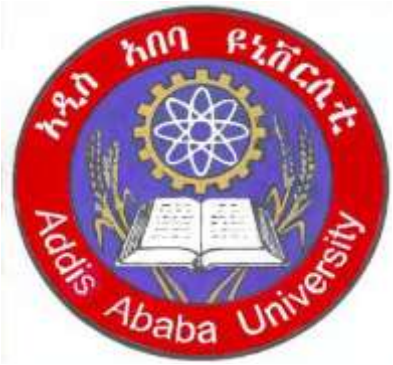

CHALLENGES IN USING INFORMATION AND COMUNICATION TECHINOLOGY (ICT) AMONG SECONDARY SCHOOLS TEACHERS OF YEKA SUBCITY, ADDIS ABABA CITY ADMINISTRATION

ADDIS ABABA UNIVERSITY
COLLEGE OF EDUCATION AND BEHVIORAL STUDIES
DEPARTMENT OF EDUCATIONAL PLANNING AND MANAGEMENT

.

BY:

HAILEMARIAM NEGA

ADVISOR: YEKUNOAMLAK ALEMU (PhD)

JUNE, 2022

ADDIS ABABA, ETHIOPIA

CHALLENGES IN USING INFORMATION AND COMUNICATION TECHNOLOGY(ICT) AMONG SECONDARY SCHOOLS TEACHERS OF YEKA SUBCITY, ADDIS ABABA CITY ADMINISTRATION

A Thesis Submitted to the School of Graduate Studies of Addis Ababa University in Partial Fulfillment of the Requirments for the Degree of Master of Arts In Educational Leadership and Management.

BY

HAILEMARIAM NEGA

JUNE 2022

ADDIS ABABA, ETHIOPIA

APPROVAL SHEET

CHALLENGES IN USING INFORMATION AND COMUNICATION TECHNOLOGY(ICT) AMONG SECONDARY SCHOOLS TEACHERS OF YEKA SUBCITY, ADDIS ABABA CITY ADMINISTRATION

By

HAILEMARIAM NEGA

DEPARTMENT OF EDUCATIONAL PLANNINING AND MANAGEMENT

APPROVED BY BOARD OF EXAMINERS

Chair, Dep't Graduate Committee	**Signature**	**Date**
Yekunoamlak Alemu (PhD)	yekuno	**June 17, 2022**
Advisor	**Signature**	**Date**
Internal Examiner	**Signature**	**Date**
External Examiner	**Signature**	**Date**

DECLARATION

I, the under signed, declared that this thesis is my original work and has not been presented for a research work in any other university, and that all sources of materials used for this thesis have been duly acknowledged.

Name: Hailemariam Nega

Signature: _____

Date: _____

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

Name: Yekunoamlak Alemu (PhD)

Signature: _____ Date: _____

ACKNOWLEDGEMENTS

Above all, I would like to express my gratitude to the Almighty God for giving me patience and health while undertaking the study.

My heartfelt gratitude would also be to my advisor, Yekunaamlak Alemu (PhD), for his immediate and continuous assistance, guidance, and encouragement from the very beginning to the end of the study.

My wife, W/ro Almaz Tsegaw, my daughter and sons deserve special thanks for their patience and understanding in time of my study.

I would like to thank my parents, brothers and sisters, brother-in-laws, sister-in-laws and cousins for their contractive advice and support.

Finally, I would like to thank my colleagues, the principals and teachers of the pilot and sample schools for their genuine support during data collection.

Table of Contents

List of Table

Acronyms

CAI-Computer Assisted Introduction

FGD-Focus Group Discussion

IAI-Internet Assisted Instruction

ICT-Information Communication Technology

IT-Information Technology

LCD-Liquid Crystal Display

MoE-Ministry of Education

PC-Personal Computer

SPSS-Statistical Package for Social Science

TAI-Television Assisted Instruction

TV-Television

UNDP-United Nation for Development Program

UNESCO-United Nations Education Science and Cultural Organization

ABSTRACT

The purpose of this study was to examine the challenges in using ICT among secondary school teachers in Yeka Sub-city, Addis Ababa City Administration. Furthermore, the study investigated the opportunities teachers obtain in using ICT. A descriptive survey design with a mixed methods approach was employed. Four public secondary schools were selected deliberately based on their location to address each corner of the sub-city. A systematic random sampling technique was employed to identify 201 sample teachers for the questionnaire. A purposive sampling technique is used to select school principals, and a comprehensive sampling technique was employed for ICT teachers' selection. As a result, four school principals, one from each sample school for interviews, and all ICT teachers in the sampled four schools were incorporated into the study in focus group discussion. The data obtained from the questionnaire was analyzed using percentage and mean as statistical methods. Focus group discussions and interviews were analyzed thematically in narrative form. The finding showed that the availability and use of computers, LCD projectors, videos, printers, laptops, smartphones, plasma televisions, and the internet were inadequate. The lack of internet connectivity; fluctuation (interruption) of power supply; high cost of hardware and software; computers being very old and slow; and computer illiteracy among teachers were the secondary challenges teachers encountered. Besides, lack of support to develop the spirit of collegiality and lack of encouragement to teachers for their own self-professional improvement were also considered as the major problems related to supervisory practices. Based on this, it was recommended that the City Administration Education Bureau should take appropriate measures, including the supply of adequate materials and professional support to the Sub-city as well as the schools. The provision should also include providing ICT laboratories with the necessary accessories to provide modern ICT education in schools, as well as providing administrative support for ICT teachers to fill gaps in their knowledge, roles, and skills required by the profession, so that they can better assist learners and improve the quality of their learning.

CHAPTER ONE

1. INTRODUCTION

In the present day, where digital technologies like computers are becoming more and more important, teachers expected to be skilled in using information and communication technology [ICT] to facilitate their teaching and learning. There are, however, several challenges in relation to using ICT among secondary school teachers. This section of the study comprises the background and the problem statement, the purpose of the study, research questions, and the significance of the study, delimitation, and operational definition of terms.

1.1 Background of the Problem

ICT is an umbrella term that encompasses any communication device or application, including radio, television, cellular phones, computer, network hardware and software, and satellite systems (Solomon, 2016) referred in Hailye Teklesilassie 2018.According to Rajput (2015) referred in Hailye Teklesilassie, ICT refers to any communication device or application such as a computer and the internet. ICT is a technology that provides access to information via telecommunications. It consists of computer applications like the internet and computers.

ICTs are making dynamic changes in society. They are influencing every aspect of human life, especially in this era of knowledge-based society (information society). ICT has become more important in different aspects, such as in education, business, governance, medicine, banking, transportation, and entertainment, generally in every aspect of human life.

Information and communication technologies are essential tools that can bring about impressive changes in the teaching and learning process. The use of ICT offers powerful learning environments and can transform the learning and teaching process so that students can deal with knowledge in an active, self-directed, and constructive way (Rita, 2017). At present, ICT is - considered an important means to promote new methods of instruction. It is used to develop students' skills in cooperation, communication, problem solving, and lifelong learning.

In the history of ICT, the United States was the first nation to use educational television broadcasts in 1933. In the African context, Nigeria was the first country to use television for education in 1954. In general, developing countries adopted ICT for instruction in the 1970s as a "leapfrog" over problems of low-quality education (Temtim, 2017). In the Ethiopian education system, the first television lessons began in October 1958 in Addis Ababa and its surrounding government schools and other private and government schools (Garetel, 1974) sited in Wakshum 2013.

In developing countries, however, the provision of quality education has been challenged by a lot of problems, such as shortages of qualified teachers, teaching materials, and lack of information needed for the subject matter, the scattered living conditions of the communities, and very low rates of literacy, which are associated with a heavy background of unfriendliness to technology. All these factors have encouraged an interest in the use of information and communications technologies (ICT) to deliver education. Furthermore, the fast-changing world of today necessitates the production of an ICT-literate workforce in order to meet the demands of the economy. In this regard, nowadays, the introduction and development of ICT in the teaching-learning process has been identified as one of the methods through which the quality of education has improved.

In doing this, it is impossible to address the whole issue of education without the use of information and communication technology (ICT). Providing modern education and connecting one to the world as well as satisfying the needs of contemporary societies requires the use of this technology (Liulseged, 2010).

Using ICT in education enables the sharing of knowledge regardless of time and space. It can provide access to education in remote areas. It also provides opportunities for students to receive a high-quality education from qualified teachers who are well-versed in the subject matter that introduces one to the modern world. Hence, education today without the use of ICT means isolating oneself or even a society from the globe and creating knowledge gaps between those who have and have not. Finally, it becomes one of the major reasons for backwardness. Due to this, various countries have already included and made satisfactory development in the use of ICT in the education sector (Liulseged, 2010).

It has also been argued that in the 21st century, using educational technology for instruction is not a matter of choice. Educators assert that to cope with the global competitive educational environment, it is important to take information and communication technology (ICT) as a necessity. Either positively or negatively, no matter how poor a nation is, it is inevitable that globalization affects a nation. (Wakshum, 2013).

Yeka Sub City is one of the eleven Sub-Cities of Addis Ababa. The sub city has seven public Secondary Schools with 28 principals, 751 teachers, 51 ICT teachers, and 16783 students. In seven public secondary schools, there are 28 ICT rooms with 428 functional and 73 non-functional computers. In addition, there are classrooms with 236 functional and 42 nonfunctional plasma TVs. Together with other factors, students' performance in teacher made classroom exams as well as national exams is not satisfactory. Performance in the national exam of two preparatory schools- KokebeTsibah and DejazemachWondrad, for example, indicates that only 31.7% of the students in KokebeTsibah who sat for the national exam (121 out of 381 students) and 40.6% of the students in DejazmatchWondrad (287 out of 707 students) had succeeded in passing the exam

The Ethiopian Education and Training Policy and its implementation document have given due attention to ICT to improve the quality of teaching and learning (MoE, 2002). However, there are a number of challenges in using ICT among secondary school teachers. Hence, this study aimed to investigate the challenges that secondary school teachers experience in Yeka Sub-city, Addis Ababa.

