

**FACTORS AFFECTING THE EFFECTIVE UTILIZATION OF
INFORMATION AND COMMUNICATION TECHNOLOGY (ICT); THE
CASE OF HAWASSA CITY ADMINISTRATION SECONDARY SCHOOL,
SIDAMA REGIONAL STATE, ETHIOPIA**

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ABSTRACT

The goal of this study was to look at the elements that influence the efficient use of Information and Communication Technology (ICT) in Hawassa City Administration Secondary School in Sidama Regional State, Ethiopia. Furthermore, the study looked at the opportunities that instructors have while using ICT. We used a descriptive survey design with a mixed techniques approach. Four public secondary schools were purposefully chosen for their proximity to each corner of the city administration. To choose 205 sample instructors for the questionnaire, a systematic random sampling approach was used. For the selection of ICT teachers and for the interviews, a random sample approach was adopted. The questionnaire data was examined using percentage and mean as statistical approaches. Thematic narrative analysis was used to examine the interviews. The findings revealed that PCs, LCD projectors, movies, printers, laptops, cellphones, plasma televisions, and the Internet were insufficiently available and used. The issues of secondary school instructors of study region were challenged by a lack of Internet access, fluctuating power supply, and computer illiteracy among teachers. Based on this, it was advised that the Hawassa city administration, in partnership with stakeholders, work hard to overcome the issues of the schools in order to properly execute the ICT programme and improve educational quality.

Key Words: ICT, Factors, Perception, Secondary school

1.1. Background of the Study

Education is a critical component of growth. Without considerable investments in human capital, no country can achieve long-term economic progress. Education broadens people's perspectives

on themselves and the world. It raises their standard of living and provides several social advantages to both people and society as a whole. Education boosts people's productivity and creativity while simultaneously promoting technology advancement; it also makes a vital contribution to organisational technological performance and technical transformation. It also plays an important role in guaranteeing economic, social, and political advancement, as well as increasing income distribution equity (Ilhan, 2001). Information and communication technologies (ICT) are an important educational technology tool that may bring about significant improvements in the teaching and learning processes. The use of ICT creates strong learning environments and has the potential to revolutionise the learning and teaching processes so that students may approach information in an active, self-directed, and productive manner. Modern ICT is viewed as a key tool for promoting innovative teaching approaches. It aims to help students improve their abilities in teamwork, communication, problem solving, and lifelong learning (Rita, 2017).

ICT (information and communication technologies) are a potent educational technology instrument that promotes significant changes in the teaching and learning processes. The use of ICT creates strong learning environments and has the potential to revolutionise the learning and teaching processes so that students may approach information in an active, self-directed, and productive manner. Modern ICT is viewed as a key tool for promoting innovative teaching approaches. It is used to help students improve their abilities in areas such as cooperation, communication, problem solving, and lifelong learning. Education, according to Hailye (2018), is one of the most essential drivers of progress. Without considerable investments in human capital, no country can achieve long-term economic progress. Education broadens people's perspectives on themselves and the world. It raises their standard of living and provides several social advantages to both people and society as a whole. Education boosts people's productivity and creativity while also promoting technical advancement; it is also a significant contributor to organisational technological capability and technological transformation. The use of ICT creates strong learning environments and has the potential to revolutionise the learning and teaching processes so that students may approach information in an active, self-directed, and productive manner. Modern ICT is viewed as a key tool for promoting innovative teaching approaches. It may be used to help students gain teamwork, communication, problem solving, and lifetime learning abilities. ICT causes dynamic changes in society. They have an impact on many aspects of life. Influences are becoming increasingly visible in classrooms. As ICT provides greater chances for both students and instructors to personalise learning and teaching to individual requirements, society is pressuring schools to respond adequately to this technological innovation (Mikre, 2011).

