43.8	43.8
	Agree	48	33.3	33.3	77.1
	Neutral	12	8.3	8.3	85.4
	Disagree	9	6.3	6.3	91.7
	Strongly	12	8.3	8.3	100.0
	Total	144	100.0	100.0	

Table 4.4: ICT digital skills are important for my future career prospects.

ICT digital skills are important for my future career prospects.					
		Frequency	Percent	Valid Percent	Cumulative

					Percent
Valid	strongly Agree	39	27.1	27.1	27.1
	Agree	60	41.7	41.7	68.8
	Neutral	17	11.8	11.8	80.6
	Disagree	10	6.9	6.9	87.5
	Strongly	18	12.5	12.5	100.0
	Total	144	100.0	100.0	

From the above table 4.3 shows that Using ICT tools improves my performance in ICT skill, are, 63(43.8%) of the respondent responses that were strongly disagreed. 48(33.3%) of the respondent were agreed.12(8.3%) of the respondent were Neutral their too gave a response 9 (6.3%) Of the respondent were have Disagree. 12(8.3%) of the respondent were Strongly. The above table 4.3 indicates that most of the respondent was strongly Agree for Using ICT tools improves my performance in ICT skill.

Table 4.4 ICT digital skills are important for my future career prospects. 39(27.1) of the respondent responses that were strongly disagreed. 60(41.7%) of the respondent were agreed.17(11.8%) of the respondent were Neutral their too gave a response 10(6.9%) Of the respondent were have Disagree. 18(12.5%) of the respondent were Strongly. Table 4.4 indicates that most of the respondent was strongly agree for ICT digital skills are important for my future career prospects.

Table 4.5: I believe that using ICT tools will help me achieve enhanced ICT skill.

I believe that using ICT tools will help me achieve enhanced ICT skill.				
	Frequency	Percent	Valid Percent	Cumulative Percent

Valid	strongly Agree	68	47.2	47.2	47.2
	Agree	50	34.7	34.7	81.9
	Neutral	15	10.4	10.4	92.4
	Disagree	4	2.8	2.8	95.1
	Strongly	7	4.9	4.9	100.0
	Total	144	100.0	100.0	

Table 4.6: Practicing ICT skills regularly benefits my academic performance

Practicing ICT skills regularly benefits my academic performance.					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	strongly Agree	45	31.3	31.3	31.3
	Agree	81	56.3	56.3	87.5
	Neutral	7	4.9	4.9	92.4
	Disagree	4	2.8	2.8	95.1
	Strongly	7	4.9	4.9	100.0
	Total	144	100.0	100.0	

The above table 4.5 show that I believe that using ICT tools will help me achieve enhanced ICT skill.68(47.2%) of the respondent response strongly disagreed,50(34.7%) of the respondent response agreed,15(10.4%)of the respondent were Neutral to give response ,4(2.8) respondent were respond Disagree ,7(4.9%) respondent were response strongly . The above table 4.5

indicate most of respondent was strongly agreed for I believe that using ICT tools will help me achieve enhanced ICT skill.

The above table 4.6 Practicing ICT skills regularly benefit my academic performance. was 45(31.3%) of respondent were strongly agreed. 81(56.3%) of the respondent were agreed. 7(4.9%) of the respondent were Neutral to give their response. 4(2.8%) of the respondent were Disagreed on the easy use of ICT, 7(4.9%) of the respondent were Strongly. table 4.6 indicates most of respondent Agree for Practicing ICT skills regularly benefits my academic performance.

Table 4.7: Using ICT tools makes my educational process easier.

Using ICT tools makes my educational process easier.					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	strongly Agree	44	30.6	30.6	30.6
	Agree	59	41.0	41.0	71.5
	Neutral	19	13.2	13.2	84.7
	Disagree	8	5.6	5.6	90.3
	Strongly	14	9.7	9.7	100.0
	Total	144	100.0	100.0	

The above table 4.7 show that Using ICT tools makes my educational process easier are 44(30.6%) of the respondent response strongly agreed, 59(41.0%) of the respondent response agreed,19(13.2%)of the respondent were Neutral to give response ,8(5.6%) respondent were respond Disagree ,14(9.7%) respondent were response strongly. this indicate most of respondent was agreed for Using ICT tools makes my educational process easier.

4.2.3 Effort Expectancy

Table 4.8 I find ICT tools easy to use for my educational process.

I find ICT tools easy to use for my educational process.					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	strongly Agree	61	42.4	42.4	42.4
	Agree	56	38.9	38.9	81.3
	Neutral	12	8.3	8.3	89.6
	Disagree	5	3.5	3.5	93.1
	Strongly	10	6.9	6.9	100.0
	Total	144	100.0	100.0	

The above table 4.8 show that I find ICT tools easy to use for my educational process are 61(42.4%) of the respondent response strongly agreed,56(38.9%) of the respondent response agreed,12(8.3%)of the respondent were Neutral to give response ,5(3.5%) respondent were respond Disagree ,10(6.9%) respondent were response strongly. this indicate most of respondent was strongly agreed for I find ICT tools easy to use for my educational process.

Table 4.9 The ICT tools provided by my school are user-friendly.

The ICT tools provided by my school are user-friendly.					
		Frequency	Percent	Valid Percent	Cumulative Percent

Valid	strongly Agree	61	42.4	42.4	42.4
	Agree	61	42.4	42.4	84.7
	Neutral	12	8.3	8.3	93.1
	Disagree	3	2.1	2.1	95.1
	Strongly	7	4.9	4.9	100.0
	Total	144	100.0	100.0	

The above table 4.9 show that The ICT tools provided by my school are user-friendly are 61(42.4%) of the respondent response strongly agreed,61(42.4%) of the respondent response agreed,12(8.3%)of the respondent were Neutral to give response ,3(2.1%) respondent were respond Disagree 7(4.9%) respondent were response strongly. this indicate most of respondent was strongly agree and agreed for ICT tools provided by my school are user-friendly.

Table 4.10 Learning to use ICT tools is straightforward

Learning to use ICT tools is straightforward.					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	strongly Agree	72	50.0	50.0	50.0
	Agree	54	37.5	37.5	87.5
	Neutral	8	5.6	5.6	93.1
	Disagree	9	6.3	6.3	99.3
	Strongly	1	.7	.7	100.0
	Total	144	100.0	100.0	

The above table 4.10 show that Learning to use ICT tools is straightforward are 72(50.0%) of the respondent response strongly agreed,54(37.5%) of the respondent response agreed,8(5.6%)of the respondent were Neutral to give response ,9(6.3%) respondent were respond Disagree 1(0.7%) respondent were response strongly. this indicate most of respondent was strongly agreed for Learning to use ICT tools is straightforward.