1.2 Statement of the Problem.

As compared to many African countries where educationalists are still grappling with policy issues and trying to formulate strategies for the adoption of ICT within their education sector. In Nigeria, a considerable amount of money has been invested in using ICT in education (secondary and high schools). However, ICT usage is still very low in the education sector due to different factors like lack of qualified ICT teachers, lack of computers, lack of ICT infrastructure, lack of internet connectivity, lack of technical support and lack of initiatives in schools (Tella, 2007) Ethiopia has done well in developing a detailed strategy and an accompanying implementation

plan, all with action plans and timelines. This does not mean that there are no challenges and constraining factors to the adoption of ICT (Hare, 2007).

ICT as a teaching aid is more complicated in that it demands specific skills from the teachers. Moreover, teachers are faced with some challenges and barriers that prevent them from employing ICT in the classroom or developing supporting materials through ICT. High school teachers are familiar with ICT and ICT usage. However, this does not necessarily mean that they integrate ICT into the curriculum. In addition, insufficient technical support at schools and little access to the Internet and ICT prevent teachers from using ICT in the classroom. The shortage of class time and the time needed to learn using ICT were reported as two other key barriers for teachers to integrate ICT into the curriculum. However regardless of the available ICT resoureces,many teachers are not seen efficiently using plasma TV to facilitate their classroom teaching.

In Ethiopia, studies also indicate that many secondary education teachers cannot connect computers to other computers, computers with printers, etc. (Girma, 2017). Since the government does not provide enough training for the school administration and ICT teachers about ICTs, they may not have the background knowledge to use ICTs. As a researcher also observed in secondary school using of ICT by the teachers and students and also availability of ICT materials in their school were poor.

According to Belay (2015) referred in Hailye Teklesilassie 2018, the low level of ICT infrastructure hinders the effective use of ICT in the teaching and learning process. Regarding this the Secondary Schools of yeka Sub-cities have a problem of ICT infra-structures, connection problems, CT laboratory constraints, shortage of classrooms.

To fill some existing gaps other researchers should do more research on the roles of ICTs, in education, the constraints and the factors that affect the use of ICT in education and many researches should conduct research in this area to realize effective use of ICTs in education (Belay, 2015) . Only little research done in other counties like South Africa, Ghana, Tanzania and Kenya but in the case of Ethiopian especially in secondary school no research on the issue of factors of usage of ICTs in high schools this indicates that there is a knowledge gap. So this study aims to investigate the factors that affect the current use of ICT public secondary schools in Yeka Sub-city, Addis Ababa.

Empirical data in relation to the challenges of teachers in Ethiopia using ICT is no wider. In particular, studies that examined the constraints and challenges among teachers in relation to effectively using ICT for the teaching and learning process in Yeka Sub-city, Addis Ababa secondary schools are limited. Of course, to understand the status of the utilization of ICT in schools, few studies undertaken in other contexts and developing countries like South Africa, Ghana, Tanzania, and Kenya. In the case of Ethiopia, especially in secondary schools, studies on the issue of challenges and in using ICT among teachers in secondary schools are not comprehensive and contextualized, which indicates a knowledge gap. Because of the researcher served in Yeka Sub City Education office and had observed the infrastructure, internet connection, lack of ICT labs and the absence of the plasma instruction an interest to dig out the main obstacles of using ICT in secondary schools and become a part of solution, this study aims to investigate the challenges that secondary school teachers are facing in Yeka Sub-city, Addis Ababa, in relation to using ICT. The study expected to portray the existing constraints and challenges in relation to ICT use, which provides an updated status on ICT use among teachers in secondary schools in the sub-city.

1.3 Research Questions

The study was guided by the following basic questions:

1. To what extent is ICT utilized by secondary school teachers in Yeka Sub-city?
2. What are the challenges in using ICT among secondary school teachers in Yeka Sub-city?
3. What opportunities are available for teachers in using ICT in their schools?

1.4. **Objective of the Study**

The objective of this study was to investigate the challenges related to using ICT among secondary school teachers in Addis Ababa, Yeka Sub-city.

1.4.1 General objective

The main objective of the current study was to examine the challenges in using ICT among secondary school teachers in Yeka Sub-city, Addis Ababa City Administration.

1.4.2 Specific Objectives

- To identify the extent of ICT utilization by secondary school teachers in Yeka Sub-city.
- To identify the challenges teachers face in using ICT in secondary schools in Yeka Sub-city.
- To identify the opportunities for using ICT in secondary schools in Yeka Sub-city.

1.5. Significance of the Study

ICT is one of the driving forces in the transformation and the solutions for quality education. Today, along with the development and advancement of ICT, ICT is able to provide new solutions and services for educational activities. For instance, ICT can offer new tools in education to deliver knowledge. The use of ICT in education has generated a significant amount of interest across the world in recent years. Although ICT tools are getting more and more popular, many teachers in secondary schools of Ethiopia still have many challenges to integrate ICT tools in their teaching activities. The investigation on the challenges in using ICT among secondary school teachers is of scientific significance because it enriches the understanding of strengths and challenges of using ICT in educational activities. In particular, this research sheds light on the challenges that teachers face when using ICT in secondary schools. The study can contribute to making plans for the use of ICT in secondary schools. The study can also serve as one source for future/further studies.

1.6. Delimitation of the Study

This study was important if it conducted in all secondary schools of Addis Ababa. However, due to several constraints like time, budget and large size (unmanageable) population the study confined to public secondary schools of Yeka Sub-City of Addis Ababa City Administration. Thematically, the study delimited to investigating the challenges in relation to using ICT among teachers in the secondary schools. The study was a cross sectional survey and data was collected at a time. Both qualitative and quantitative data collected so as answer the research questions of the investigation.

1.7. **Operational Definition of Terms**

ICT**:** Refers to the convergence of technologies and information services in communication telecommunications, and broadcasting. This includes computers, internet service, plasma TV etc. that facilitate the teaching learning process

Challenges**:** Refers to the constraints or obstacles related to the utilization of information and communication technology like computers, internet service, plasma TV etc.

Secondary School: Refers to Public Secondary Schools, which belong to grade 9-12.

Teachers: Teachers of Secondary School who teaches from grade9 -12

CHAPTER TWO

2. REVIEW OF RELATED LITERATURE

In this chapter, review of the literature related to the concept of ICT, ICT use in education, challenges related to using ICT among teachers and opportunities related to using ICT was made. Finally, a summary of the literature has undertaken.

2.1 Definition of ICT

Different writers and institutions have defined ICTs differently. According to UNESCO article (2009), ICTs defined as information-handling tools. A varied set of goods, applications, and services that used to produce, store, process, distribute, and exchange information. They include both traditional ICTs such as radio, television, and telephones as well as new ICTs such as computers, satellite and wireless technology, and the internet. These different tools are now able to work together and combine to form our networked world. A vast network of interconnected telephone services standardized computing hardware, the internet, radio, and television that reach all corners of the globe.

Rouse (2015), referred by Olokooba, et al (2018,).on the other hand, defines ICTs as an umbrella term that covers communication devices or applications that include computers, televisions, radios, networks, satellites, video conferencing, and eLearning. As Bluton (1999), defines ICT as shorthand for a computer, software, networks, satellites, links, and related systems that allow people to access, analyze, create, exchange, and use data, information, and knowledge in ways that, until recently, were almost unimaginable. Similar to the UNDP definition, Rouse also defines an umbrella, which is not a specific definition for this study but has importance in analyzing the concept broadly.

According to Elmo Global (2014),cited et al (2016) study on 'Assessment Of The Availability And Utilization Of Icts For Teaching And Learning In Secondary Schools-Case Of A High School In Kwekwe, Zimbabwe.' defines as ICT in education means teaching and learning using ICTs. In addition, he divided educational ICT tools into three categories, namely: input source, output, and others. According to his categorization, input sources include such things as personal computers (PCs), tablets, application software, student response systems, visualizers, or document cameras. An output source refers to such devices as projectors, interactive boards,

monitors, displayers, and television. Others include digital camera, digital recorders, switchers and other technologies. ICTs can lead to improved student learning and better teaching methods.

Dhital (2018) explains that ICT in education means teaching and learning by the use of ICT. Information and communication technologies (ICTs) are currently used in education to assist students to learn more effectively by providing teachers with access to a wide range of new pedagogy. These technologies are also being used to enable teachers to do administrative tasks more efficiently (Flecknoe, 2002). Information and communication technology (ICT) can complement, enrich and transform education for the better.

ICT in education has a multiplier effect throughout the education system, by enhancing learning and providing students with a new set of skills; by reaching students with poor or no access (especially those in rural and remote regions); by facilitating and improving the training of teachers; and by minimizing costs associated with traditional instruction (UNESCO, 2014).

Yusuf (2007) described ICT as an electronic technology used for accessing, processing, gathering, manipulating, presenting, and communicating information. He emphasized that when ICTs are employed in education, they can accelerate, enrich, and deepen basic skills in reading, writing, arithmetic, and the sciences, in addition to motivating and encouraging students to learn as they become more independent and responsible for their learning. Information communication technology is a tool (Nwakundo, Oguejiofor and Nwankwo, 2006) that comprises electronic devices that are utilized for the information and communication needs of institutions, organizations, students, and individuals. Such electronic devices include computers (software and hardware), networking, telephones, video, multimedia, and the internet. Application and utilization of these devices convert information, text messages, sounds and motion to common digital forms.

Hence, he concludes that information and communication technology in education is the use of all forms of technology-assisted programs, popularly known as Television Assisted Instruction (TAI), Radio Assisted Instruction (RAI), Computer Assisted Instruction (CAI), Mobile Learning, and Internet Assisted Instruction (IAI).