1.2 Statement of the Problem

A substantial amount of money has been spent on implementing ICT in secondary school. However, the use of ICT in education is limited to a number of problems, including a lack of skilled ICT instructors, a shortage of computers, a lack of ICT infrastructure, a lack of internet connections, a lack of technical assistance, and a lack of school-based projects (Tella, 2007).

According to Girma (2017), a study found that more respondents cannot connect computers to other computers or computers with printers. As the government does not adequately train school administrators and ICT teachers in ICT, they may not have the basic skills to use ICT. According to Belay (2015), the low level of ICT infrastructure hinders the effective use of ICT in the teaching and learning process. ICT services such as e-library, e-book and e-exam are available in secondary schools. However, they did not become widespread. Due to constraints such as constant power outages, high bandwidth costs, staff retention, computer illiteracy among staff and students, insufficient funds, unreliable and inaccessible ICT infrastructure (Tambari, 2016).

Other academics should perform additional study on the role of ICT in education, the constraints and variables influencing the use of ICT in education, and undertake a lot of research in this field to utilise them to fill certain current gaps and for effective application of ICT in education (Sosta, 2015). There have been few studies in other countries such as South Africa, Ghana, Tanzania, and Kenya, but no study on ICT usage variables in high schools in Ethiopia, indicating a knowledge vacuum. As a result, the purpose of this research is to investigate the aspects impacting present ICT usage as well as the factors impeding ICT usage in selected government secondary schools in Hawassa City, Sidama Regional States, Ethiopia.

1.3. Research Questions


1. How do teachers perceive the use of ICT in secondary school in the Hawassa city administration?
2. What are the challenges that affect utilization of ICT among secondary school teachers in the Hawassa city administration?

1.4. Objective of the Study

1.4.1 General objective

The aim of this study was to examine the challenges related to the use of ICT among secondary school teachers in the Hawassa city administration.

1.4.2 Specific Objectives

-  To identify the degree of use of ICT by secondary school teachers in the Hawassa city

administration.

- ✚ To identify the challenges teachers face in using ICT in Hawassa City Administration secondary schools.

1.5. Significance of the Study

The findings of this study will have the following significance:

- ✚ The study would assist school stakeholders in understanding the issues that impede the adoption of ICTs in the teaching and learning process.
- ✚ Teachers, students, and school stakeholders may have a better understanding of how to employ ICTs in the teaching-learning process.
- ✚ The researcher expects that this study will inspire other research in the field of education with the use of ICTs. Furthermore, the study will give information on how well ICT use prepares both instructors and students for the world of ICTs.
- ✚ The study will add to the body of knowledge about the factors that influence ICT usage.

1.6. Delimitation of the Study

Even though an ICT tool has many components, this study focuses only on computer and the Internet. For the purpose of this study the researcher limited the study to only teachers, students, school directors and ICT experts of the selected government secondary schools. Teachers and students are the end users of the ICTs in the teaching-learning process. The study aimed at exploring the factor that affect usage of ICTs and factors that enable/hinder the effective utilization of ICTs by students and teachers in the teaching and learning process. Even though Hawassa city administration has 14 secondary schools, among this four government schools was selected by using purposively sampling techniques because all secondary school in Hawassa city administration was under the same socio and Economic status.

2. REVIEW OF RELATED LITERATURE

This section contains information on problem solving and research questions. ICT begins by explaining the definition of ICT and selecting the most relevant research topics in Ethiopia topics and building an understanding of these concepts. Various previous studies and theories on the factors affecting the use ICT, as well as the steps taken to overcome the processes that affect the use of ICT are described.

Information and Communication Technology (ICT): Information and communication technologies (ICT) offer enormous potential to improve people's lives in general, and especially in poor nations. The use of ICT may help businesses, education and healthcare institutions, and all levels of government throughout the world in their development processes. The phrase "technology" may refer to a wide range of objects, from computers to pencils. If implemented appropriately, ICT may give enormous benefits to both instructors and students in the classroom. (Abrham,2016). ICT is causing active changes in a country's socioeconomic and political activities, influencing all aspects of societal life, with a particularly strong impact on teachers and pupils.

