

FACTORS INFLUENCING THE IMPLEMENTATION OF INFORMATION
COMMUNICATION TECHNOLOGY CURRICULUM IN BORENA ZONE
PREPARATORY SCHOOLS

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COLLEGE OF EDUCATION AND BEHAVIORAL SCIENCE DEPARTMENT
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CURRICULUM& INSTRUCTION

Declaration

The researcher hereby declares that, this thesis on the Title “Factors Influencing the Implementation of Information Communication Technology in Borena Zone Preparatory Schools” is my original work and that all sources of materials used for my thesis have been fully indicated and acknowledged with complete references.

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Acronyms

ICT	Information Communication Technology
GEQIP	General Education Quality Improvement Package
MoE	Minister of Education
ESDP	Education Sector Development Program
REB	Regional Education Bureaus
SPSS	Statistical Package for Social Science
SP	School Principal
SVP	School Vice Principal

ABSTRACT

The purpose of this study was to investigate the factors influencing the Implementation of Information Communication Technology (ICT) in preparatory schools in Borena Zone. The study was focused on the influencing of school facilities, the contributions of the schools leaders, teachers' related factors, and extent student related factors influence the implementation of ICT curriculum in preparatory school. To conduct the study, descriptive survey method was employed. The sample covered six preparatory schools in Borena zone. Both probability and non-probability sampling were employed. Availability sampling was employed in the selection of ICT teachers and school principal. Stratified Proportional selected students (N=2415) were 312 sample students, 10 ICT teachers and 9 principals' schools, Data was collected by use of In-depth interview with principals, observation and questionnaires were employed to collect data for this study. The data obtained were analyzed using both quantitative and qualitative analysis methods by descriptive statistical approaches whereby the sums, frequencies and percentages were calculated. Results show that there was scarcity of curricula material and instruction material and shortage of time to implement the ICT subject, lack of technical and materials supports, lack of communication and low attention on the part of principal, were observed to be the major factors influencing the implementation of ICT curriculum. Besides the study revealed that curriculum implementation was affected by inadequate or lack of training for teachers. Most of the teachers (had not been in-service training on the ICT curriculum. Inadequate teachers challenged the implementation of ICT curriculum in boena zone preparatory school where majority of the student agree that they had inadequate teachers. The study further revealed that majority of the student (26.7%) were has high and (34.8%) very high interest to learn ICT however, (9.3%) were indicate low because of poor teaching method of ICT teacher. In addition student conditions such as their background, discipline, and attitude negatively influenced curriculum implementation. The study recommended that The Ministry of education and non-governmental organizations (NGOs) under which these schools are registered should provide school facilities. The study also recommended that MoE and regional education Bureau (REB) should provide in-service training for teachers so that they are able to implement the curriculum. The study suggested that a further study should be conducted to establish how other variables not addressed in the study, influence curriculum implementation. Lastly, considering that this study was conducted in rural areas, a similar study should be conducted in urban areas to establish what factors influence curriculum implementation in such areas.

Key words: Borena Zone, Preparatory school, ICT curriculum

CHAPTER ONE

1. Introduction

This chapter deals with the introductory part of the study. It includes background of the study, statement of the problem, basic research questions, Objectives of the study, significance of the study, delimitation of the study, definition of key terms and the organization of the study.

1.1. Background of the study

The world is undergoing a sweeping change as the industrial society of the 20th century rapidly gives way to the information society of the 21st century (Akingsley, 2017). It is these changes that are continuing to undergo considerable changes in industry, occupation, social, economy and technology (Enkosa & Getu, 2017). Currently, many scholars such as Youssef & Dhamani, (2008) and O'Leary, (2003) agree that, the whole world becomes like one big village; under these circumstances for any country, it is very difficult to survive alone.

Among other things technology, especially information and communication technology (ICT) is a powerful change agent and takes big share in connecting the globe altogether (David, 2005; Zoroja & Bach, 2016). According to UNESCO (2002) ICT has become, within a few years, one of the cornerstones of modern society. In addition, the increasing use of information technology in the contemporary society proves that ICT is absolutely necessary for development (Fikre & Belaye, 2002). It has been argued that it is a principal driver of economic development and social change worldwide (Kozma, 2005; Leech, 2008). Moreover, according to Sarkar, (2012) ICT is a force that has changed many aspects of the way we live and plays a very important role in daily life for people in areas such as health, education, public service and business. He further argued it is rapidly transforming the way people do business, access information and services communicate with each other and even entertain themselves.