At the beginning of the 21st century, Toomey (2001), cited in Chair, Burton, Lockee& Bond (2017), explained that ICT is generally related to those technologies that are used for accessing,

gathering, manipulating, presenting or communicating information. The technologies could include hardware (e.g., computers and other devices); software applications; and connectivity (e.g., access to the Internet, local networking infrastructure, video conferencing). What is most significant about ICT is the increasing convergence of computer-based, multimedia, and communications technologies and the rapid rate of change that characterizes both the technologies and their use.

The International ICT Literacy Panel (2002) defined ICT literacy as using digital technology, communications tools, and/or networks to access, manage, integrate, evaluate, and create information in order to function in a knowledge society.

Unwin (2009) noted that although ICTs are primarily defined as computers and the internet, there are also other definitions that place more emphasis on the different types of technologies. He further asserted that ICTs should be seen as encompassing three main "interconnected processes: the capture of information, its storage, and the ways in which people access and share it."

Zuppo (2012) pointed out that defining ICTs in a global world had become challenging due in part to the many different connotations given to the term. Although the acronym ICT (or ICTs) has continuously referred to Information and Communications Technology, by 2012, ICTs were being defined in close association with the purposes for which they were used.

In summary, the earlier definitions have two categories: On the one hand, the definitions that are explained by UNDP, Rouse, Unwin, and Zuppo concern the general concept of ICTs, their acronyms, how to handle information, how to produce, store, and distribute information to different stakeholders, and the type of ICTs that exist. On the other hand, definitions by Elmo Global, Dhital, Yusuf, and UNESCO reveal the definition of ICTs in education, in particular, by categorizing educational ICT tools and their importance in enriching basic skills, which is more related to the research under study. However, all the definitions have tremendous importance in increasing the understanding of ICTs in different dimensions.

2.2 Use of ICT in Education

It is said that ICT is a key instrument in modern problem solving, to understand problem better, to design solution and ultimately create the kind of society we want. From this, one can

understand that with the absence of ICT, it is impossible to bring remarkable changes in education by cultivating citizens who have worldviews and problem solving skills. Therefore, ICT has a profound impact on our lives and educational system because of its potential to change our vision by creating a foundation for understanding. However, this does not mean that ICT can be applied in all countries without any problems to achieve the intended objectives due to different factors such as society's perception and attitudes as well as luck of awareness about a given technology. For instance, Emery (1977) referred by Wakshum 2013 showed that when instructional TV projects were started in the 1950s in the USA, there was great resistance in the fear that TV instruction would destroy the value of face-to-face instructions, displace teachers (who would lose their jobs), and increase costs. Similarly, in Ethiopia, there was great resistance to technological products like millstones, cars, and airplanes in the past.

Lemlem (2010) stated that it would have been better if plasma had not been introduced at all in Ethiopian secondary schools because it eliminates teachers' roles and discourages students' active involvement.

There was a time when people refused to grind grain in millstones since they considered it the devil's work. Even today, this attitude is not eliminated, though the resisting style varies. For instance, some people argue that the plasma teaching system forces students and teachers to be merely passive observers. Lemlem (2010) also suggest that it would be a serious mistake to assume that all resistance to a new medium comes from conservativeness or anti-progressivism, particularly in education. Undoubtedly, there must be reasons beyond resistance. Many teachers feel threatened because they believe that recent technological developments, particularly TV teaching methods, tend to put greater distance between the teacher and the student, though the developers of TV teaching methods deny this.

However, meaningful learning occurs when tasks are collaborative and cooperative. Khine (2006) sited in Washum 2013 argued that humans naturally work in learning and knowledge-building communities, exploiting each other's skills and sharing each other's knowledge. They naturally seek out others to help them solve certain problems and perform tasks. However, TV teaching designers believe that learning is an independent process when learners seldom have the opportunity to do anything that counts as collaborative with a teacher or other student. However, relying solely on a single method of instruction medium cheats learners out of more natural and

productive modes of thinking and learning. Therefore, collaborative-working encourages interactive, interdependent, and interrelated skills that promote meaningful learning.

Kedir (2006) suggested that education is a collaborative and collective task rather than transferring knowledge from pre-designed sources to recipients (students). Similarly,aas Lamish (1989:152) as sited in Wakshum 2013,pointed out four different ways in which the TV-teaching method affects students' school performances. They are displacement, information processing, and gratification, and they stimulate interest.

According to Carlson (2002) in the Liulseged study, the planners must first be clear about what educational outcomes are being targeted. These broad objectives can easily guide the selection of technologies and modes of use. This is because of the fact that the potential of each technology varies according to how it is used. The scholar mentioned above outlined five levels of technology use in education in general and ICT in particular. These levels are presentation, demonstration, drill and practice, interaction and collaboration.

On the basis of his conclusion, ICT can be used in all five levels. However, even though the choices are left to the planners in the education sector, and of course, a firm response must be recorded for the question, like for what purposes do we use ICTs such as educational television, computers, and the internet? Moreover, he recommends the three ways of choice that can be applied whenever ICTs are used in education, as presented below.

In order to harness the full potential of ICTs in education, a nation must come up with policies regarding the implementation of such solutions. Policies are as important as technological innovation itself. Policies encompass the master plan of what needs to be achieved within the political, economic, and social context (Swartz, 2008). In education, both educators and students need to utilize ICT technologies for purposes of research, lesson preparation, lesson delivery, assignment issuing, and submission. These technologies tend to improve the sources and quality of information obtained, as well as efficiency, effectiveness, and accuracy, which traditional methods did not have.

According to Gardener (2002), referred in Wakshum 2013,ICT has been implemented in schools for many years. Vrasidas and Glass (2005) referred in Kasongo Kalanda (2012) identify the efforts for introducing ICT into schools as the decade of 1960, when network connection

between schools' mainframe computers constituted the first infrastructure for promoting computer-based learning.

Local studies indicate that available ICTs are being utilized to a very low extent, and it is generally agreed that the given factors are indeed the ones affecting or hindering utilization of the available resources in schools. While these findings may not reveal the status of all schools, most of the high schools, especially in rural areas, are worse than in this case.

2.3. **Challenges of Using ICT**

The researcher observed many problems in adopting ICT in secondary schools of Yeka Sub City. For example:- understanding of using ICT, Using ICT in Education and Achievements, Challenges, and Prospects in Implementing Information and Communication Technology Expansion Program and so on.

A study by Ekberg and Gao (2017) and is entitled 'Understanding Challenges of Using ICT in Secondary Schools in Sweden from a Teachers' Perspective." The main objective is to investigate the views of teachers on the challenges of using ICT in secondary schools in Sweden. Ekberg and Gao followed a qualitative research approach with semi-structured interviews. According to the results, the authors found that the biggest challenges were associated with the perspective of teaching and teaching preparation. Most challenges from previous research have been re-confirmed by the interviewees in this study too. In addition, some new challenges were identified in their study. For instance, as the results indicated, it was time-consuming to find plagiarism in students' exercises, and there was a lack of ICT training in digital resources provided by the schools.

Another study by HadiSalehi and ZeinabSalehi (2012), which is entitled "Challenges for Using ICT in Education: Teachers' Insights'. This study aims to investigate the teachers' perceptions of the barriers and challenges preventing them from integrating ICT into the classroom**.** They have used a validated questionnaire to examine the high school English teachers' perceptions of the challenges and barriers preventing them from using ICT in the classroom. Two sections present the findings and results. The data from the second part, teachers' familiarity with ICT, is first provided. The findings are divided in the second section based on the challenges and barriers that prohibit teachers from implementing ICT in the classroom. Their research findings indicated that

although teachers had a strong desire to use ICT in the classroom, they encountered some barriers. Insufficient technical support at schools and little access to the Internet and ICT were considered the major barriers preventing teachers from integrating ICT into the curriculum. Moreover**,** the descriptive analysis of the results showed that the shortage of class time was another significant barrier discouraging teachers from using ICT in the classroom.

The third article is a study by Adhikari (2021) entitled "Teachers' Perception and Challenges of Using ICT in Teaching Mathematics at Secondary Level'. This study is also aimed at identifying the teachers' perceptions and challenges of using ICT tools in the mathematics classroom at the secondary level in Kathmandu district in Nepal. According to their research findings, lack of knowledge, confidence, enough experience, training, interest, and access to ICT tools, lack of technical support, lack of genuine ICT software, and unstable and unreliable internet connection at the schools were the teachers' challenges.

A study also by Balogun et.al (2017) is entitled "Teachers' Perceived Challenges of Using ICT in Teaching Secondary School Social Science Subjects in Ilorin, Nigeria." The descriptive survey research design was used by the researchers in the study a questionnaire titled "Challenges of using ICT in Secondary Schools (CICTSS)" was used. Findings of the study showed that many challenges, such as unavailability of computer laboratories, lack of instructional software, the inefficiency of teachers' technical knowledge, irregular power supply, and poor maintenance of computer systems, constrain the use of ICT facilities by social science teachers. The study also revealed that there is no statistically significant difference between male and female, private and public social science teachers on the challenges associated with the use of ICT facilities in schools.

Other reviewed is a study conducted by Liulel Seged W/Hana (2010) titled "Achievements, Challenges, and Prospects in Implementing Information and Communication Technology Expansion Program: The Case of Selected Preparatory Schools in Addis Ababa". A descriptive survey method used to identify the teachers' perceptions and positions, and purposive sampling used to select them. Teachers randomly selected from the four schools in the three sub-cities where the study had taken place. The researcher used four data collection instruments, such as questionnaires, interviews, direct observations, and document analysis.