Information and communication technology (ICT) has a direct role in education, and when utilised properly, it may provide various benefits to students in the classroom as well as to education and training processes in general (Madzima et al, 2010). ICT also has the potential to facilitate skill building, sustain lifetime learning, and advance community connections. Planning for the efficient use of ICTs in education needs an awareness of the technologies' capacity to satisfy various educational objectives. The usage of ICT is making a significant effect in student learning and teaching methodologies. Over the last 20 years, Western schools have spent heavily in ICT infrastructure, and students are using computers more often and for a broader range of applications (Volman, 2005). Several studies have found that pupils who utilise ICT facilities learn more than those who do not. The use of information and communication technologies (ICTs) improves all types of information sharing, observation, learning, and decision-making. ICTs increase information access for private and professional decision making, broadening the number of options and possibilities by providing better access to economic, educational, and development-related information. Benefits of ICT for education:

- + ICT can improve access to education: ICT such as distance education systems, e-learning, and personal computer access give education to those in rural places where teacher recruitment is frequently problematic. Furthermore, the internet allows people to access any information in the globe without the need for physical travelling.
- + ICT may increase education quality: ICT can improve education quality by using digital teaching and learning materials, broadcasting competent lecturers, and offering remote learning for instructors.
- + ICT may encourage students: ICT stimulates not only students but also their parents to take their children to school since computers are something new and appealing, and nowadays people know that ICT skills are required for the information era.

Challenges of ICTs: According to Said, there are numerous constraints or pitfalls for Information Communication Technology for Education projects, including poor infrastructure, organisation or community acceptance, information relevance, financial sustainability, a lack of training and skilled personnel, literacy, and gender (Farrell and Isaacs 2007; Törenli 2006). According to Legesse, a variety of obstacles impede the use of information technology in Ethiopian schools. The main issues are a lack of knowledge, proper financing, and professional growth (Yiftusira, 2003). Educational ICT Infrastructure and Equipment: A major criterion for adopting changes to use ICT in education is the physical and technological infrastructure of ICT. Setting up the infrastructure necessitates taking into account the availability of physical infrastructure (e.g., server rooms, computer rooms, cable and network point placement, electricity supply points), ICT hardware and software, and human resources to set up and maintain the infrastructure and support day-to-day operations (Lim, Chai and Churchill, 2010 cited in UNESCO,2012).

Networks, Internet connectivity, computer rooms, open access rooms, staff computers, student computers, and digital media creation capabilities are all important components of school ICT infrastructure and hardware. Schools, given enough ICT infrastructure for both instructors and pupils, require technical assistants and coordinators to manage systems and guarantee that the infrastructure stays compliant with software changes (Lim, 2010). While technical assistants assist in the maintenance of ICT equipment and ensuring that everything functions properly, ICT coordinators assist in keeping up to date with new innovations in the ICT field, deciding the direction of ICT use for their schools, and organising in-school training for teachers (Lai, Trewern and Pratt, 2002 as cited in UNESCO,2012). Such coordinators guide the community of teachers in the integration of ICT-based education by planning, assigning resources and funding, and providing technical and curriculum assistance (Lai, 2012). Teachers' ICT Professional Development: When teaching and learning take place in a school setting using information and communication technology, particularly educational satellite plasma television, one important component is teachers' confidence, skill, and interest in teaching subjects that incorporate information and communication technology. This is achieved by providing ongoing instruction and practice in order to increase students' motivation to learn and work harder (Birhanu, 2012).

Roles of ICT in Education: ICT (information and communication technologies) are now playing an important role in all aspects of human existence. ICT is an effective instrument for increasing educational possibilities. Numerous studies show that kids who utilise ICT have more possibilities to study than those who do not. ICT allows for quick and simple access to broad and up-to-date information and serves as a tool for resolving problems in the teaching and learning process. The effective use of ICT technology in the teaching and learning process contributes to the successful implementation of ICT technology in the education sector.