Table 4.11 I need minimal assistance to use ICT tools effectively.

I need minimal assistance to use ICT tools effectively.					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	strongly Agree	56	38.9	38.9	38.9
	Agree	58	40.3	40.3	79.2
	Neutral	14	9.7	9.7	88.9
	Disagree	6	4.2	4.2	93.1
	Strongly	10	6.9	6.9	100.0
	Total	144	100.0	100.0	

The above table 4.11 show that I need minimal assistance to use ICT tools effectively are 56(38.9%) of the respondent response strongly agreed,58(40.3%) of the respondent response agreed,14(9.7%)of the respondent were Neutral to give response ,6(4.2%) respondent were respond Disagree ,10(6.9%) respondent were response strongly. this indicate most of respondent was agreed for I need minimal assistance to use ICT tools effectively.

Table 4.12 The training provided for using ICT tools meets my needs.

The training provided for using ICT tools meets my needs.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	strongly Agree	54	37.5	37.5	37.5
	Agree	57	39.6	39.6	77.1
	Neutral	7	4.9	4.9	81.9
	Disagree	7	4.9	4.9	86.8
	Strongly	19	13.2	13.2	100.0
	Total	144	100.0	100.0	

The above table 4.12 show that The training provided for using ICT tools meets my needs are 54(37.5%) of the respondent response strongly agreed,57(39.6%) of the respondent response agreed,7(4.9%)of the respondent were Neutral to give response ,7(4.9%) respondent were respond Disagree ,19(13.2%) respondent were response strongly. this indicate most of respondent was agreed for training provided for using ICT tools meets my needs.

4.2.4 Social Influence

Table 4.13 My friends encourage me to use ICT tools for education.

My friends encourage me to use ICT tools for education.					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	strongly Agree	52	36.1	36.1	36.1
	Agree	46	31.9	31.9	68.1
	Neutral	18	12.5	12.5	80.6

	Disagree	7	4.9	4.9	85.4
	Strongly	21	14.6	14.6	100.0
	Total	144	100.0	100.0	

Table 4.14 my teachers believe that using ICT tools is important for my education.

My teachers believe that using ICT tools is important for my education.					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	strongly Agree	63	43.8	43.8	43.8
	Agree	48	33.3	33.3	77.1
	Neutral	12	8.3	8.3	85.4
	Disagree	9	6.3	6.3	91.7
	Strongly	12	8.3	8.3	100.0
	Total	144	100.0	100.0	

The above table 4.13 show My friends encourage me to use ICT tools for education that 52(36.1%) of the respondent response strongly disagreed, 46(31.9%) of the respondent response agreed, 18(12.5%) of the respondent were Neutral to give response, 7(4.9%) of the respondents disagree, 21(14.6%) of the respondent strongly. this indicate most of respondent was Strongly agreed for My friends encourage me to use ICT tools for education. The above table 4.14 my teachers believe that using ICT tools is important for my education was 63(43.8%) of respondent were strongly agreed. 48(33.3%) of the respondent were agreed. 12(8.3%) of the respondent were Neutral to give their response 9(6.3%) of the respondent were disagree to give their response 12(8.3%) of the respondent were strongly to give their response. this indicate most of

respondent was Strongly agreed for my teachers believe that using ICT tools is important for my education.

Table.4.15. My family supports my use of ICT tools for education.

My family supports my use of ICT tools for education.					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	strongly Agree	39	27.1	27.1	27.1
	Agree	59	41.0	41.0	68.1
	Neutral	17	11.8	11.8	79.9
	Disagree	11	7.6	7.6	87.5
	Strongly	18	12.5	12.5	100.0
	Total	144	100.0	100.0	

Table 4.16 The attitudes of my classmates influence how often I use ICT tools.

The attitudes of my classmates influence how often I use ICT tools.					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	strongly Agree	45	31.3	31.3	31.3

	Agree	81	56.3	56.3	87.5
	Neutral	7	4.9	4.9	92.4
	Disagree	4	2.8	2.8	95.1
	Strongly	7	4.9	4.9	100.0
	Total	144	100.0	100.0	

Table 4.17 I am motivated to use ICT tools because of the positive feedback from my peers.

I am motivated to use ICT tools because of the positive feedback from my peers.					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	strongly Agree	43	29.9	29.9	29.9
	Agree	59	41.0	41.0	70.8
	Neutral	19	13.2	13.2	84.0
	Disagree	8	5.6	5.6	89.6
	Strongly	15	10.4	10.4	100.0
	Total	144	100.0	100.0	

The above table 4.15 show My family supports my use of ICT tools for education that 39(27.1%) of the respondent response strongly disagreed, 59(41.0%) of the respondent response agreed, 17(11.8%) of the respondent were Neutral to give response, 11(7.6%) of the respondents disagree, 18(12.5%) of the respondent strongly. this indicate most of respondent was agreed for My family supports my use of ICT tools for education. The above table 4.16 show the attitudes of my classmates influence how often I use ICT tools was 45(31.3%) of respondent were strongly agreed. 81(56.3%) of the respondent were agreed. 7(4.9%) of the respondent were

Neutral to give their response 4(2.8%) of the respondent were disagree to give their response 7(4.9%) of the respondent were strongly to give their response. this indicate most of respondent was agreed for the attitudes of my classmates influence how often I use ICT tools. The above table 4.17 show I am motivated to use ICT tools because of the positive feedback from my peers was 43(29.9%) of respondent were strongly agreed. 59(41.0%) of the respondent were agreed. 19(13.2%) of the respondent were Neutral to give their response 8(5.6%) of the respondent were disagree to give their response 15(10.4%) of the respondent were strongly to give their response. this indicate most of respondent was agree for I am motivated to use ICT tools because of the positive feedback from my peers.

4.2.5 Facilitating Conditions

Table 4.18 I have adequate access to ICT tools (e.g., computers, internet)

I have adequate access to ICT tools (e.g., computers, internet) at education.					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	strongly Agree	61	42.4	42.4	42.4
	Agree	55	38.2	38.2	80.6
	Neutral	12	8.3	8.3	88.9
	Disagree	5	3.5	3.5	92.4
	Strongly	11	7.6	7.6	100.0
	Total	144	100.0	100.0	

Table 4.19 The ICT resources I need are available when I need them.