According to the findings, implementations of ICT in schools faced challenges such as inadequate supply of ICT equipment like computers, plasma television displays, and their necessary accessories. In addition, scarce skilled personnel and insufficient ICT rooms, electric disconnection, network problems, all with a heavy background of unfriendliness to technology and little involvement of stakeholders, the challenges of teachers in teaching

2.4 **Opportunities in using ICT among Teachers**

According to Sedoyeka and Gafufenstudy (2013), computers in Tanzania's secondary schools are challenged and opportunities abound. Their finding shows that information, communication, and related technologies such as the Internet come with a number of opportunities. For rural and remote schools, the impact of ICT will be biblical. However, to be successful in implementing technologies in schools, a phased approach should be applied [Mooij and Sheets, 2001], cited in this research. Not only do ICTs give students, teachers, and communities the power of information, but they also provide alternative economic activities. With ICT, individuals can embark on computer repair businesses, software industries, mobile applications and many more. Small businesses will also benefit from having access to bigger markets and from using computers to manage businesses better. Local governments will also be able to get public services closer to people by making use of freely available platforms such as mobile phones. All these, and many more, are examples of opportunities that communities, governments, and schools will realize if the initiatives to introduce computers to secondary schools succeed.

In general, the definitions of ICT by many writers from various perspectives are evaluated under the review of relevant literature. In addition, the uses of ICT, the challenges of using ICT, and the benefits gained from using ICT are all noted. Regardless of the definitions and opportunities, the review reveals that there are challenges to teachers' use of ICT in secondary schools in various nations.

Summary of the Review

The literature review indicated that ICT is a broad concept that comprises diverse technologies that facilitate communication, teaching, and learning. In the Ethiopian context, though there are a number of ICT devices, the dominant facilities used in the school system are very limited. As a result, ICT use in education for this study focused on using personal computers (PCs), desktops, printers, plasma TVs, smart mobile phones, and the internet. As to the challenges, the present study focused on the difficulties and constraints related to the use of the aforementioned ICT devices. The literature review also had examined some of the opportunities for using ICT in education.

CHAPTER THREE

3. RESEARCH DSIGN AND METHOD

This chapter deals with the description of the study area, research design, sampling techniques, and methods of data collection, data analysis and ethical issues.

3.1. Description of Study Area

This study was carried out at Addis Ababa City Administration, Yeka Sub-city. Yeka is one of the 11 Sub Cities of Addis Ababa. In the Sub-city, there are 12 Weredas. The study focuses on public secondary schools in the Sub-city. There are seven public secondary schools in this sub city. In these schools, there are seven principals, 21 vice principals, 751 teachers, and 51 ICT teachers.

3.2. Research Approach and Design

Mixed methods research allows the opportunity to compensate for inherent method weaknesses of the quantitative- qualitative divide, capitalize on inherent method strengths, and offset inevitable method biases. Again, from different types of mixed approaches, the researcher used sequential exploratory strategy. This strategy uses qualitative data to assist in the interpretation of the quantitative findings. The quantitative data collection followed by a qualitative phase of data collection and analysis (Creswell, 2003). Therefore, this study used a descriptive survey design with a mixed methods approach to assess the challenges in using ICT among secondary school teachers in Yeka Sub-city, Addis Ababa. A mixed methods approach was selected because this approach helps to collect multiple kinds of data with different strategies from the study participants (Johnson & Turner, 2003).

3.3. Data Sources

In order to get the necessary information the researcher used both primary and secondary sources. The primary sources of data would be secondary school principals, academic teachers and ICT teachers of the selected secondary schools. The selection of these people as a source of data was based on the expectation that they have better information and experiences with respect to the study topic. In addition, the secondary sources of data including ICT -related documents

check lists of supervision, guidelines available in sub- city education offices and schools, and the wider related literature.

3.4 **Sampling design**

According to Kothari (2004), sample design is a definite plan for obtaining a sample from a given population. Teachers, school principals, and ICT teachers in the Sub-city are the principal populations in this study. As to the researcher's preliminary data sources, there are 751 teachers, 7 school principals, 21 school vice principals, and 51 ICT teachers in public secondary schools in Yeka Sub-city. Among the seven public secondary schools, four were selected deliberately based on their location two secondary schools Dejazmach Wondrad and Karalo Secondary Schools from Kotebe cluster and Kokebtsibah and Keftegna-12 Secondary Schools from Ferency Legacion cluster of the Sub-City. To determine the sample size from the total population of teachers in the four schools, Kothari sample size determination formula was used. After determining the sample size, a quota method was employed by the researcher to identify the teachers who participate in the study. The researcher divided the total population of teachers in the four schools with the sample size determined by the Kothari formula, and then, after knowing the computed number, the researcher selected a random number according to the quota. As contingent,13 teachers were included in the sample numbers if some teachers did not return the questionnaire.

$$Ss=\frac{NV+[Se^2(1-P)]}{NSe+[V^2p\ (1-P)]}$$

Where**:**Ss= sample size

N= Total number of population

V= Standard value (2.58) at 1 percent level of probability with 0.99 reliability

Se= Sampling error (0.01)

P = Largest possible proportion (0.50)

T**able 3.1Teachers population, sample size and percentage of sample.**

N0	Name of schools	N	S	%S	CS
1	Dejazmachwondradsecondat	131	48	36.6%	3
2	KokebeTsibah Secondary School	173	63	36.4%	4

3	KaraloSecondary School	130	48	36.9%	3
4	Keftegna-12 Secondary School	104	38	36.5%	3
Total ICT Population and Sample Respondents		538	197	36.6%	13

N= Total population S=Sample % S=Percentage of sample CS=contingent teachers

A purposive sampling technique used to select school principals, and a comprehensive sampling technique employed for ICT teachers' selection. As a result, four school principals, one from each sample school, and all ICT teachers in the sampled four schools were incorporated into the study.

Table 3.2 Sample ICT teachers 'population and participants in each school

N0	Name of schools	N	S	S (%)
1	DejazmachWondrad Secondary School	9	6	66.7
2	KokebeTsibah Secondary School	9	6	66.7
3	Karalo Secondary School	11	6	54.54
4	Keftegna-12 Secondary School	7	6	85.7
Total Sample Population and Respondents Percentage		36	22	61

N= Total number of ICT teacher in each school S= Number of respondent ICT teachers

S%= Percentage of respondent ICT teachers in each school

3.5 Data Collection Instruments

The sources of data for the study were school principals, academic teachers and ICT teachers of sample schools. To collect data from the sample participants the researcher used questionnaire, FGD and Key informant interview.

3.5.1 Questionnaire

The researcher used questionnaire with close-ended and open-ended questions from prior similar studies after reviewing the literature. The questionnaire prepared only for academic teachers. After the advisors had made a constructive comment, the questionnaire was distributed for reliability pilot test in one of the non-sample school of the Sub-city. After the reliability test had taken, the questionnaire was distributed to the teachers of sample school. From the distributed 213 questionnaires, 201(94.4% questionnaires were filled by teachers and returned. The questionnaire had four parts; the first part asks about availability of ICT tools contains eight close-ended questions. The second part asks about the use of ICT tools which contains eight close-ended and one open-ended question. The third part asks about challenges faced in using ICT tools contains twelve close-ended and one open-ended questions and the last part which ask teachers about opportunity of using ICT tools. Thirty three Likert scale close-ended and 3open-ended questions were prepared.

3.5.2 Focus Group Discussion

The FGD had been taken with the ICT teachers because these groups of participants have direct contact with using and maintain ICT apparatus and this helps to the study to know some hidden points and to get further information for the study that are not touch by the interview and questionnaire. The discussion was led by the researcher. For this discussions (one at each school) were held with 6 to 8 members and the researcher conducted the discussion at the participants' ICT laboratory room for a period of one hour in each sample school.

3.5.3 Key Informant Interview

Key informant interview is a flexible instrument and it allows for an in-depth questioning when it is properly planned, structured and conducted. It can help to get information about the challenges from the participants' experience. As indicated in Wilkinson and Bhandarkar (1999), interviewing is necessary to get deep feeling, perceptions, values or how people interpret the world around them, and past events.

All kind of data collection tools were designed in Amharic and then translated to English for the report. Interview was held with the four school principal's one from each school, who were selected purposively according to their contribution of giving information. Structured interview guide was prepared for this purpose. Participants' convenient time and place was respected and

finally the interview was held in each of the principal's office with 30-40 minutes duration. The interviews were recorded with video camera for analysis.

3.6. Piloting the Instruments

The questionnaire was pre-tested with 35 teachers of sample respondents in a non-sampled school before the actual data collection to make sure that the questions are clear, relevant and could be understood by the respondents. As soon as pre-testing of the questionnaire was pretested for Cronbach alpha reliability test and it had completed, the questions were rearranged (clarity, wording of items, and weakness) based on the feedback obtained from the respondents. Cronbach Alpha Reliability Statistics confirm the reliability of the instrument as follows the table.

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.737	.687	33

3.7. **Data Collection Procedure**

The researcher took support letter from Addis Ababa University, Department of Educational Planning and Management and submitted to the Sub-city education office and selected schools. After having permission from the institutions the researcher booked time for data collection.

After getting scheduled the researcher selected and oriented two data collectors and assigned to the sampled schools. The researcher supervised the data collection process. The collected data were edited and coded by the researcher and entered the data into statistical software SPSS. Finally data were checked carefully for missing value and inconsistencies.

Key informant interviews with school principals and FGD with ICT teachers were conducted by the researcher. The interview questions consist of open-ended items. Generally interviews and FGDs were carried out in a friendly and open atmosphere. Interviews and FGDs with the participants took place in their schools at times convenient for them after advance booking. A brief explanation of the aim of the study and confidentiality related issues given to the participants. The researcher will insure that the environment is conducive to conducting

interviews and FGDs. Semi-structured interview and FGD guides were prepared and the probing questions technique used to collect data. Each interview and FGDs continued for 40- 60 minutes. All events had recorded using a mini cassette recorder. Following this, the interviews and FGDs had transcribed.