ICT for Education in Ethiopia: Information and communication technology (ICT) has a direct role in education, and when utilised properly, it may provide various benefits to students in the classroom as well as to education and training processes in general (Madzima et al, 2010). ICT also has the potential to facilitate skill building, sustain lifetime learning, and advance community connections. Planning for the efficient use of ICTs in education needs an awareness of the technologies' capacity to accomplish various educational purposes and, as a result, deciding which of these objectives is pursued. The Ethiopian Government considers education as the cornerstone of social progress and economic prosperity. ICT may improve education by providing access to a variety of knowledge and online courseware. Because the great majority of Ethiopians live in distant locations with a teacher shortage, ICT is critical in addressing access and quality of education. This pillar is closely connected to the fundamental domain of human capital development. There are several applications of ICT in education. ICT helps the teaching-learning process by increasing access to more learning materials, allowing collaboration and group work through networking, and achieving personalised student-centered learning. According to Leach (2005), information and communication technologies (ICTs) have improved teachers' professional knowledge, skills, and capacities by broadening their topic knowledge and enabling more effective planning and preparation for teaching. According to Yusuf (2005), ICT may improve teaching and learning by providing dynamic, interactive, and interesting information, as well as actual opportunity for personalised education.

Benefits of ICT for Education Quality: By utilising ICT to gain basic skills in the teaching and learning process, ICT technology promotes motivation for instructors and students, increases participation, and improves educational quality. Using educational technology to improve education quality and updating instructors and students with ICT skills is a key instrument for ensuring quality education and making the teaching and learning process more successful.

Factors hindering ICT implementation: There are several impediments to the effectiveness of ICT in education. Some of the primary impediments to effective ICT deployment in schools are as follows.

Lack of ICT resource – One of the primary barriers to ICT deployment in education is a lack of suitable supportive resources (Alhawiti, 2013). According to Bingimlas (2009), a major barrier to incorporating technology into education in both rich and poor nations is a lack of resources. According to Bingimlas' findings, computers may not always be available to instructors. One reason for this is because most educational institutions share such resources. This is exacerbated by insufficient software copies, a lack of simultaneous internet connection, the slowness of ICT systems, and the scarcity of instructional software. Essentially, without adequate technology and software, it is difficult to efficiently utilise ICT in education (Bingimlas, 2009). In schools, there is a scarcity of ICT resources. Inadequate computer supply, insufficient plasma TV, spare parts,

and so on are all barriers to ICT deployment. As a result, instructors and students should have sufficient access to ICT resources.

Lack of ICT policy - Another significant impediment to the effective application of educational technology in schools is a lack of educational policy and strategy for ICT adoption (Oyaid, 2009). According to Wozney et al. (2006), a clear policy framework aids in the formation of a school culture that promotes ICT adoption. Balanskat et al. (2006) emphasised the need of education policymakers focusing on policies that encourage educators to utilise educational technologies into their teaching methods. This involves, for example, paying instructors who employ instructional technology.

Lack of management and technical support – Lack of administrative and technical assistance also impedes ICT deployment in schools (Kozma, 2008). According to Ismail (2010)'s research, one of the important tasks for school administration is to be aware of areas that require attention for the productive use of ICT inside institutions. Wong et al. (2008) demonstrated that if the school administration provides teachers with support and encouragement, a proper working environment would be produced to encourage instructors to test the use of ICT in their lessons. Technical issues such as poor internet connectivity, for instance, discourage teachers from using educational technology. This is particularly true for school teachers (Bingimlas, 2009).

Time limitations - Overburdened curriculums can make it difficult for teachers to integrate technology into their educational practises (Bingimlas, 2009). Time constraints and the difficulty of allocating appropriate time for technology-oriented programmes are important barriers to using technological resources in teaching (Jones, 2004; Tearle, 2003).