The ICT resources I need are available when I need them.					
		Frequency	Percent	Valid Percent	Cumulative

					Percent
Valid	strongly Agree	61	42.4	42.4	42.4
	Agree	61	42.4	42.4	84.7
	Neutral	12	8.3	8.3	93.1
	Disagree	3	2.1	2.1	95.1
	Strongly	7	4.9	4.9	100.0
	Total	144	100.0	100.0	

The above table 4.18 show I have adequate access to ICT tools (e.g., computers, internet) at education, that 61(42.4%) of the respondent response strongly disagreed, 55(38.2%) of the respondent response agreed, 12(8.5%) of the respondent were Neutral to give response, 5(3.5%) of the respondents disagree, 11(7.6%) of the respondent strongly, this indicate most of respondent was strongly agree for I have adequate access to ICT tools (e.g., computers, internet) at education. The above table 4.19 was 61(42.4%) of respondent were strongly agreed. 61(42.4%) of the respondent were agreed. 12(8.3%) of the respondent were Neutral to give their response 3(2.1%) of the respondent were disagree to give their response 7(4.9%) of the respondent were strongly to give their response. This indicate most of respondent was strongly agree and Agree for The ICT resources I need are available when I need them.

Table 4.20 Technical support is readily available when I encounter issues with ICT tools.

Technical support is readily available when I encounter issues with ICT tools.					
		Frequency	Percent	Valid Percent	Cumulative Percent
	strongly Agree	72	50.0	50.0	50.0

Valid	Agree	54	37.5	37.5	87.5
	Neutral	8	5.6	5.6	93.1
	Disagree	9	6.3	6.3	99.3
	Strongly	1	.7	.7	100.0
	Total	144	100.0	100.0	

The above table 4.20 show Technical support is readily available when I encounter issues with ICT tools. that 72(50.0%) of the respondent response strongly disagreed, 54(37.5%) of the respondent response agreed, 8(5.6%) of the respondent were Neutral to give response, 9(6.3%) of the respondents disagree, 1(0.7%) of the respondent strongly. this indicate most of respondent was strongly disagree for Technical support is readily available when I encounter issues with ICT tools.

Table 4.21 The quality of ICT infrastructure (e.g., internet speed, software) at my school is satisfactory.

The quality of ICT infrastructure (e.g., internet speed, software) at my school is satisfactory.					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	strongly Agree	56	38.9	38.9	38.9
	Agree	58	40.3	40.3	79.2
	Neutral	14	9.7	9.7	88.9
	Disagree	6	4.2	4.2	93.1
	Strongly	10	6.9	6.9	100.0

	Total	144	100.0	100.0	
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Table 4.22 There are sufficient training materials available for learning to use ICT tools.

There are sufficient training materials available for learning to use ICT tools.					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	strongly Agree	54	37.5	37.5	37.5
	Agree	57	39.6	39.6	77.1
	Neutral	7	4.9	4.9	81.9
	Disagree	7	4.9	4.9	86.8
	Strongly	19	13.2	13.2	100.0
	Total	144	100.0	100.0	

Table 4.23 I have the necessary resources to practice ICT skills outside of school.

I have the necessary resources to practice ICT skills outside of school.					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	strongly Agree	52	36.1	36.1	36.1
	Agree	46	31.9	31.9	68.1
	Neutral	18	12.5	12.5	80.6
	Disagree	7	4.9	4.9	85.4

	Strongly	21	14.6	14.6	100.0
	Total	144	100.0	100.0	

The above table 4.21 was 56(38.9%) of respondent were strongly agreed. 58(40.3%) of the respondent were agreed. 14(9.7%) of the respondent were Neutral to give their response 6(4.2%) of the respondent were disagree to give their response 10(6.9%) of the respondent were strongly to give their response. This indicates most of respondent was agree for The quality of ICT infrastructure (e.g., internet speed, software) at my school is satisfactory.

The above table 4.22 show There are sufficient training materials available for learning to use ICT tools. that 54(37.5%) of the respondent response strongly disagreed, 57(39.6%) of the respondent response agreed, 7(4.9%) of the respondent were Neutral to give response, 7(4.9%) of the respondents disagree, 19(13.2%) of the respondent strongly. This indicates most of respondent was agree for there are sufficient training materials available for learning to use ICT tools. The above table 4.23 was 52(36.1%) of respondent were strongly agreed. 46(31.9%) of the respondent were agreed. 18(12.5%) of the respondent were Neutral to give their response 7(4.9%) of the respondent were disagree to give their response 21(14.6%) of the respondent were strongly to give their response. This indicates most of respondent was strongly agree for I have the necessary resources to practice ICT skills outside of school.

Table 4.24. I can easily access ICT tools during school hours.

I can easily access ICT tools during school hours.					
			Percent	Valid Percent	Cumulative Percent
Valid	strongly Agree	43	29.9	29.9	29.9
	Agree	59	41.0	41.0	70.8

	Neutral	19	13.2	13.2	84.0
	Disagree	8	5.6	5.6	89.6
	Strongly	15	10.4	10.4	100.0
	Total	144	100.0	100.0	

The above table 4.24 show I can easily access ICT tools during school hours that 43(29.9%) of the respondent response strongly agreed, 59(41.0%) of the respondent response agreed, 19(13.2%) of the respondent were Neutral to give response, 8(5.6%) of the respondents disagree, 15(10.4%) of the respondent strongly. This indicates most of respondent was agree for I can easily access ICT tools during school hours.

4.2.6. Behavioral Intention

Table 4.25 I intend to continue using ICT tools in the future for my studies.

I intend to continue using ICT tools in the future for my studies.					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	strongly Agree	61	42.4	42.4	42.4
	Agree	55	38.2	38.2	80.6
	Neutral	12	8.3	8.3	88.9
	Disagree	5	3.5	3.5	92.4
	Strongly	11	7.6	7.6	100.0
	Total	144	100.0	100.0	

Table 4.26 I plan to engage more in ICT-related activities outside of school hours.