ICT can and should play a variety of roles inside a school (Pedro, Enrique, Ernesto & Lucio 2004) some of the most important ones are pedagogical, social, professional and administrative as well as, can positively affect many aspects of school life, and provide a remarkable opportunity

for teachers' development. However, education systems around the world are facing mounting pressure to make use of ICT in teaching students the knowledge and skills they need in the 21st century (Omwenga, 2007 as cited in Muriuki 2017).

Information age students require flexible teaching learning approaches accessing and presenting knowledge using a range of higher order thinking that show conceptual understanding, problem solving, personal interaction and the ability reproduce resource Belay(2015) as cited in, Dunmill and Aeslanagic (2006). Furthermore, Syed (2010) stated that, technology and students' development of technology –related skills is very crucial factor in 21st century knowledge-based global economy. Consequently, to use ICT in educational activities, integrating ICT tools into the curriculum and adapting pedagogy according to the social environment are necessary for achieving qualitative improvements in learning (Kremer & Holla, 2008; Sreekumar & Sanchez, 2008). According to Lucio (2004) the integration of ICT in education is moving educational systems in multiple ways. Likewise, ICT use in education influences the private life of all educational actors in the sense that these are engaged in innovative practices, which require new methodologies, techniques and attitudes. The general idea is that integrating ICT in learning and teaching is a very valuable asset in the process of learning, appealing to many aspects of students' learning, and hence, education with the help of ICT is at the confluence of powerful and rapidly shifting technological and political forces that will shape the structure of educational systems across the globe (Akingsley, 2017). According to the research literature Rautopu, Poentinen and Kukkonen (2006) stated that:

There are three separate aspects of information and communication technology (ICT) in school education... : First Using ICT as a tool to support teaching and learning processes, for example using a word processor, spreadsheet or database in other subject areas such as Biology or science,; Second, Learning through ICT where the ICT facility becomes the whole learning environment by providing learning materials, such as Web-based learning and the third Learning ICT as a subject, that is to say learning the knowledge, concepts, skills, and processes of ICT this impression has been resounded by many scholars and studies (p, 155).

Therefore, using ICT in education has multifaceted wins in letting students get deep understanding of the topic they are learning to consider and amalgamating ever changing development in their environment and areas of their study.

Cognizant of this fact, countries have already turned their faces to integrating ICT in their educational settings disregarding their socio-economic background, which is witnessed by the numbers of policy papers and publications emerging as per planning, implementation, and assessment of ICT use in the arena of education. According to Muriuki (2017) stated that globally, most of the countries identified the education sector as a frontline for use of ICTs to widen access to education, improve standard of education delivered. In addition researchers and educationists from all over the world consider ICT as a potential tool in educational change or innovation which made them interested in investing in ICT (Papanastasiou &Angeli, 2008).

Coming to Ethiopia the government has placed importance on ICT for Education (ICT4E) for national development. The Government's current vision for education development is described in the Plan for Accelerated and Sustained Development to End Poverty (PASDEP), with the ESDP IV serving as the overarching framework, giving high priority to quality improvement at all levels Whereas ESDP V places great emphases to provide ICT infrastructure, facilities and resources to support teaching and learning and students' development for work in an increasingly digital environment (MoE, 2015). Within the framework of the ESDP III, the MoE has developed a General Education Quality Improvement Package (GEQIP). The Ethiopian Ministry of Capacity Building stated that the government is committed to address the nation's human resource requirements in the area of ICTs through the promotion of mass ICT literacy and training. This is aimed at increasing the use of ICTs in educational institutions as well as implementing initiatives aimed at connecting schools and higher educational institutions to online resources. The draft policy for ICT in education were approved and implemented through a strategy that will include provision of equipment, for access at the school level. ICT is already considered as one of the six quality improvement packages that the government is embarking on as an instrument for enhancing the quality of general education (MOE, 2010).

With the above national ICT strategy, in Ethiopia, when the Ministry of Education approved the education policy, new programs like ICT started to be implemented for preparatory program in secondary schools at the beginning, the information technology discipline introduced in

2000 after three years it was revised with some changes. Then, in 2004, ICT education is introduced with major changes for the whole secondary education from grades 9-12. The Ethiopian ICT syllabi is geared towards students who are in secondary and preparatory school and is designed to equip them with knowledge of computer skills, the applied use in the world of work, and a background for further training. Moreover, its effective implementation is also evaluated by different researchers such as Abate (2004), Leulseged (2010) and Abebe (2014) and the result shows that ICT curriculum is not implemented as it is intended. Therefore, from this result, there may be some contributing factors that affect its effective implementation and this study was investigated some major factors that influence the implementation of ICT curriculum in Borena Zone preparatory schools particularly.