Lack of teachers training and confidence – It is also critical for educational institutions to offer instructors with additional educational technology training (Hennessy, 2005). The most often stated impediment to successful ICT deployment in teaching and learning is a lack of training. A. Muslem, Y. Q. Yusuf, and R. Juliana (2018). Teachers have a poor understanding of how to employ electronic tools in the classroom. As a result, training provides instructors with the skills and knowledge required to use ICT in the classroom (Hew & Brush, 2007). This also equips teachers with greater confidence in as far as using educational technology is concerned.

3. RESEARCH METHODOLOGY

According to Mugenda (2003), research methodology is a plan of action, design, strategy, or procedure that a researcher selects and employs to get the intended results. It consists of the following components: study design, target population, sampling design and sample size, data gathering methodology, and data processing approach.

3.1. Research Methodology and Design

A descriptive survey design used with a mixed methods approach was utilised in this study to analyse the challenges in using ICT among secondary school students in Hawassa city government. A mixed methods strategy was chosen because it allows for the collection of many types of data from research participants using various tactics (Johnson & Turner, 2003).

3.2. Data Sources

The researcher employed both primary and secondary sources to gather the relevant information. Academic instructors and ICT teachers from the selected secondary schools will be the key data sources. The decision to use these persons as data sources was made with the hope that they would have more knowledge and expertise with the research issue. Furthermore, secondary data sources such as ICT-related papers, check lists of supervision, guidelines accessible in the municipal administration education department and schools, and the broader relevant literature were used.

3.3 Target population

Kothari (2004) defines sample design as "a specific plan for getting a sample from a specified population." The primary populations in this study are teachers and ICT teachers in the Hawassa city government. There are 538 teachers and 27 ICT teachers among the researcher's preliminary data sources. 205 teachers and 11 ICT instructors from public secondary schools in Hawassa city administration were chosen at random as the study's population. Among the 14 public secondary schools, four were carefully chosen based on their location: two secondary schools from Hawassa city administration, Alamura Secondary School and Halade Secondary School, and Tulla Secondary School and Loke Secondary School from the Tulla Sub-City. Random sampling procedures were employed to determine the sample size from the entire population of instructors in the four schools.

Table 3.1 Teachers population, sample size and percentage of sample.

N0	Name of schools	Teachers			ICT Teachers		
		N	S	%	N	S	%
1	Halade Secondary school	131	48	36.6%	6	3	50%
2	Alamura Secondary School	173	63	36.4%	9	4	45%

3	Tulla Secondary School	130	48	36.9%	8	2	25%
4	Loke Secondary School	104	46	40.38%	4	2	50%
Total Population and Sample Respondents		538	205	38.1%	27	11	41%
Sampling Techniques		Randomly sampling			Randomly sampling		

N= Total population S=Sample % S=Percentage of sample

3.4 Data Collection Instruments

The researcher utilised a questionnaire and an interview to obtain data from the sample schools. Random sampling approaches were utilised for both ICT and academic Teachers to reduce bias and provide equal opportunity to all participants.

3.4.1 Questionnaire

Questionnaires are written forms that ask specific questions of all persons in the sample group and allow respondents to respond at their leisure (Gall et al., 2007). The questionnaire is the most common sort of educational instrument. Data from questionnaires can be more simply examined and comprehended than data from verbal replies. After analysing the literature, the researcher employed a questionnaire with closed-ended and open-ended questions from previous similar studies. The questionnaire was designed specifically for academic teachers. After the advisors provided helpful feedback, the questionnaire was delivered for a reliability pilot test at one of the city's non-sample schools. Following the reliability test, the questionnaire was sent to the sample school's teachers. From the 205 questionnaires provided, 205 (100%) were completed and returned by instructors. The questionnaire was divided into two sections; the first asked about teachers' perceptions on the availability of ICT facilities in the school. The second section inquires about the Teacher's response to obstacles encountered when using ICTs.