I plan to engage more in ICT-related activities outside of school hours.					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	strongly Agree	61	42.4	42.4	42.4
	Agree	61	42.4	42.4	84.7
	Neutral	12	8.3	8.3	93.1
	Disagree	3	2.1	2.1	95.1
	Strongly	7	4.9	4.9	100.0
	Total	144	100.0	100.0	

The above table 4.25 show that I intend to continue using ICT tools in the future for my studies, are 61(42.4%) of the respondent response strongly disagreed,55(38.2%) of the respondent response agreed,12(8.3%)of the respondent response neutral, 5(3.5%)of the respondent response disagreed,11(7.6%) of the respondent response strongly, this indicate most of the respondent was strongly for I intend to continue using ICT tools in the future for my studies.

The above table 4.26 show that I plan to engage more in ICT-related activities outside of school hours, are 61(42.4%) of the respondent response strongly disagreed, 61(42.4%) of the respondent response agreed,12(8.3%)of the respondent response neutral, 3(2.1%)of the respondent response disagreed,7(4.9%) of the respondent response strongly, this indicate most of the respondent was strongly and Agree for I plan to engage more in ICT-related activities outside of school hours.

Table 4.27 I am committed to improving my ICT skills regularly.

I am committed to improving my ICT skills regularly.					
		Frequency	Percent	Valid Percent	Cumulative Percent

Valid	strongly Agree	72	50.0	50.0	50.0
	Agree	54	37.5	37.5	87.5
	Neutral	8	5.6	5.6	93.1
	Disagree	9	6.3	6.3	99.3
	Strongly	1	.7	.7	100.0
	Total	144	100.0	100.0	

Table 4.28 I believe that using ICT tools will remain a key part of my academic success.

I believe that using ICT tools will remain a key part of my academic success.					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	strongly Agree	68	47.2	47.2	47.2
	Agree	50	34.7	34.7	81.9
	Neutral	15	10.4	10.4	92.4
	Disagree	4	2.8	2.8	95.1
	Strongly	7	4.9	4.9	100.0
	Total	144	100.0	100.0	

The above table 4.27 show I am committed to improving my ICT skills regularly, are 72(50.0%) of the respondent response strongly disagreed, 54(37.5%) of the respondent response agreed, 8(5.6%) of the respondent were neutral to give their response, 9(6.3%) of the respondents were

disagreed and 1(0.7%) of the respondent were strongly. this indicate most of the respondent was strongly Agree for I am committed to improving my ICT skills regularly..

Table 4.28 also show that I believe that using ICT tools will remain a key part of my academic success. are 68(47.2%) of the respondent response strongly agreed, 50(34.7%) of the respondent response agreed, 15(10.4%) of the respondent were neutral to give response, 4(2.8%) of the respondents were disagreed and 7(4.9%) of the respondent were strongly. this indicate most of the respondent was strongly Agree for I believe that using ICT tools will remain a key part of my academic success.

4.4 Discussion of Interview obtains from teachers and principals respondents.

The schools principals and ICT teachers as respondents mentioned that ICT is very important subject in school to facilitate educational process and to improve student's motivation. However, the school gives attention for other courses, those that are taken on national examination or university entrance exams. So, based on their response ICT is not required as a core area and not an urgent issue because it is not given on the national examination. The response is an indication that the teaching learning process is dominated by exam orientation. The ICT teacher's interviewer mentioned that it is difficult to motivate students in a class room just to copy what is written on the blackboard into their notebooks. However, the use of digital devices, such as tablets and PCs, gives students a fresh perspective in the class. The main benefit of ICT in education is that it can deliver information to others visually and audibly, and also allows for interactive lessons between teachers and students, or between students. When the teachers create a situation where students enjoy learning, it will lead to greater satisfaction in the classroom.

According to the school principals and ICT teachers respondents explained on the idea of using mobile phones to share data; they are aware of it and its potential advantage, putting the infrastructural constraint of sharing data and information over the network in the school environment as it requires either wired or wireless connectivity that might be made available in the school.

The ICT teacher interviewee mentioned that the ICT infrastructure in the school is insufficient, such as desktop computers, printer is not enough and Networking/Internet and Wi-Fi technology in schools is not available and also they are not maintained to function properly even if some of these devices are available. The respondents revealed that most of the teachers and principals use

application software for personal communication only but not for the classroom education purpose.

As the respondents mentioned great problems to affect students in ICT practical are lack of computer access, knowledge and skill gap of students on how to use ICT infrastructure, technology and skill gap as well as commitment challenges of ICT teachers. Most of the students attend the laboratory part rather than the theoretical part. However, without some theoretical background and motivations it might be difficult to properly operate and use the computer and other ICT devices that might be addressed by the teachers in the teaching process and available infrastructures.

The response from the interview to the school principals and ICT teachers has an indication of lack of giving attention on the benefits of ICT practical in the schools. The findings from interviewing teachers show that they perceive the advantages for ICT enhancing, but they are complaining ICT infrastructures and materials. This shows the ICT enhancing of in the selected secondary school is highly minimal.

4.5 Observation Results of Availability of ICT equipment tools or facilities in the Selected Secondary Schools of Oromia Region, East Guji Girja woreda.

The observation included checking whether the schools had the following ICT equipment's: sufficient computer laboratory, computer desktops, LCD projectors, and machine copyright, printer. The situation was that, if selected secondary schools had given ICT equipment, the researcher would mark it with a tick [√] as shown in table. The first objective of this study was used to provide information regarding the availability of ICT equipment's in the selected secondary schools of Oromia Region, East Guji Girja woreda. Thus the results of the observation findings were summarized in the table 29.

Table 4.29. Observation

School name	computer laboratory	computer desktops	LCD projectors	Machine copyright	Printer
Harenfama	-	√	√	√	√

Haro-Gobu	-	√	-	-	√
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The above results showed that none of the three (2) selected secondary schools has all the ICT equipment's that were listed in this study as the prerequisite for basic ICT enhancing. Furthermore, only one of the schools has a LCD projector and only one school had a machine copyright. Those select secondary schools have insufficient Printer and computer desktops. The above results imply that ICT enhancing in respect to the availability of equipment is still very minimal and a lot is yet expected to be done.

4.6 RESEARCH MODEL

Review of the technological literature of the research model. The objective of this study to investigate the assessment of student practicing ICT digital skill in Ethiopian high schools: (in case of east guji girja woreda). As this research develops, the model can be advanced to include intermediate variables.