1.2. Statement of the Problem

Curriculum become meaningful if it's implemented as it is intended. Macaraeg (2011) state that when the planned curriculum is implemented by the classroom teachers in the way it is designed it will achieve the intended purpose. On the other hand if it is not implemented as designed the intended purpose may not be achieved. This implies that there are factors contributing for the low implementation of the curriculum.

In Ethiopia, many researchers conducted research on the implementation of secondary schools ICT curriculum implementation, for instance Abate (2004), Leulseged (2010) and Bekele & Libsie (2014) conducted their research on secondary school ICT curriculum implementation and all founded that the implementation is not as intended or poor. However, they overlooked the investigation major factors that affect the poor implementation of the ICT curriculum. Moreover, most research were conducted in Addis Ababa (Capital city of the country). According to Saadia (2011) point out that city schools are well resourced and as compared to countryside schools in terms of quality of instruction, teachers' training, and schooling conditions. Moreover, to the best knowledge of the researcher there is no study in relation to factors influencing the implementation of ICT curriculum in preparatory school particularly, in Borena Zone? Due to the above reasons, the researcher was initiated to conduct this study on this topic in Borena Zone preparatory schools.

1.3. Research Question

This study was intended on the factor influence the implementation of ICT in borena zone preparatory schools. To this end the following research question were set to guide the study:

1. How do school facilities influencing the implementation of ICT curriculum in preparatory school.
2. To what extent the schools leaders ‘influence implementation of ICT curriculum in Borena Zone preparatory school.
3. To what extent teacher’s related factors influence the implementation of ICT Curriculum?
4. To what extent student related factors influence the implementation of ICT curriculum?

1.4. Objective

1.4.1. General Objective of the Study

The general objective of this study investigate major factors influencing the implementation of ICT curriculum in Borena Zone preparatory schools

1.4.2. Specific Objectives

This study addresses the following objectives:

- ❖ To identify how school facilities influence the implementation of preparatory school ICT curriculum in Borena Zone preparatory school.
- ❖ To find out the extent to which the schools leaders influence implementation of ICT curriculum in Borena Zone preparatory school.
- ❖ To identify the extent to which teachers related factors influences the implementation of ICT curriculum implementation at Borena Zone preparatory schools?
- ❖ To identify the extent to which students related factors influences the implementation of ICT curriculum implementation at Borena Zone preparatory schools?

1.5. Significance of the Study

This study was important at least for the following reasons-:

- ❖ It contribute to the improvement of ICT education at the preparatory school education in general and Borena Zone preparatory schools in particular, It's the only study that has focused on Factor influencing the implementation of ICT curriculum in preparatory schools in Borena zone.
- ❖ It serve as an additional information source for Curriculum experts and implementers about the major factors that hinder the implementation of ICT in Borena Zone preparatory schools.
- ❖ It could assist in the efforts made to strengthen, the quality of ICT education in Borena Zone Preparatory schools in particular.
- ❖ It helps to stimulate prospective researchers to conduct further research on this or related area and to address those areas that remain untouched or inadequately treated and also It was hoped that the result of the study would add literature that would shed more light on the implementation of ICT curriculum in Borena Zone, Ethiopia.

1.6. Scope of the study

In Borena Zone there are thirteen woredas and one town administration. However, the study was delimited at 6Wereda's and one town administration preparatory schools namely; (Yabelo Town, Elwoye, Dilo, Moyale, Dubluk, Gomole and Mega) it was better if other preparatory schools in all wereda were included: however to make the study more manageable and to complete within the available time, the researches it was delimited to the above mentioned wereda Preparatory schools. Conceptually the study was delimited to the major school related (facility, Principals, teacher, and student related factors) influence the implementation of ICT curriculum in Borena zone preparatory schools.

1.7. Limitations of the Study

The study involved questionnaire, interview and observation checklist for gathering vital information from respondents. But, it could have been better to employ additionally test had it been not for the constraint of time and budget. Unwillingness by some respondents to fill the questionnaires, the researcher explained to the respondents about their ethical considerations and

the purpose of the study. Last but not least, time and finance were also factors that limited the study.

1.8. Definition of Important Terms

Curriculum implementation - Actual operation of the curriculum in schools

Factors – Refers to a course determinant that related to principal, teacher, student and School facility school facility, underlies and influence in the implementation of ICT subject/syllabus

Information communication Technology–Refers to the course given as a subject Information communication technology for grade 11 and 12

Influence – This is the power to have an important effect on someone or something.

Preparatory school - Refers to second cycle secondary schools (grade level 11 and12).

School Facilities– This refers to provision which include physical materials or equipment within the environment of the school which help to facilitate effective implementation the curriculum.