3.4.2 Interview

According to Wilkinson and Bhandarkar (1999), the interview allows the researcher to obtain detailed replies that a questionnaire could not provide. Its goal is to discover what someone else is thinking. It is also required to obtain inner feelings, emotions, values, or how individuals understand their surroundings and past events. All data collecting tools were created in Amharic before being translated into English for the report. An interview was conducted with 11 secondary school ICT instructors who were chosen at random based on their participation of

providing information. For this goal, a structured interview guide was created. The participants' preferred time and location were honoured, and the interview lasted 30-40 minutes. The interviews were videotaped for further study.

3.5. Methods of data analysis

The practise of carefully applying statistical and logical approaches to describe and demonstrate, compress and recapitulate, and assess data is known as data analysis. The researcher edited and coded the quantitative data before entering it into the statistical programme SPSS version-23 and interpreting it using descriptive statistics such as mean, frequency, and percentage. Finally, the data were checked carefully for missing values and inconsistencies. 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 to internalize the key points of the collected data. The interview data was narrated in relation with questionnaire items analysis method was used to analyze the data.

4. DATA PRESENTATION AND ANALYSIS

This chapter discusses the presentation, analysis, and interpretation of data. Two separate tools were employed to collect data: a questionnaire and an interview. The questionnaire data was quantitatively examined using frequency, percentage, and means. The information acquired from the interviews, on the other hand, were examined and reported thematically in narrative form.

Table 4.1 Background information of respondents

1	Sex	M	F	%
		Male	144	70.2
		Female	61	29.7
		Total	205	100
2	Age	20-30	55	26.8
		31-40	104	50.7
		41-50	32	15.6
		Above 50	14	7

		Total	205	100
3	Work Experience	Below 2 years	14	6.8
		3 years	11	5.4
		4 years	9	4.4
		5 years	10	4.8
		Above 5 years	161	78.5
		Total	205	100
4	Academic status	Bachelor's Degree	124	60.4
		Master's Degree	81	39.5
		Total	205	100

As shown in Table 4.1 above, 70.2% of the respondents were males. Female teachers accounted only 29.7%. This implies that females representation in secondary schools of the City administration is low as the data obtained from document of the Education department and indicated that female teacher in the four schools were 29.7% and hence, a need to work on increasing the participation of female teachers in secondary schools. Concerning their age, 55 (26.8%) of the respondents were found between 20-30. years 104 (50.7%) of the teachers were between the ages of 31 and 40. In addition, 32 (15.6%) 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 city administration 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, 161 (78.5%) respondents have more than 5 years of experience whereas 10 (4.8%), 9 (4.4%) and 11 (5.4%) of the teachers have 3, 4 and 5 years of experience, 14 (6.8%), of the teachers have less than two years of experience. This indicates that majority of the teachers in the hawasa city administration 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 124 (60.4%) had Bachelor Degree whereas 81 (39.5%) 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.

Table 4.2 Perception of teachers towards Availability of ICT Facilities in the School

N0	Items	Adequate		Inadequate		None		Mean	Total	
		F	%	F	%	F	%		F	%
1	Availability of Computer in Schools	17	8.2	77	37.5	111	54.2	1.53	205	100
2	Availability of LCD projectors in Schools	9	4.4	22	10.7	174	84.9	1.17	205	100
3	Availability of Videos in Schools	6	2.9	27	13.1	172	83.9	1.16	205	100
4	Availability of Printers in Schools	18	8.7	68	33.1	119	58.1	1.49	205	100
5	Availability of Laptops in Schools	7	3.4	18	8.7	180	87.8	1.14	205	100
6	Availability of Smart mobile phones in Secondary school	16	7.8	40	19.5	149	72.6	1.33	205	100
7	Availability of Plasma TV in Schools	46	22.4	66	32.1	93	45.4	1.76	205	100
8	Availability of Internet in Schools	23	11.2	81	39.5	101	49.3	1.61	205	100