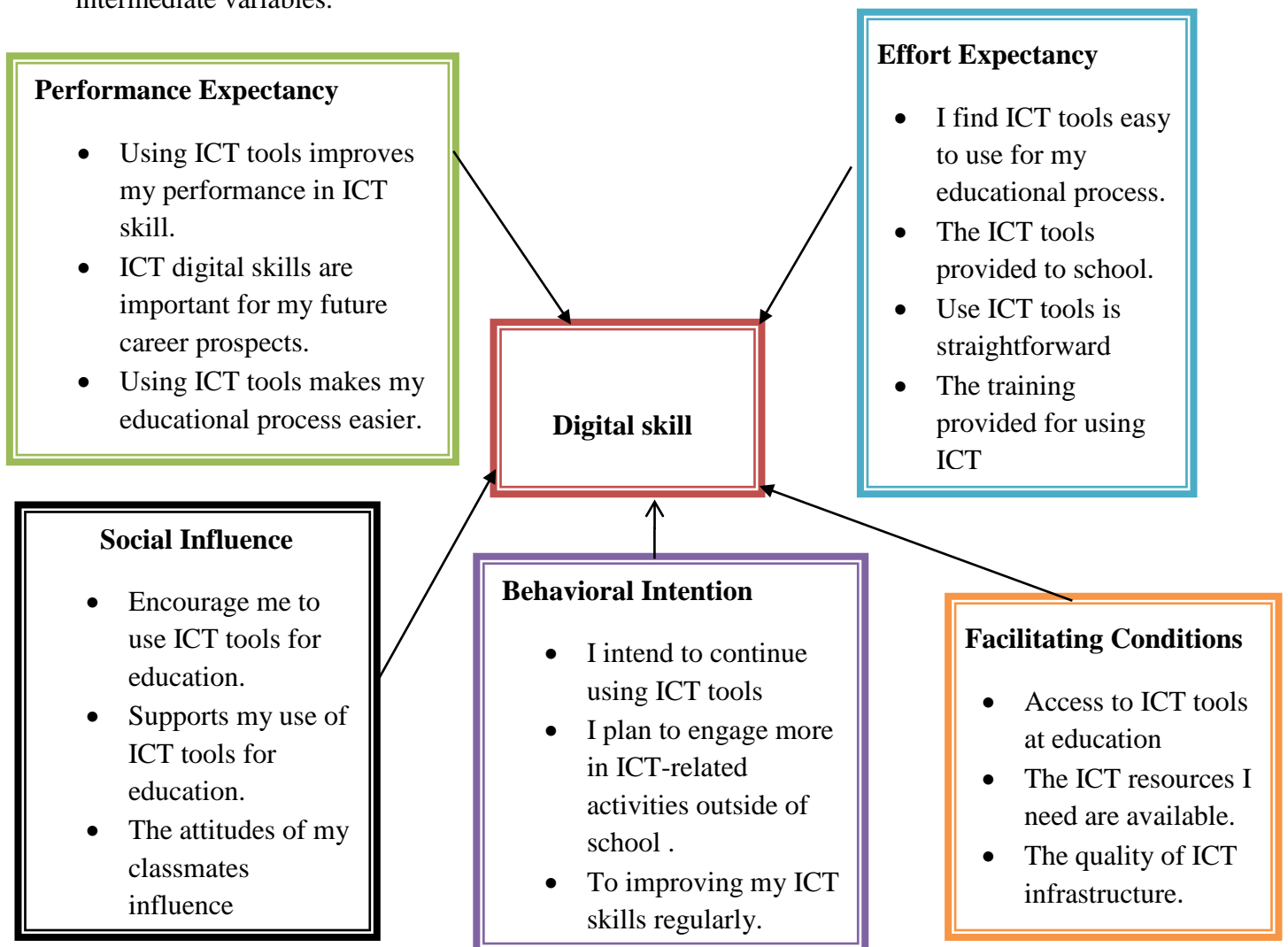


Figure 4.1. Research Model on ICT Digital Skill.

The model of ICT digital skill in teaching and learning process is the dependent variable. In this context, ICT digital skill can be described as a containing of the five independent variables, namely, Performance Expectancy, Effort Expectancy, Social Influence, Facilitating Conditions, and Behavioral Intention, digital skills. The digital skill is one where a decision is made to adopt an ICT in teaching and learning process. This indicates that ICTs are used to enhance the Teaching and learning process.

Effort Expectancy

Effort Expectancy refers to the perceived ease or difficulty that students experience when engaging with digital technologies. This concept is crucial as it influences students' willingness to adopt and effectively use digital tools for learning.

Understanding effort expectancy can help educators identify barriers that students face in integrating technology into their academic lives. For instance, if students believe that using digital resources requires significant effort or is beyond their capabilities, they may be less inclined to engage with these tools, ultimately affecting their digital literacy development.

I find ICT tools easy to use for my educational process.

In the rapidly evolving landscape of education, the integration of Information and Communication Technology (ICT) tools has become essential. One critical factor influencing the successful adoption of these tools is effort expectancy, which refers to the perceived ease of using technology. When learners believe that ICT tools are easy to use, they are more likely to engage with them effectively, thereby enhancing their educational experiences.

The statement, I find ICT tools easy to use for my educational process, encapsulates the essence of effort expectancy. This perception can significantly shape students' attitudes toward digital learning and their overall digital skills development.

The ICT tools provided to school

The integration of Information and Communication Technology (ICT) in education is paramount for fostering critical skills among students. In Ethiopia, the provision of ICT tools in high schools represents a significant step towards enhancing educational outcomes and preparing

students for a rapidly evolving job market. This study aims to assess the digital skills of high school students in Ethiopia, focusing on their interaction with and utilization of the ICT tools provided to them.

Effort expectancy, a key component of the Technology Acceptance Model, refers to the perceived ease of use associated with new technology. This research not only highlights the current state of digital skills among Ethiopian high school students but also seeks to identify factors influencing their engagement with ICT tools. Ultimately, the findings aim to inform policymakers, educators, and stakeholders about the effectiveness of ICT integration in schools and to guide future initiatives aimed at enhancing digital literacy across the education system

The training provided for using ICT

Effort Expectancy" plays a pivotal role, particularly regarding the training provided for using Information and Communication Technology (ICT). This concept reflects students' perceptions of the ease or difficulty associated with adopting and utilizing digital tools and resources. Effective training is essential to reduce effort expectancy, as it equips students with the necessary skills and confidence to navigate technology successfully.