1.9. Conceptual Frame Work of the Study

This conceptual framework gives the relationship between the independent and the dependent variables of the study .It helps to conceptualize the problem and provide means to link ideas with data so that deeper connection can be revealed. In doing so, the researcher was used components of independent variable focused on four factors namely: -Principal, Teacher, Student and adequacy facility) as independent variables that determined the success of implementation of ICT in schools. It were hypothesized that optimal existence of each of the four independent variables/factors would have positive influence on implementation of ICT curriculum in preparatory schools in Borena Zone. Figure 1 were shows the conceptual framework of the study which indicates the relationships between the variables (dependent and independent) diagrammatically below:

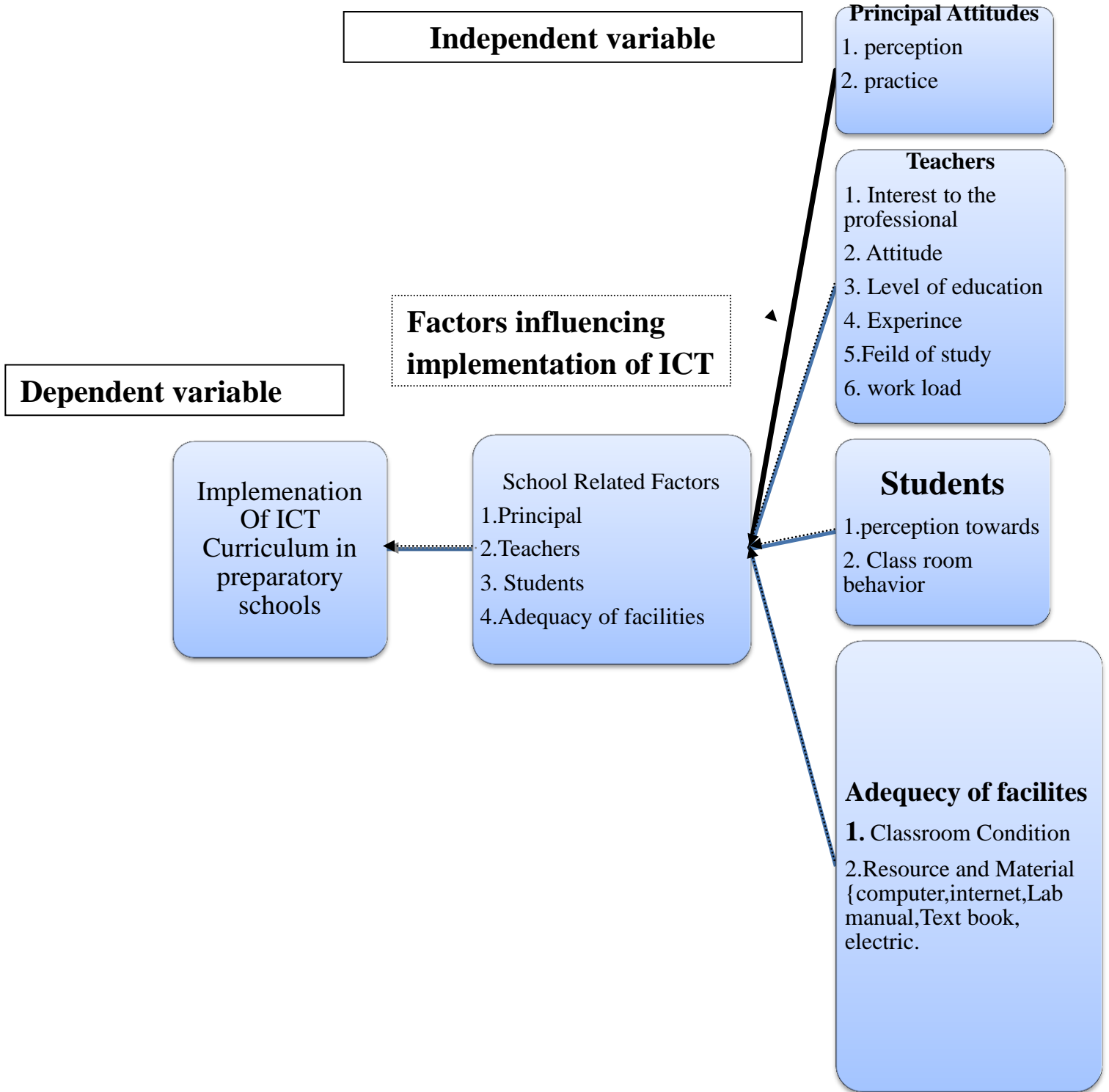


Figure 1: Conceptual Frame Work of the Study

1.10. Organization of the Study

The study is organized into five chapters. Chapter One is the introduction of the study which background of the study, statement of the problem, the research questions, objectives of the study, significance of the study, delimitations of the study, limitation of the study, and theoretical and conceptual frameworks. Chapter Two looks at the review of literature. The third chapter deals with research methodology, including research design, research method, study site and sources of data, the study population, sample size and sampling technique, instruments of data collection, validity and reliability of data collecting instruments, procedures of data collection, method of data analysis and ethical considerations. The fourth chapter deals with data presentation, analysis and interpretation. Finally, chapter five comprises of summary, conclusions and recommendations of the study.