3.8. Data Analysis Method

A. The Quantitative Data

The quantitative data were edited and coded by the researcher to enter the data into statistical software SPSS version-23 and interpreted by using descriptive statistics like mean, frequency, and percentage. Finally, the data were checked carefully for missing values and inconsistencies.

B. The Qualitative Data

Recorded interviews and FGDs were transcribed by the researcher. This was done in two ways: A: The researcher spent time listening to recordings of the interviews in order to become familiar with the data. B: The researcher used short notes taken from the interviews and FGDs to internalize the key points of the collected data. The interview and FGD data was narrated in relation with questionnaire items analysis method was used to analyze the data. This was achieved by applying a step-by-step coding and categorizing scheme as proposed by Richie et al. (2003).

3.9. Ethical Consideration

The researcher took a support letter to the sub city education office and schools from Addis Ababa University, Department of Educational Planning and Management. The study is conducted in a normal social setting and it does not fall into the sensitive research issue category. The purpose of the study was made clear to the participants so that the study participants will feel comfortable giving data.

The information sheet, which describes the study aim and objectives as well as ethical principles of the study such as confidentiality, the right to voluntary participation, and the right to withdraw from the study at any stage without any precondition, was discussed with the participants. Similarly, informed consent was received to ensure that participants understand their rights, and the participants were requested to give informed consent form only after they understood their rights and are willing to participate in the interviews.

Information collected from the participants was kept confidential. The anonymity and confidentiality of the participants was protected by coding. No one had access to the data except the researcher and the advisor.

CHAPTER FOUR

3. DATAPRESENTATION, ANALYSIS AND INTERPRETATION

This chapter deals with data presentation, analysis and interpretation. To collect data three different tools were used these were questionnaire, interview and focus group discussion. The data obtained from the questionnaire were analyzed quantitatively by using frequency, percentage and means On the other hand; the data obtained from interview and focus group discussion were analyzed and described thematically in narrative form.

4.1 Background Information of Respondents.

The responses obtained from teachers regarding their demographic information, work experience and academic status is presented in Table 4.1 below

Table 4.1backgroundinformation of respondents.

1	Sex	M	F	%
		Male	144	71.6
		Female	57	28.4
		Total	201	100
2	Age	20-30	51	25.4
		31-40	104	51.7
		41-50	32	15.9
		Above 50	14	7
		Total	201	100
3	Work Experience	Below 2 years	13	6.5
		3 years	6	3
		4 years	7	3.5
		5 years	6	3
		Above 5 years	169	84.1
		Total	201	100
4	Academic status	Bachelor's Degree	122	60.7
		Master's Degree	79	39.3
		Total	201	100

As shown in Table 4.1 above, 71.6% of the respondents were males. Female teachers accounted only 22.8%.This implies that females representation in secondary schools of the sub city is low as the data obtained from document of the Sub-City indicated that female teacher in the seven

schools were 25.8% and hence, a need to work on increasing the participation of female teachers in secondary schools.

Concerning their age, 51 (25.4%) of the respondents were found between 20-30. years 104 (51.7%) of the teachers were between the ages of 31and 40. In addition, 31 (15.9%) of respondents were found between the ages of 41 and 50, and the remaining, 14 (7%) of respondents were over 50 years of age. This indicates that most of the teachers in YEKA sub-city public secondary schools were in the age range 30 to 50. This shows that most teachers in the secondary schools are at productive age.

Regarding work experience, 169 (84.1%) respondents have more than 5 years of experience whereas 6 (3%) , 7 (3.5%) and 6 (3%) of the teachers have 3 4 and 5 years of experience, Thirteen (6.5%) ,of the ,teachers have less than two years of experience. This indicates that majority of the teachers in the Sub-city secondary schools are experienced which enables the staff to better share experience.

Referring to their academic status, diploma and PhD qualification were not observed. Among the sample 122 (60.7%) had Bachelor Degree whereas 79 (39.3%) had Master's degree. This academic status shows that the qualification of most of the respondents was more or less up to the standard for grade level to bring the required competency of students.

4.2 Availability of ICT Tools/Facilities in the School

Table 4.2 Teachers response related to availability of ICT tools/Facilities

N0	Items	Adequate		Inadequate		None		Mean	Total	
		F	*%*	*F*	*%*	*F*	*%*		*F*	*%*
1	Availability of Computer in Schools	15	7.5	76	37.8	110	54.7	1.53	201	100
2	Availability of LCD projectors in Schools	7	3.5	21	10.4	173	86.1	1.17	201	100
3	Availability of Videos in Schools	4	2	26	12.9	171	85.1	1.16	201	100
4	Availability of Printers in Schools	16	8	67	33.3	118	58.7	1.49	201	100
5	Availability of Laptops in Schools	6	3	16	8	179	89.1	1.14	201	100
6	Availability of Smart mobile phones in Secondary	14	7	39	19.4	148	73.6	1.33	201	100
7	Availability of Plasma TV in Schools	44	21.9	65	32.3	92	45.8	1.76	201	100
8	Availability of Internet in Schools	21	10.4	80	39.8	100	49.8	1.61	201	100

In table 4.2 above, the respondents asked about their perceptions of the availability of ICT tools. As a result, 110 (54.7%) of respondents claimed that there are never computers in schools, 76 (37.8%) said that the availability of computers in their respective schools is inadequate, and 15 (7.5%) said adequate. This research revealed that more than 54.7 percent of the 201 respondents acknowledged the lack of computers in their school, posing a problem in the teaching learning process for instructors who were unable to get their pupils to the requisite proficiency utilizing the tools.

The LCD projector is another significant piece of ICT equipment in schools for teaching ICT. When it came to the availability of this instrument, 173 (86.1%) of the respondents said there were no LCD projectors available. In addition, 21 (10.4 percent) of respondents claimed there were insufficient LCD projects, while the remaining seven (3.5 percent) said there were insufficient LCD projectors. This shows that there was no LCD projector available to give educational activities and training to students and staff in order for pupils to meet the school's goals.171 (85.1%) of respondents said there is no video, 26 (12.9%) said it is inadequate, and 4 (2%) said it is acceptable, indicating that the lack of video in the workplace is a significant issue. On the availability of printers in schools, 118 (58.7%) of teachers responded to the absence of printers, while 67 (33.3%) of teachers responded that there were inadequate printers, and 16 (8%) responded to adequate and adequate, respectively. The result indicates that printers in all the sample schools are very limited and cannot give a chance for teachers to use them.

Regarding laptop/tablet availability, 179 (89.1%) respondents stated that no computers were accessible, whereas 16 (8%) and six (3%) respondents stated that laptop availability was inadequate and adequate, respectively. In terms of smart mobile phone availability in schools, 148 (73.6%) respondents claimed there were no smartphones available, while 39 (19.4%) and 14 (7%), respectively, thought smartphones were insufficient and adequate. According to teachers' comments, laptops and cellphones were key tools for instructors to employ when integrating ICT into the classroom; nevertheless, these items are in low supply, according to students' performance. In terms of plasma TV availability in schools, 92 (45.8%) respondents claimed that there are no plasma TVs in schools, 65 (32.3%) respondents stated that there are insufficient plasma TVs, and 44 (21.9%) respondents stated that there are acceptable plasma TVs. When asked if there was an internet connection at their school, 100 (49.8%) of them responded no. There is an inadequate internet connection for 80 (39.8%) of respondents, whereas there is an adequate internet connection for 21 (10.4%) of respondents. This finding suggests that school internet connections are weak, which is one of the challenges teachers encounter when using ICT tools.

Concerning availability of Information and Communication Technology tools and the network connection, among the four ICT teacher groups, group 2 members said that in addition to the unavailability of Information and Communication tools, the school administrators are not volunteer and need not try to solve the problem as much as the school capacity can do.(30/8/2014 E.C)

4.3 Use of ICTs.

Table 4.3 Teachers response related to use of ICTs.

N0	Items	Always		Sometimes		Rarely		None	Mean		Total	
		F	%	F	%	F	%	F	%		F	%
1	Computer	18	9	29	14.4	42	20.9	112	55.7	1.77	201	100
2	LCD Projector	1	0.5	9	4.5	17	8.5	174	86.6	1.19	201	100
3	Video	2	1	13	6.5	34	16.9	152	75.6	1.33	201	100
4	Printer	9	4.5	23	11.4	56	27.9	113	56.2	1.64	201	100
5	Laptop/tabletes	15	7.5	14	7	30	14.9	142	70.6	1.51	201	100
6	Smart mobile phone	35	17.4	16	8	52	25.9	98	48.8	1.94	201	100
7	Plasma TV	11	5.5	15	7.5	40	19.9	135	67.2	1.51	201	100
8	Internet	27	13.4	30	14.9	62	30.8	82	40.8	2.01	201	100

When it came to the usage of video in schools, the responses were 152 (75.6%) none, 34 (16.9%) seldom, 13 (6.5%) occasionally, and one (1.1%) usually, respectively. In addition, 113 (56.2%) of respondents said they never used a printer; 56 (27.9%) said they used it seldom; 23 (11.4%) said they used it sometimes; and nine (4.5%) said they used it regularly. In another situation, when asked how often they use laptops, 142 (70.6%) said never, 30 (14.9%) said seldom, 14 (7%) said occasionally, and 15 (7.5%) said usually. In general, there are only 7.5%, 15.9%, and

14.4% of users of video, printers, and laptops, respectively. This analysis led to the conclusion that ICT videos and printers are underutilized.

Similarly, when asked how often they use smart phones, 98 (48.8%) said never, 52 (25.9%) said seldom, 16 (8%) said occasionally, and 35 (17.4%) said usually. In the instance of plasma TV viewing, respondents responded as follows: 135 (67.2%) said they never, 40 (19.9%) said they seldom, 15 (7.5%) said they occasionally, and 11 (5.5%) said they often. Furthermore, 82 (40.8%) said they never use the Internet, 62 (30.8%) said they rarely use it, 30 (14.9%) said they use it occasionally, and 27 (13.4%) said they always use it. This demonstrates that only 25.4%, 13%, and 28.3% of teachers, respectively, use Smartphones, plasma TVs, and the internet. Considering never and rarely responded answers as there is no use of ICT, 76.6%, 95.1%, 92.5%, 84.9%, 85.5%, 74.7%, 87.1%, and 71.6% of teachers did not use computers, LCD, video, printer, and laptop, smartphone plasma TV, and Internet respectively. This result showed the use of ICT in classrooms was minimal or below 25%, which is too low.