Performance Expectancy

The Performance Expectancy very important for enhancing teaching and learning process; so, that includes Using ICT tools improves my performance in ICT skill, ICT digital skills are important for my future career prospects, Using ICT tools makes my educational process easier.

Using ICT tools improves my performance in ICT skill

With the development of learning technologies in the late 21st century, education system has changed rapidly. Using ICT tools improves my performance in ICT skill Nowadays, Ministry of education has provided some of facilities and training in order to enhance the use of technologies in the teaching and learning process. As performance in ICT skill the findings of the study revealed that there are teachers skill gap.

Teacher is must have Using ICT tools improves my performance in ICT s kill in teaching and learning process is the positive influences attitude of the student to adoption Information and communication technology in teaching learning process. Further, it has been found that the

allocates selected seconder schools enhancing teaching and learning process and so influences ICT adoption in the teaching and learning process Performance Expectancy is developing to the schools.

ICT digital skills are important for my future career prospects

Technology acceptance model ICT digital skills are important for my future career prospects where defined this variable the degree to which the prospective user expects the system to be free of effort respective to mental and physical efforts as well as ease of learning. Practicing ICT digital skill important for my future career prospects and both variables are significant predictors of attitude toward utilization.

Using ICT tools makes my educational process easier

In today's educational landscape, the integration of Information and Communication Technology (ICT) tools plays a crucial role in shaping the learning experience. A key concept in understanding the impact of these tools is performance expectancy, which refers to the degree to which individuals believe that using a particular technology will enhance their performance and productivity. Using ICT tools makes my educational process easier, highlights the essence of performance expectancy. When students perceive that ICT tools simplify their learning tasks, they are more likely to engage with these technologies effectively, leading to a more enriched educational experience

Social Influence

The assessment of students' digital skills in Ethiopian high schools is a critical step toward fostering a generation equipped to thrive in an increasingly interconnected and technology-driven world. As technology becomes integral to education, understanding how well students can navigate digital tools and platforms is essential for enhancing their learning experiences and future opportunities.

Encourage me to use ICT tools for education

The integration of Information and Communication Technology (ICT) tools is crucial for enhancing learning experiences and developing essential digital skills. In Ethiopia, where access

to technology is steadily increasing, it is vital to assess students' digital skills to ensure they can effectively utilize these tools in their education.

ICT tools, such as online learning platforms, educational software, and collaborative applications, not only support traditional learning methods but also foster critical thinking, creativity, and collaboration among students.

However, understanding the current state of students' digital skills is essential for implementing effective educational strategies. This assessment will provide insights into students' proficiency in using ICT tools, identify gaps in their skills, and highlight areas for improvement.

The attitudes of my classmates influence

The assessment of students' digital skills in Ethiopian high schools is not only a measure of their technical abilities but also reflects the broader social dynamics within the classroom. One significant factor influencing students' engagement with technology is the attitudes of their classmates. Peer perceptions and behaviors can profoundly impact individual motivation and willingness to embrace digital tools, making it essential to understand this social influence in the context of digital literacy.

Assessing the digital skills of students within this social framework allows educators to identify not only the technical competencies present in the classroom but also the collective mindset that influences these skills.

Facilitating Conditions

The assessment of students' digital skills in Ethiopian high schools is fundamentally linked to the concept of facilitating conditions, which encompass the resources, infrastructure, and support systems that enable effective learning with technology. As the demand for digital literacy grows, understanding these facilitating conditions is crucial for identifying both opportunities and challenges in integrating Information and Communication Technology (ICT) into education.

Moreover, supportive teaching practices, training for educators and access to technical assistance are vital components that shape students' experiences with technology. Without adequate facilitating conditions, even motivated students may struggle to enhance their digital competencies.

Access to ICT tools at education

Access to these tools is essential for developing digital competencies, yet disparities in availability and infrastructure can significantly impact students' learning experiences. The extent of access to ICT resources such as computers, internet connectivity, and educational software varies widely across urban and rural schools.

The ICT resources I need are available

The assessment of students' digital skills in Ethiopian high schools is significantly influenced by the facilitating conditions surrounding the availability of ICT resources. The ICT resources I need are available reflects a crucial aspect of the educational environment that can either enhance or hinder students' ability to develop essential digital competencies.

Behavioral Intention

Behavioral intention serves as a predictor of actual usage; students who express a strong intention to utilize ICT tools are more likely to actively engage with them, leading to enhanced digital skills. In Ethiopia, where disparities in access to technology can impact students' experiences, examining these intentions helps identify not only the current state of digital literacy but also the motivations and barriers students face in incorporating ICT into their education.

I intend to continue using ICT tools

I intend to continue using ICT tools, highlights the students' motivation and willingness to integrate technology into their learning processes. This intention is a critical factor influencing the development and enhancement of digital competencies, as it reflects not only their current usage but also their commitment to furthering their skills.

To improving my ICT skills regularly

By assessing students' intentions to improve their ICT skills regularly, educators and policymakers can identify effective strategies to support this growth. Initiatives such as workshops, mentorship programs, and access to online learning resources can facilitate students' aspirations, ensuring they feel empowered and equipped to navigate an increasingly digital landscape. Ultimately, understanding and promoting positive behavioral intentions toward ICT

skill improvement is vital for cultivating a generation of learners prepared to thrive in a technology-driven society.

4.6.1 Evaluation of the Research Model

ICT Digital Skills is the final outcome variable in the study model, which expands it to include essential elements from the UTAUT framework. So, the purpose of the study model, which is based on the UTAUT framework, is to better understand how digital skill can be successfully incorporated into secondary schools in rural areas in order to improve students' ICT digital skills. The model hypothesizes that students' aim to use digital skill tools is designed by their perceptions of the tools' performance, ease of use, social influences, and available support. This intent then translates into actual usage of computer learning, which in turn leads to the development of ICT digital skills in selected East Guji Girja Woreda secondary school.

4.6.2 Strengths of the Model:

- **Extensive:** The model encompasses a broad range of variables that take into consideration the various aspects affecting the enhancing and software of technology.
- **Predictive Power:** The approach offers a clear path for comprehending how technology enhancing might result in digital skill development by connecting Behavioral Intention to ICT Digital Skills.
- **Applicability:** The concept can be used in educational settings, especially when figuring out how to encourage students to use Assessment of student digital skill.