In table 4.2 above, the respondents asked about their perceptions of the availability of ICT tools. As a result, 111 (54.2%) of respondents claimed that there are never computers in schools, 77(37.5%) said that the availability of computers in their respective schools is inadequate, and 17 (8.2%) said adequate. This research revealed that more than 54.2 percent of the 205 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, 174 (84.9%) of the respondents said there were no LCD projectors available. In addition, 22 (10.7 percent) of respondents claimed there were insufficient LCD projects, while the remaining 9(4.4 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. 172 (83.9%) of respondents said there is no video, 27 (13.1%) said it is inadequate, and 6 (2.9%) said it is acceptable, indicating that the lack of video in the workplace is a significant issue. On the availability of printers in schools, 119(58.1%) of teachers responded to the absence of printers, while 68(33.1%) of teachers responded that there were inadequate printers, and 18 (8.7%) 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, 180(87.8%) respondents stated that no computers were accessible, whereas 18(8.7%) and 7(3.4%) respondents stated that laptop availability was inadequate and adequate, respectively. In terms of smart mobile phone availability in schools, 149(72.6%) respondents claimed there were no smartphones available, while 40(19.5%) and 16 (7.8%), 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, 93 (45.4%) respondents claimed that there are no plasma TVs in schools, 66(32.1%) respondents stated that there are insufficient plasma TVs, and 46(22.4%) respondents stated that there are acceptable plasma TVs. When asked if there was an Internet connection at their school, 101 (49.3%) of them responded no. There is an inadequate Internet connection for 81(39.5%) of respondents, whereas there is an adequate internet connection for 23(11.2%) of respondents. This finding suggests that school Internet connections are weak, which is one of the challenges teachers encounter when using ICT tools. The 2 ICT Teachers picked up,

“Three signals that did not allow teachers to practise ICT- integrated teaching: 1) teachers’ attitude; 2) teacher training; and 3) ICT material shortage. Teachers are not well trained while they are in institutions and universities. University should give training for teachers to use ICT but training on using ICT is not properly done. (28/8/2022 G.C).”

Table 4.3. Teacher’s response related to challenges faced in the use of ICTs.

NO	Items	SA		A		U		D		SD	Mean		Total	
		F	%	F	%	F	%	F	%	F	%	F	%	

1	Inadequate number of Computers.	98	47.8	50	24.3	35	17.1	8	3.9	14	6.8	4.03	205	100
2	Lack of internet connectivity.	83	40.4	49	23.9	45	21.9	15	7.3	13	6.3	3.84	205	100
3	Fluctuation (interruption) of power supply.	71	34.6	42	20.4	56	27.3	18	8.8	18	8.8	3.62	205	100
4	High cost of hardware and software.	74	36.1	53	25.9	37	18.1	19	9.2	22	10.7	3.66	205	100
5	Computers are very old and slow.	86	41.9	52	25.3	39	19.1	19	9.2	9	4.4	3.91	205	100
6	Shortage of qualified ICT Teachers.	37	18.1	40	19.5	50	24.3	41	20	37	18.1	2.97	205	100
7	Lack of government incentives for Teachers.	107	52.2	49	23.9	26	12.6	10	4.9	13	6.4	4.10	205	100
8	Lack of technical support.	97	47.3	50	24.4	38	18.5	10	4.9	10	4.9	4.04	205	100
9	Inadequate training on ICT use.	95	46.3	58	28.3	31	15.1	10	4.9	11	5.4	4.05	205	100
10	Teacher's negative attitude to ICT use.	39	19.1	31	15.1	57	27.8	25	12.1	53	25.9	2.89	205	100
11	Lack of enough time to use ICT.	43	20.9	37	18.1	40	19.5	42	20.5	43	20.9	2.95	205	100
12	Computer illiteracy among teachers.	57	27.8	52	25.4	47	22.9	23	11.2	26	12.7	3.41	205	100

N.B SA= Strongly Agree A= Agree U= Undecided D= Disagree SD= Strongly disagree

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 72.1%, 76.1%, 71.1%, and 74.6% of respondent teachers with mean values of 4.03, 4.10, 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, 10.7%, 11.3%, 9.8%, and 10.3% 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. (28/8/2022 G.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 64.3%, 55%, 62%, 67.2% and 53.2% 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, 13.6%, 17.6%, 19.9%, 13.6%, and 23.9 of the teachers strongly disagreed 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 37.6%, 34.2%, and 39% 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 38.1%, 38%, and 41.4% of respondents strongly disagreed and disagreed with the issues of the absence of a shortage of qualified ICT teachers, 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.