Local studies like Hailye Teklesilassie(2018) on the factors affecting the current use of ICT in public and private Secondary School also indicate that available ICTs are being utilized to a very low extent, and it is generally agreed that the given factors are indeed the ones affecting or hindering utilization of the available resources in schools. This may be due to the argument reviewed by Khine.

Khine (2006) argued that humans naturally work in learning and knowledge-building communities, exploiting each other's skills and sharing each other's knowledge. They naturally seek out others to help them solve certain problems and perform tasks. However, TV teaching designers believe that learning is an independent process when learners seldom have the opportunity to do anything that counts as collaborative with a teacher or other student. However, relying solely on a single method of instruction medium cheats learners out of more natural and productive modes of thinking and learning. Therefore, collaborative-working encourages interactive, interdependent, and interrelated skills that promote meaningful learning.

In this regard, one of the school principals said the following:

> *These days, due to a lack of budget and the high price of ICT equipment, a shortage of computers and internet connection infrastructure is common in government secondary schools. Besides, as the number of students increases from time to time, we are working to accommodate the students even by collapsing ICT rooms. In addition, due to T-client being out of use, which is used for school net connection, and a server problem, there is no plasma mode of instruction at all. (4/9/2014)*

In general, the above analysis and literature show that the use of ICT in the sample schools was below what was expected and the standard.

4.4 Challenges Faced in the Use of ICTs

Table 2.4 Teacher's response related to challenges faced in the use of ICTs.

NO	Items	S.Agree		Agree		M.Agree		Disagree		S.Disagree		Mean	Total	
		F	%	F	%	F	%	F	%	F	%		F	%
1	Inadequate number of Computers.	97	48.3	49	24.4	34	16.9	7	3.5	14	7	4.03	201	100
2	Lack of internet connectivity.	81	40.3	48	23.9	44	21.9	15	7.5	13	6.5	3.84	201	100
3	Fluctuation (interruption) of power supply.	69	34.3	41	20.4	55	27.4	18	9	18	9	3.62	201	100
4	High cost of hardware and software.	72	35.8	52	25.9	36	17.9	19	9.5	22	10.9	3.66	201	100
5	Computers are very old and slow.	84	41.8	51	25.4	38	18.9	19	9.5	9	4.5	3.91	201	100
6	Shortage of qualified ICT Teachers.	35	17.4	39	19.4	49	24.4	41	20.4	37	18.4	2.97	201	100
7	Lack of government incentives for	105	52.2	48	23.9	25	12.4	10	5	13	6.5	4.10	201	100

	Teachers.													
8	Lack of technical support.	95	47.3	49	24.4	37	18.4	10	5	10	5	4.04	201	100
9	Inadequate training on ICT use.	95	47.3	54	26.9	31	15.4	10	5	11	5.5	4.05	201	100
10	Teacher's negative attitude to ICT use.	39	19.4	31	15.4	53	26.4	25	12.4	53	26.4	2.89	201	100
11	Lack of enough time to use ICT.	41	20.4	36	17.9	39	19.4	42	20.9	43	21.4	2.95	201	100
12	Computer illiteracy among teachers.	53	26.4	52	25.9	47	23.4	23	11.4	26	12.9	3.41	201	100

Table 4.4 above concerns the response of teachers to the challenges that face them during teaching and learning time in their respected schools. Based on the reflections of respondents, the researcher classified the analysis into three categories according to the mean values of the items.

In the case of items 1, 7, and 8, 9, there are 72.7%, 76.1%, 71.7%, and 70.2% of respondent teachers with mean values of 4.03, 4.1, 4.04, and 4.05, respectively which is very good. Hence, the mean value of teachers who agreed and strongly agreed on the inadequate number of computers, the lack of government incentives and technical support, and the teachers' inadequate training in ICT tools to use for the teaching and learning process However, 10.5%, 11.5%, 10%, and 38.8% of teachers disagreed and strongly disagreed with the absence of adequate computers, incentive, technical support, and negative attitude towards ICT tools as a challenge for using them in the classroom. In this case, also, group 2 of ICT teachers raised their feelings as follows.

> *If we consider our ICT lab, there is a shortage of functional computers in our school. In addition, the ratio of ICT classrooms to the number of students is too far from the standard of 65 to 74 students per class. As a result, we teach and show students in shifts, and the 2 periods of the week that are not covered, students are obliged to learn in shifts. (28/8/2014 E.C)*

A study by Liulel Seged (2010) on Achievements, Challenges and Prospects in Implementing Information and Communication Technology Expansion Program: The Case of Selected Preparatory Schools in Addis Ababa findings also show that implementations of ICT in preparatory schools faced challenges such as inadequate supply of ICT equipment like computers, plasma television displays, and their necessary accessories. In addition, scarce skilled personnel and insufficient ICT rooms, electric disconnection, network problems, all with a heavy background of unfriendliness to technology and little involvement of stakeholders, are the challenges of teachers in teaching.

The quantitative data analysis, qualitative data analysis, and the literature show that there are a series of challenges for teachers to use ICT due to a shortage of computers and a lack of technical support as well as an absence of incentives from the government.

Concerning items 2, 3, 4, 5, and 12, there are 64.2%, 54.7%, 61.7%, and 52.2% of respondents, with mean values of 3.84, 3.62, 3.66, 3.91, and 3.41, respectively which is good. Respondents strongly agree and agree with the lack of internet connectivity; fluctuation (interruption) of power supply; high cost of hardware and software; computers being very old and slow; and computer illiteracy among teachers. However, 14%, 18%, 20.4%, 14%, and 24.3 of the teachers strongly agreed or disagreed.

A study by HadiSalehi and ZeinabSalehi (2012) also indicated that although teachers had a strong desire to use ICT in the classroom, they encountered some barriers. Insufficient technical support at schools and little access to the Internet and ICT were considered the major barriers preventing teachers from integrating ICT into the curriculum. Moreover**,** the descriptive analysis of the results showed that the shortage of class time was another significant barrier discouraging teachers from using ICT in the classroom.

Regarding items 6, 10 and 11, with mean values of 2.97, 2.89, and 2.95 respectively, there are 36.8%, 34.8%, and 38.3% of respondents who strongly agreed and agreed on the issue of the shortage of qualified ICT teachers, the negative attitude of teachers to ICT use, and the lack of enough time to use ICT. Whereas 38.8%, 38.3%, and 24.3% of respondents strongly disagreed and disagreed with the issues of the absence of a shortage of qualified ICT teachers, the teacher's negative attitude to ICT use, and the lack of enough time to use ICT were the other challenges of teachers in school, which in turn has its own impact on students' results. However, as the mean

value shows, of the three categories of challenges for teachers in schools, this group issue performed better and needs little support from teachers to handle the problem

4.5 Opportunities of Using ICTs.

Table 4.5 Teachers response related to opportunities of using ICTs.

N0	Items	S.Agree		Agree		M.Agree		Disagree		S.Disagree		Mean	Total	
1	ICT enables virtual communication .	136	67.7	42	20.9	17	8.5	2	1	4	2	4.51	201	100
2	Power of information provides alternative economic activities	141	70.1	44	21.9	11	5.5	3	1.5	2	1	4.59	201	100
3	Increases computer repair business	98	48.8	40	19.9	40	19.9	14	7	9	4.5	4.01	201	100
4	Increases software industry like mobile application	115	57.2	46	22.9	31	15.4	8	4	1	0.5	4.32	201	100
5	provides alternative economic activities	128	63.7	39	19.4	24	11.9	5	2.5	5	2.5	4.39	201	100

Table 4.5 expresses the opportunity that comes from the usage of ICT in schools. For items 1,2,3,4, and 5, 88.6%, 92%, 68.7%, 80.1%, and 83.1 agreed or strongly agreed, with mean values of 4.51, 4.59, 4.01, and 4.39, respectively, of the total respondent teachers in the sampled schools. Three percent, 2.5%, 11.5%, 4.5%, and 5% of the total sample of teachers strongly disagreed and disagreed on the same issues. ICT in schools was identified as a means of virtual communication, power of information, or alternative economic means, like computer repair businesses and software industries like mobile applications. The mean value of all the items was more than four. This indicates that there is a huge opportunity and potential for teachers, the school community, and the surrounding people as a source of business, means of virtual communication, and power of information. According to the responses of sample teachers of four schools, ICT teachers and the school principal who were interviewed supported the opportunity available for teachers using ICT in schools. In this regard, group 1 of the sample school's ICT teacher's focus group suggested their view as follows.

> *Even though there are many problems regarding computer access, ICT lab problems, lab tops, smartphones, there is Wi-Fi, access with Wi-Fi using our own smartphones, laptops, and computers of the administration, we used to send different notes and exams to our students, we send different information to parents, our skills and knowledge had increased, our information access had increased. Group one ICT teachers' (22/8/2014 E.C)*

Mooij and Smeets, (2001) also suggest that not only do ICTs give students, teachers, and communities the power of information, but they also provide alternative economic activities. With ICT, individuals can embark on computer repair businesses, software industries, mobile applications, and many more. Small businesses will also benefit from having access to bigger markets and from using computers to manage businesses better. Local governments will also be able to bring public services closer to people by making use of freely available platforms such as mobile phones.

> *Regarding opportunity besides the group1 suggestion, one of the school principal of the sample school said that, the application of information and communication technology in schools have tremendous opportunities. For example, many students in their schools have got a job opportunity in their destination some by opening*

their own accessory shop and others being employed in some electronic houses(21/8/2014 E.C.).