4.6.3 Expected Results for the Assessment of student digital skill in selected East Guji Girja woreda Secondary School.

As respondents stated to researcher the expected output from Assessment of student digital skill in teaching learning process are several: With the aid of this model, the educational process becomes simpler. It is more engaging for students, the standard of instruction, encouraging student creativity and independence, and making it easier for students to access resources. This strategy will make it easier for students to communicate by using digital skill. Using a computer device, students will also doing on their software like Microsoft word, PowerPoint, spreadsheet. This model will play a great role in selected secondary school of Girja Woreda by improving ICT digital skill and by minimizing the digital divide secondary school students.

4.7 Summary of the Research model

The model that has shown in picture 4.2 above shows the detail explanation of the research variables with their likert scale explanation to show the hypothesis of the model. The following summary of the research model is to show the independent variables and dependent variable with the follow of the path from independent to dependent variables. From this concept Performance Expectancy, Effort Expectancy, Social Influence, and Facilitating Conditions all directly influence Behavioral Intention to Digital Skill. Then Behavioral Intention then influences to the Digital Skills, which include in typing, software like Microsoft word, PowerPoint, spreadsheet.

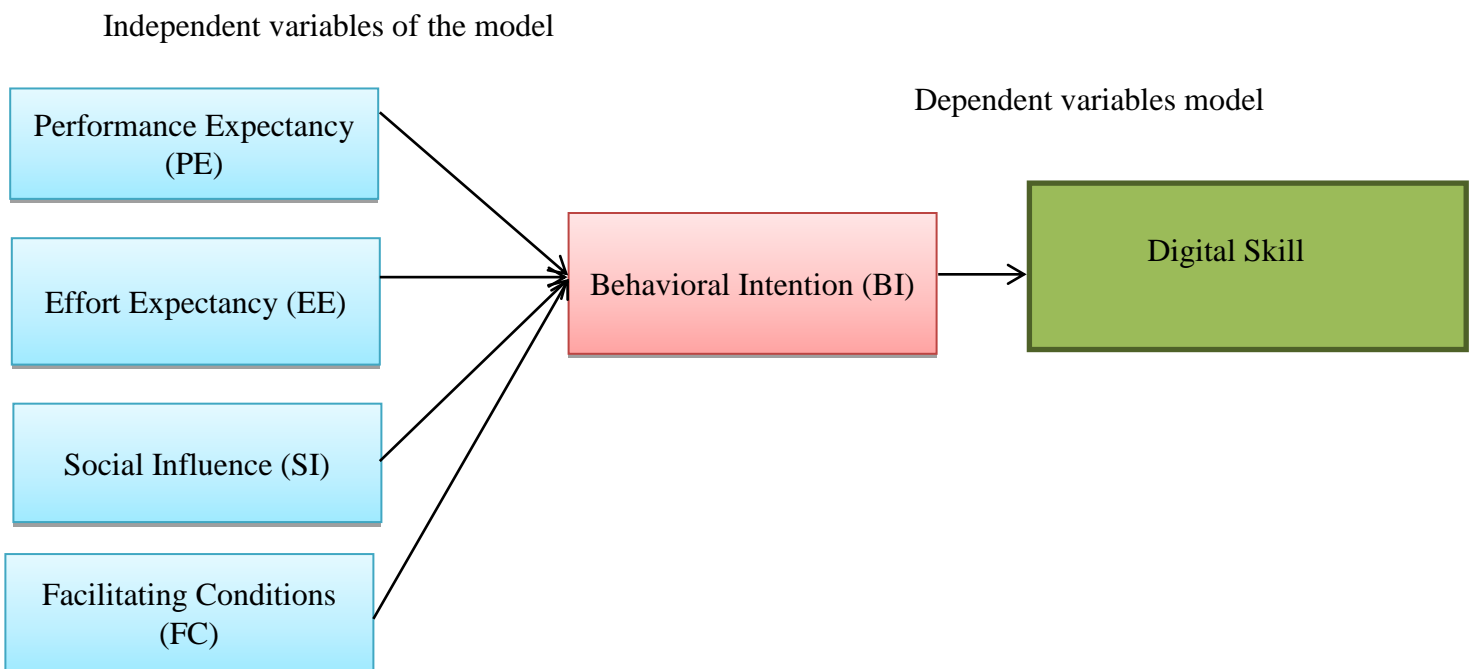


Figure 4.2. Research Model on ICT Digital Skill.

CHAPTER FIVE

5. SUMMARY OF THE KEY FINDINGS, CONCLUSIONS, RECOMMENDATIONS, AND FUTURE WORK

5.1. Summary of Key Findings

This section discusses the findings of this study in relation to existing literature. The study aims to investigate the use of ICT (Information and Communication Technology) in schools within the Guji Girja area to enhance education and training. The research focused on Haranfama and Haro Gobu schools. A descriptive and correlational a systematic search for the truth procedure for doing something was employed

A total of 144 students were randomly selected for the study, along with relevant data from both schools. The objective of this research and the associated questions were addressed through questionnaires, interviews, and observation.

The findings indicate that the use of digital skills in ICT is limited in these schools, reflecting a significant lack of access to computers, knowledge, and skills among students to effectively utilize ICT. As a result, many students showed insufficient interest in enhancing their educational experiences through digital skills.

In the study, 63(43.8%) of respondents disagreed with the statement "My peers have good skills and knowledge in using ICT," while only 9(6.3%) agreed. This highlights a general deficiency in the knowledge and skills required for effective ICT utilization.

Furthermore, 60(41.7%) respondents expressed disagreement with the statement, "There are enough computers in the ICT laboratory for learning," indicating a critical shortage of computer resources for both ICT and other subjects.

Most of the respondents 60(41.7%) has agree, 39(21.7%) strongly agree, 17(11.8%) neutral on the statement there is a ICT digital skills are important for my future career prospects and other subject, 10(6.9%) disagree, 18(12.5%) strongly. This revealed that there is ICT digital skills are

important for my future career prospects and any other subject that means there is a great problem on the ICT digital skill.

Many students reported difficulty in using digital skills effectively, demonstrating a need for additional support and training. The responses indicated that the ICT infrastructure, such as desktop computers, printers, and Wi-Fi, is inadequate in the schools. Many educators only use ICT for personal communication rather than for educational purposes.

5.2 Conclusion

This study reveals the potential of ICT to enhance students' learning through improved digital skills. Despite the initiatives for enhancing educational tools and skills, the effective use of ICT has not yet been realized. The objective of the study examining the use of digital skills in ICT in schools has shown that significant improvements are necessary.