5. FINDING, CONCLUSSION AND RECOMMENDATION

5.1 Findings

The general goal of this research is to investigate the elements that influence ICT use in Hawasa city government; selected secondary schools. According to the conclusions of this study, infrastructure-related constraints, a lack of technical assistance, and insufficient computer supply are key barriers to ICT adoption in Hawasa city administration specified secondary schools. Inadequate infrastructure, power outages, internet outages, insufficient computer supplies for teachers and students in schools, insufficient ICT training and teachers lack the skills and experience working with computer competency, insufficient technical support and infrastructure in schools, and schools do not pay attention to ICT education are some of the challenges that affect the use of ICT in schools. The usage of ICT in schools contributes in the improvement of students' learning skills and is necessary to assist the learning and teaching processes. The use of ICT promotes student motivation, links students to many sources of knowledge, facilitates active and in-class learning settings, and adds to a better teaching and learning process.

5.2 Conclusion

There are varieties of obstacles associated with the usage of ICT in schools in this study area. Inadequate infrastructure, power outages, internet outages, insufficient IT supplies, a lack of technical support, a lack of ICT skills training, a lack of experience working with computer literacy, a lack of ICT preparation and use by teachers and students, and schools that do not prioritise ICT education. Researcher recommends that, teachers and students should use ICT for to improved teaching and learning after addressing these difficulties. ICT adoption in secondary schools benefits both students and teachers by simplifying the teaching and learning process. ICT helps the teaching and learning process at all levels by enhancing student comprehension.

5.3. Recommendation

- ✚ To properly deploy and use ICT in the education sector, all school communities, particularly teachers and students, must increase their knowledge and abilities. Otherwise, it will be impossible for them to take advantage of the benefits that ICT may provide to improve their current performance and their future career. As a result, the Ethiopian government must adopt both short-term and long-term actions. Training and retraining for teachers and staff members who oversee the package's implementation should be provided as a temporary option for improving the requisite fundamental abilities to utilize ICT for both students and instructors.
- ✚ It is recommended that schools have an uninterrupted power supply and an internet connection and that instructors receive sufficient ICT skills training. Improve school computer supplies and make them available to instructors and pupils. In order to provide ICT services, schools must have infrastructures such as regular electricity and generators.
- ✚ In terms of ICT tool availability, the research revealed a shortage of suitable computers, printers, LCD projectors, cellphones, Internet connection, movies, and laptops. These ICT tools and connection infrastructures are the backbones of the implementation, and so using ICT in their respective schools may be one of the problems for instructors. As a result, in partnership with the Ministry of Education and other non-governmental organisations, the city education Department and the Sidama regional state Education Bureau must offer ICT tools for secondary schools.
- ✚ The study's findings revealed that the challenges of teachers in using ICT in the study area were an insufficient number of computers in the school, a lack of government incentives and technical support, teachers' training to use ICT tools, whereas lack of internet connectivity; fluctuation (interruption) of power supply; computers being very old and slow; and computer illiteracy among teachers. As a result, the researcher proposed that multiple levels of Internet access training and orientation be provided in schools.
- ✚ The researcher also suggests that more detailed and comprehensive studies be conducted in this area, including: practises and challenges of using ICT in secondary schools; principals' and teachers' perceptions of ICT practises; and conducting a similar study on the way ICT contributes to students' academic achievement and further to strengthen ICT practises in Hawassa City Administration.

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