CHAPTER FIVE

5. Summary, Conclusion and Recommendation

5.1 Summary of the study

The purpose of this study was to investigate the challenges related to using ICT among secondary school teachers in Yeka Sub-city, Addis Ababa. Considering this, the study tried to get an answer to the following three basic questions.

1. To what extent do secondary school teachers in Yeka Sub-city utilize ICT?
2. What are the challenges in using ICT among secondary school teachers in Yeka Sub-city?
3. What opportunities are available for teachers to use ICT in their schools?

To address these basic questions, the quantitative data was collected from the four selected secondary school teachers of Yeka Sub-city through a questionnaire. A quota sampling technique was used to select the determined sample size of the teachers from each departments, which was 197. However, 213 questionnaires were distributed and 201 questionnaires were returned. To substantiate the results obtained from the questionnaire and to get a greater depth of information, a focus group discussion guide for focus group discussion was prepared and conducted in each school with members of 6 to 8 ICT teachers. Moreover, to get deep feelings, perceptions, values or how people interpret the ICT, a structured interview guide had been prepared and an interview was held with the four-school principals, one from each school, which was selected purposively according to their contribution to giving information.

Mixed research approach with a descriptive survey design was employed and both primary and secondary sources of data were collected to reach sound findings.

The qualitative data collected from teachers through questionnaires was analyzed quantitatively using frequency, mean, and percentage methods, whereas the data collected from open-ended questionnaires, focus group discussions, and interviews were analyzed in narrative form. According to the issue raised to teachers to give a response, the results were classified into four categories.

From the given 8 questions, on average 67.9% of the 201 teachers' respondents believed that there was no available computer, LCD projector, videos, printers, laptops, Smartphone's, plasma television, and internet, respectively. Regardless of plasma television and internet access, the availability of others indicates how much the problem is deep-rooted in the schools.

Regarding the use of ICT tools/facilities in the school, from the given 8 questions, on average 83.4% of the requested 201 teachers replied that they did not use computers, LCD projectors, videos, printers, laptops, smartphones, plasma televisions, and the internet, respectively.

Concerning the challenges that teachers face in using ICT tools and facilities, we classified the results of teachers' responses based on the mean value as highly challenging, challenging, and moderately challenging issues. Hence, from the analysis findings, items like inadequate number of computers, the lack of government incentives and technical support, and teachers' training to use ICT tools, with a mean value of each greater than 4.0, and from the given four questions, on average, 72.7% of respondents replied that it is a highly challenging issue for the respected schools.

The second category, which contains items 2, 3, 4, 5, and 12 with a mean value between 3.41 and 3.91 and an average percentage value of 58.2%, was challenged with the lack of internet connectivity; fluctuation (interruption) of power supply; high cost of hardware and software; computers being very old and slow; and computer illiteracy among teachers.

The third category was about items 6, 10, and 11, with mean values of 2.97, 2.89, 2.95 and percentages of 36.8%, 34.8%, and 38.3%, respectively, were about teachers strongly agreed and agreed on the issue of the absence of a shortage of qualified ICT teachers, the negative attitude of teachers to ICT use, and the lack of enough time to use ICT.

The last issue was about the opportunities of using ICT tools in schools. Items 1, 2, 3, and 4,5, replied with a mean value between 4.01 and 4.59 and an average percentage of 82.5%. Those respondents agreed that ICT in schools could be considered as a means of virtual communication, power of information, or alternative economic means, like computer repair businesses and software industries like mobile applications.

5.2 Conclusion

Based on the findings the following conclusions were drawn:

a) According to the literature and experiences, information and communication technology is one of the six educational packages in the Ethiopian education policy launched to provide citizens with better education and behavioral endeavors.

b) Although the history of using information communication technology goes back to the 1950s, formal and well-structured instruction using plasma television started in 1995 E.C for all secondary schools in Ethiopia. However, the functionality of the program has become diminished, and it faced different challenges from time to time. Hence, this study has raised many issues regarding the challenges in using ICT among secondary school teachers.

c) Regarding to major challenges of teachers in using ICT has leveled out according to the data obtained from teachers' responses. The main challenges were an inadequate number of computers in the school, the lack of government incentives and technical support, and teachers' training to use ICT tools; whereas lack of internet connectivity; fluctuation (interruption) of power supply; high cost of hardware and software; computers being very old and slow; and computer illiteracy among teachers were considered secondary challenges. The availability of computers and internet connections these days should be considered a basic need, and in the absence of these tools, the school should consider itself out of existence. The remaining challenges for teachers would be eliminated if the two problems were solved.

d) Generally, the overall practice of using ICT in secondary schools and the improvements gained from schools were not to the expected level. Most of the major aspects of currently practiced ICT technologies were not fully or only partially implemented, compromising the very objectives of ICT education. Thus, without effective use of ICT, the expected improvements in the quality of education and students' academic achievement cannot be enhanced.

5.3 Recommendation

In consideration of the findings and conclusions drawn from the study, the following possible areas of intervention are suggested:

a) ICT education needs to provide an opportunity to promote students' efficiency in schools. It should help learners to deal with suitable instructional practices. In order to achieve this, developing ICT skills of teachers are expected to be resource person to realize the continuous improvement of instruction. Besides, frequent classroom observation is also very essential to bring improvements on the current practice of instruction. However, the finding reveals that the frequency of using ICT was not good. Therefore, supervisors and school administration are recommended initiating, arranging and facilitating conditions for practicing ICT in their school.

b) ICT is a prerequisite to being used in schools as a method of meeting the particular requirements of teachers in order to improve educational outcomes. As a result, instructors should have access to a greater range of ICT equipment. To this end, it is advised that instructional leaders have at least one computer and one printer in each department to allow teachers using ICT in teaching their subjects, as they are the curriculum's implementers.

c) In the case of availability ICT tools, the research finding was lack of adequate computer, printers, LCD projectors, smartphones, internet connection, laptops, videos and laptops. These ICT tools and connections infrastructures are backbones of the implementation of and hence it could be one of the challenges of teachers to use ICI in their respected schools. Hence, the Sub-city education office and the Addis Ababa City Education Bureau, in collaboration with the Ministry of Education and other non-governmental organizations, must provide ICT tools for secondary schools for all teachers on how to identify the strengths and limitations of teachers in using ICT apparatus.

d) The findings of the study revealed that, challenges of teachers in using ICT have level according to the data obtained from teacher’s response. The main challenges were an inadequate number of computers in the school, the lack of government incentives and technical support, teachers' training to use ICT tools whereas lack of internet

connectivity; fluctuation (interruption) of power supply; high cost of hardware and software; computers being very old and slow; and computer illiteracy among teachers were considered as secondary challenge of teachers. Therefore, the researcher suggested that provision of trainings and orientations of internet access in the school need to be arranged at different level.

e) The Education Bureau of the Addis Ababa City Administration shall monitor and analyze whether effective use of ICT by the teachers in schools, as well as give constructive input to sub-city supervisors, facilitators, and school principals.

f) The researcher also suggests that more detailed and comprehensive studies be conducted in this area regarding: practices and challenges of using ICT in secondary schools; principals and teachers' perception of ICT practices; and conducting a similar study on the way contribution of using ICT on students' academic achievement to investigate and further strengthen ICT practices in Addis Ababa City Administration.

g) Finally, the researcher recommends a more detail and comprehensive studies in the same area to investigate and further strengthen on the use of ICT by teachers in practicing teaching learning process in the City Administration of Addis Ababa Education Bureau and higher education level like MoE and Universities.

.

Reference

Adhikari, G. P. (2021, December). Teachers' Perception and Challenges of Using ICT in Teaching Mathematics at Secondary Level. In *Mathematics Education Forum Chitwan* (Vol. 6, No. 6, pp. 50-65).

Assefa, T. (2017). Educational technology implementation in Ethiopian high schools: Benefits and challenges of the instructional plasma TV. In *Handbook on digital learning for K-12 schools* (pp. 413-427). Springer, Cham.

Bhandarkar, P. L. Wilkinson.(1999). Methodology And Techniques Of Social Research.

Clarkson, C., & Toomey, R. (2001). Information and communication technology and whole school reform. *Melbourne: Australian Catholic University*.

Creswell, J. W., & Creswell, J. (2003). *Research design* (pp. 155-179). Thousand Oaks, CA: Sage publications.

Dhital, H. (2018). Opportunities and challenges to use ICT in government school education of Nepal. *International Journal of Innovative Research in Computer and Communication Engineering*, *6*(4), 3215-3220.

Ekberg, S., &Gao, S. (2018). Understanding challenges of using ICT in secondary schools in Sweden from teachers' perspective. *The International Journal of Information and Learning Technology*.

Fekadu, W. (2013). *Teaching-Learning Through Plasma Television and Its Challenges in Selected Secondary Schools of Addis Ababa* (Doctoral dissertation, Addis Ababa University).

Flecknoe, M. (2002). How can ICT help us to improve education?. *Innovations in education and teaching international*, *39*(4), 271-279.

HailyeTekleselassie (2018).Factors affecting the current use of ICT in public and private secondary schools in Gulele Sub-City, Addis Ababa. MA Thesis, Addis Ababa University unpublished.

Hare, H. (2007).ICT in Education in Ethiopia. *World Bank/infoDev. Available at: www. infodev. org/en/Publication, 402*.

Heyi, G. A. Adoption of Information and Communication Technology in Public Administration in Oromia Region: The Case of Bereh and SendafaWoredas.

Hung, D., & Khine, M. S. (Eds.). (2006). *Engaged learning with emerging technologies*. Springer.

Ilhan, O. (2001). The role of education in economic development: a theoretical perspective from https://mpra.ub.uni-muenchen.de/9023/

Johnson, B., & Turner, L. A. (2003). Data collection strategies in mixed methods research. *Handbook of mixed methods in social and behavioral research*, 297-319.