Data collection involved structured questionnaires and analysis using SPSS. The research revealed that while ICT plays a crucial role in education, it has not yet been effectively implemented to enhance teaching and learning processes.

The findings suggest that digital skills are essential for educational success, yet many students face barriers in using ICT effectively. There is a clear need for more resources and training to improve digital competency.

5.3 Recommendations

The following are the findings of the study, it is clear that the practicing of ICT is important and beneficial in digital skill in secondary schools. In order to enhance teaching and learning process, there is need the secondary schools management, and students to adopt and use new technologies at all levels of their operations. Given the findings, the following recommendations are proposed to improve the use of digital skills in ICT. To do this, the paper recommends the following:-

- Students and school leaders should receive proper training to enhance their ICT skills.
- The Ministry of Education should collaborate with educational institutions to organize ongoing training for students and teachers.
- The government should ensure adequate provision of ICT resources and electrical power to schools.

- The Ministry of Education should secure computers, tablets, projectors, and other ICT tools for educational use.
- The government should monitor the effective integration of ICT in all schools.
- Students should utilize ICT resources and services effectively for their education.

5.4 Future Work

This study focused on the use of digital skills in ICT within Guji Girja schools, aiming to identify challenges and areas for improvement. Future research could explore additional issues such as digital skills, technological utilization, resource availability, and students' needs, providing a comprehensive view for further investigation and solutions.

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APPENDIX A: Questionnaire

HAWASA UNIVERSITY Institute of Technology

Department of Informatics

Master of Information Technology (MSc) program

Questioner to be filled by student's respondents.

Dear respondents,

I am **Firomsa Denu**, in among post graduated researcher from the University of Hawassa, carrying out on research study titled "Assessment of Student Practicing Ict Digital Skill in Ethiopian High Schools: (in case of East Guji Girja Woreda)" I shall be grateful for your kind assistance and participation in making this task a success.

Please enter the choice you have made by ticking (√) the answer in the space corresponding to your choice for structured questions. Write the response for the open ended question in the space provided. Your name will be treated with strict confidentiality and will not be published in this study.

Section 1: Student Demographic Information

Indicate your age (√):

A. 15-17 years old

B. 18-20 years old

C. 21 years old and above

Indicate your gender (√):

A. Male

B. Female

Indicate your Grade (√):

Grade 9

Grade 10

Grade 11

Grade 12

Research Question No1: How can we enhance students' digital skills in ICT within the school? (1 SA = Strongly Agree; 2 A = Agree; 3 U = Neutral; 4 D = Disagree; 5 SD = Strongly Disagree)

No	Items	Responses				
		5	4	3	2	1
	Performance Expectancy (PE)					
1	Using ICT tools enhances my performance in ICT skill.					
2	ICT digital skills are important for my future career prospects.					
3	I think that using ICT tools will help me achieve enhanced ICT skill.					
4	The regular Practicing of ICT skills is useful to my academic performance.					
5	The Usage of ICT tools makes my educational process easier.					
	Effort Expectancy (EE)					
6	I find it easy to use the provides ICT tools for my educational process.					
7	The ICT tools provided by my school are user-friendly.					
8	Learning to use ICT tools is straightforward.					
9	I need minimal assistance to use ICT tools effectively.					
10	The training provided for using ICT tools meets my needs.					

	Social Influence (SI)					
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11	My friends encourage me to use ICT tools for education.					
12	My teachers believe that using ICT tools is important for my education.					
13	My family supports my use of ICT tools for education.					
14	The attitudes of my classmates influence how often I use ICT tools.					
15	I am motivated to use ICT tools because of the positive feedback from my peers.					
	Facilitating Conditions (FC)					
16	I have adequate access to ICT tools (e.g., computers, internet) at education.					
17	The ICT resources I need are available when I need them.					
18	Technical support is readily available when I encounter issues with ICT tools.					
19	The quality of ICT infrastructure (e.g., internet speed, software) at my school is satisfactory.					
20	There are sufficient training materials available for learning to use ICT tools.					
21	I have the necessary resources to practice ICT skills outside of school.					
22	I can easily access ICT tools during school hours.					
	Behavioral Intention (BI)					
23	I intend to continue using ICT tools in the future for my studies.					
24	I plan to engage more in ICT-related activities outside of school hours.					
25	I am committed to improving my ICT skills regularly.					
26	I believe that using ICT tools will remain a key part of my academic success.					

APPENDIX B: Interview

Interview Questions

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

Dear Respondent:

I am a Master of Science (MSc) student in Information Technology (IT) at Hawassa University, Institute of Technology, Faculty of Informatics, Department of Information Technology. I am currently working on my thesis research titled " assessment of student practicing ICT digital skill in Ethiopian high schools: A Case Study of East Guji Girja Secondary Schools." I would like to hear your opinions. I appreciate your effort in answering all questions comprehensively. This research includes a questionnaire, and I kindly ask you to provide accurate and honest responses. Your name and the information you provide will be kept confidential and will not be linked to any individual or organization. All responses will be stored in a secure environment. The results of this study will be used solely for educational purposes. Thank you for your assistance.

Thank you for your time and participation.

Interview Questions

Please provide brief answers and comments.

1. Do you use digital skills in education through ICT?
 - A) Yes
 - B) No
2. If you answered "Yes" to question 1, how often do you use digital skills in education?
 - A) Daily
 - B) Weekly

- C) Bi-weekly
 - D) Occasionally
3. How do you use ICT skills in education?
- A) PowerPoint, MS Word, MS Excel
 - B) Computer
 - C) LCD Projector
 - D) Other uses (please specify)
4. When you use ICT skills in education, how do your students benefit from it?
- A) Yes
 - B) No
5. If you answered "No" to question 4, please explain why.
6. Does the use of digital skills in education show differences in students' outcomes?
- A) Yes
 - B) No
7. Among the teaching methods, what do students prefer for effective learning?
- A) Using ICT practices
 - B) Using theory
8. Do other teachers have a positive opinion about using ICT skills in education?
- A) Yes
 - B) No
9. Is digital skill utilization prevalent in your educational institution?
- A) Yes

- B) No

10. If you answered "Yes" to question 9, why is digital skill usage prevalent?

- A) To gain understanding of digital skills
- B) To seek additional knowledge
- C) For use with computers

11. If you have any other comments on question 8, please specify.

12. If you have any other comments on question 9, please specify.