Kalanda, K. (2012). *An investigation of ICT integration in the Lesotho secondary and high school science classroom* (Doctoral dissertation).

Kedir, A. (2006). Contradictions, challenges, and chaos in Ethiopian teacher education. J. Critical Educ. *Policy Stud*, *4*(1), 195-224.

Kothari, C. R. (2004). *Research methodology: Methods and techniques*. New Age International.

Lemlem, T. (2010). Review of some recent literature: Identifying factors that affect Ethiopia's education crisis. *Ethiopian E-Journal for Research and Innovative Foresight*, *2*(2), 56-68.

Leoulseged, H. (2010). *Achievements, Challenges and Prospects in Implementing Information and Communication Technology Expansion Program: The Case of Selected Preparatory Schools in Addis Ababa* (Doctoral dissertation, Addis Ababa University).

LiulelSeged W/Hana (2010) titled "Achievements, Challenges, and Prospects in Implementing Information and Communication Technology Expansion Program: The Case of Selected Preparatory Schools in Addis Ababaunpublished.

Mavellas, S., Wellington, M., & Samuel, F. (2015). Assessment of the availability and utilization of ICTs for teaching and learning in secondary schools-Case of a high

school in Kwekwe, Zimbabwe. *International Journal of Scientific & Technology Research*, *4*(8), 282-288.

Mooij, T., & Smeets, E. (2001). Modelling and supporting ICT implementation in secondary schools. *Computers & Education*, *36*(3), 265-281.

Muslem, A., Yusuf, Y. Q., & Juliana, R. (2018). Perceptions and barriers to ICT use among English teachers in Indonesia. *Teaching English with Technology*, *18*(1), 3-23**.**

Nwakundo, S. A., Oguejiofor, M. A., & Nwankwo, C. (2006). Modern Office Technology and the Secretary's productivity in private business organisations. *African Journal of Business Management*, *3*(3), 333-339.

Olokooba, I. N., Okunloye, R. W., Abdulsalam, A. A., &Balogun, I. N. (2018). Teachers' perceived challenges of using ICT in teaching secondary school social science subjects in Ilorin, Nigeria. *KIU Journal of Humanities*, *2*(2 (B)), 157-166.

Panel, I. L. (2002). Digital transformation: A framework for ICT literacy. *Educational Testing Service*, *1*(2), 1-53.

Rita, K. (2017). Factors influencing succesful implementation of one laptop for child project in public primary schools in Rwanda:A case of gasobodstrict.Eurpean journals of business and social sciences, Vol. 6,No.02,Ma2017.

Ritchie, J., Spencer, L., & O'Connor, W. (2003). Carrying out qualitative analysis. *Qualitative research practice: A guide for social science students and researchers*, *2003*, 219-62.

Salehi, H., &Salehi, Z. (2012). Challenges for using ICT in education: teachers' insights. *International Journal of e-Education, e-Business, e-Management and e-Learning*, *2*(1), 40.

Sedoyeka, E., &Gafufen, G. (2013).Computers in Tanzania Secondary Schools-Challenges and Opportunities. *International Journal of Computing & ICT Research*, *7*(1).

Sibanda Mavellas, Mapenduka Wellington, Furusa SamuelAssessment Of The Availability And Utilization Of Icts For Teaching And Learning In Secondary Schools - Case Of A High School In Kwekwe

Tambari, Y. M., Easy, S. L., &Paulinus, A. P. (2016). Flare gas gathering and utilization: a strategic approach to greenhouse gas emission reduction in Nigeria. *International Journal of Environmental Protection and Policy*, *4*(1), 10.

Tella, A., Tella, A., Toyobo, O. M., Adika, L. O., &Adeyinka, A. A. (2007). An Assessment of Secondary School Teachers Uses of ICT's: Implications for Further Development of ICT's Use in Nigerian Secondary Schools. *Turkish Online Journal of Educational Technology-TOJET*, *6*(3), 5-17.

Tirkaso, S. A., &Cerna, P. D. (2016). Factors Affecting the Use of ICT Services in Commercial Bank of Ethiopia: The Case Study of Southern Regional State in HossanaTown Branches. *Archives of Current Research International*, *5*(2), 1-8.

United Nations Educational, Scientific and Cultural Organization (UNESCO). (2014). UNESCO roadmap for implementing the global action programme on education for sustainable development.

Unesco. (2009). Guide to measuring information and communication technologies (ICT) in education. http://unesdoc.unesco.org/images/0018/001865/186547e.pdf

Unwin, P. T. H., & Unwin, T. (Eds.). (2009). *ICT4D: Information and communication technology for development*. Cambridge University Press.

Vrasidas, C., & Glass, G. V. (Eds.). (2005). *Preparing teachers to teach with technology*. IAP.

Zuppo, C., M. (2012). Defining ICT in a boundaryless world: the development of a working hierarchy. *International Journal of Managing Technology (IJMIT)*, vol. 4. No. 3

APPENDICES

Addis Ababa University

College of Education and Behavioral Studies

Department of Educational Planning and Management

Questionnaire to be completed by teachers

Dear Teachers,

The purpose of this questionnaire is to collect data on the challenges in using ICT among secondary school teachers of Yeka Sub-city, Addis Ababa City Administration. The information that you provide is of great importance to the research. The data that you share with the researcher will be kept confidential and will be used only for research purpose.

Thank You in advance for your cooperation!

General Direction

- You do not need to write your name
- When you respond for the questions in the box, use a tick mark (√)
- For open-ended questions, write your responses in the space provided

Section 1: BACKGROUND OF THE RESPONDENTS

1. Sex: Male [ ] Female [ ]
2. Age: 20-30 [ ] 31-40 [ ] 41-50 [ ] Over 51 [ ]
3. Years of service/experience in the schoolLess than 1 year [ ] 2 year [ ] 3 year [ ] 4year [ ] 5year [ ] more than 5 year [ ]
4. Your educational level?

College Diploma [ ] Bachelors' degree [ ] master's degree [ ] PhD [ ]

5. Name of school.....

Section 2: AVAILABILITY OF ICT TOOLS/FACILITIES IN THE SCHOOL

6. How do you explain the availability of ICTs tools/facilities in your school?

Adequate (3), Moderate (2), Inadequate (1)

No	ICT tools/facilities	3	2	1
1	Computer			
2	LCD Projector			
3	Video			
4	Printer			
5	Laptop			
6	Smart mobile phone			
7	Plasma TV			
8	Internet			

Section 3: USE OF ICTs.

7. How often do you use any of the following ICT tools/facilities in your class?
   Always (4) Sometimes (3) Rarely (2) Never (1)

No	ICT tools/ facilities	4	3	2	1
1	Computer				
2	LCD Projector				
3	Video				
4	Printer				
5	Laptop				
6	Smart mobile phone				
7	Plasma TV				
8	Internet				

8. What other ICT tools/ facilities you use in the school? mention it.----------
   ----

Section 4: CHALLENGES FACED IN THE USE OF ICT

9. Indicate the extent to which the following challenges hinder teachers in the use of ICT in teaching and Learning.

Strongly agree (5) agree (4) moderately agree (3)disagree (2) strongly disagree (1)

No	Challenges	5	4	3	2	1
1	Inadequate number of Computers.					
2	Lack of internet connectivity.					
3	Fluctuation (interruption) of power supply.					
4	High cost of hardware and software.					
5	Computers are very old and slow.					
6	Shortage of qualified ICT Teachers.					
7	Lack of government incentives for Teachers.					
8	Lack of technical support.					
9	Inadequate training on ICT use.					
10	Teacher's negative attitude to ICT use.					
11	Lack of enough time to use ICT.					
12	Computer illiteracy among teachers.					

10. What other challenges you face to use ICT? ----------

Section 5: OPPORTUNITIES OF USING ICTs.

11. Indicate the extent of opportunities of use of ICTs for teaching and learning

5=strongly agree 4=agree 3=moderately agree 2=disagree 1=strongly disagree

No	Opportunities	5	4	3	2	1
1	ICT enables virtual communication.					
2	Power of information provides alternative economic activities					
3	Increases computer repair business					
4	Increases software industry like mobile application					
5	provides alternative economic activities					

12. What other opportunities do you think use of ICTs in school brings?----------

---

Addis Ababa University

College of Education and Behavioral Studies

Department of Educational Planning and Management

Interview guide for principals of public secondary schools.

Dear principals,

The purpose of this interview is to collect data on the challenges in using ICT among secondary schools teachers of Yeka Sub-city, Addis Ababa City Administration. The information that you provide has great importance to the research. Your responses will be kept confidential and will be used only for research purpose.

1. Can you tell me about how it is important to use ICT in education?----------
2. Could you tell me major achievements that have been attained so far in using ICT? -------
3. What major challenges do you face while implementing ICT such as plasma television, computer and internet services in your school?----------
4. How do you evaluate the contribution of ICT to students' learning as compared to the past? ----------
5. How do you evaluate the opportunities that exist in relation to ICT use and the availability of ICT infrastructure and government support/ initiative?----------

Addis Ababa University

College of Education and Behavioral Studies

Department of Educational Planning and Management

FGD guide for ICT Teachers of public secondary schools.

Dear ICT Teachers,

The purpose of this study is to collect data on the challenges of using ICT among secondary schools teachers of Yeka Sub-city, Addis Ababa City Administration.. The information that you share with the researcher will be kept confidential and will be used for the research purpose only.

1. How do explain Teacher's motivation & commitment to use ICT?----------
   ---

   ---
2. How do you explain the commitment of the management to fulfill ICT facilities and in encouraging teachers to use the facilities?----------
   ---

   ---
3. 3. What are the challenges related to the use of ICT among teachers in your school?-------
   ---

   ---
4. What opportunities are available in relation to the use of ICT in schools?----------
   ---