Chapter Two

In this unit, important documents necessary for the study are consulted in order to assess what has been done so far in line with the topic and to substantiate the finding of this study.

2.1. Curriculum Implementation

Curriculum refers to the specific blueprint for learning that is derived from desired results that is content and performance standards be they state-determined (Abebaw 2008). Curriculum is the most central component of the broad package we call “education”. Regardless of its delivery in a formal, non-formal, or informal mode, education always involves a certain conceptualization of valuable knowledge to be imparted, skills to be developed, and values to be inculcated (Meskerem, 2017). An academic plan or a total blueprint for actions where the objectives, aims and outcomes of a program are clarified and the processes required to achieve them are identified the methods required to measure success are selected and systematic review and adjustment mechanisms are incorporated as part of the plan (Chhem,2001) if a curriculum is to be a plan for learning, its contents and learning experience need to be organized so that they serve the educational objectives. So organization in curriculum is an important determinant factor for effectiveness. Implementation must be examined to identify some of the most problematic aspects of bringing about change and it is actual operation of the curriculum in schools

Curriculum implementation is expressed as the effort made to put what has been planned into use or practice and is a function of a number of variables. Some of the variables are the nature of the curriculum itself, the situation of the learner, the professional competency of the instructors, availability of resources, the school environment, the school-community relationships and the leadership and management practices in the school. As Abate (2004) state that Curriculum Implementation is one of the main aspects of curriculum development- the process of which continues even after the plans are tried out. As Chhem(2001) state that a successful curriculum

implementation include the promotion of faculty members' ownership of the process of curriculum implementation and the allocation of adequate resources. Unequivocal support from the highest academic authority must be secured before starting to put a new curriculum into operation.

2.2. Preparatory school Education in Ethiopia

The Ministry of Education indicated that the goals of the second cycle (Grades 11 and 12) of secondary education in Ethiopia are:

- choose subjects or areas of training;
- prepare for higher education;
- Prepare students for the world of work.

The following subjects were offered in Grades 11 and 12 in two streams.

Table 1: Streaming in Second Cycle Secondary Education (Grades 11 and 12)

Stream	Specialized Courses	Courses Common	Electives
1 Natural Science	1. Biology 2. Chemistry 3. Physics 4. Technical Drawing	1. ICT 2. Civics	1. Mother Tongue/ Nationality
2 Social sciences	1. Geography 2. History 3. Economics 4. General Business	3. Physical Education 4. Mathematics 5. English	Language or 2. Amharic

2.3. What is Information communication Technology

Anderson and Glen (2003) define ICT as those technologies that are used for accessing, gathering, manipulating and 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 area network infrastructure, and video-conferencing) According to UNESCO (2002) information and communication technology (ICT) may be regarded as the combination of „Informatics technology“ with other related technology,

specifically communication technology. As Belay(2015), Mentioned that ICT is a tool that any sector can use to deliver its services. The ICT revolution has turned the whole planet into a 'Global Village' where communication among people has become independent of physical distance and time.

ICT in society is emphasized in enabling our future which identifies ICT literate citizens as being central to a country's economic and social goals, to improving productivity and efficiency, and to build innovative capacity and competitiveness (Ken, 2006).

The ability of individuals to use ICT appropriately to access, manage, evaluate information, develop new understandings, and communicate with others is very important in order to participate effectively in society.

These Statements of Learning and the professional elaborations view ICT as an integral tool in the learning process (ken, 2006). ICT has the potential to extend student learning capabilities, engaging them in understanding concepts and processes in areas of learning and facilitating change in learning, thinking and teaching.

New technologies are introduced continually, and the existing ones become obsolete almost as soon as they appear (Belay, 2015). The rapid evolution of the discipline has a profound effect on ICT education, affecting both content and pedagogy. The general aim of ICT education is to introduce the necessary knowledge, skills, and culture to use and work with information and knowledge for citizens living in the knowledge based society.

National Policy for ICT in Education

Information and communication technology is a powerful tool for the development of quality teaching and learning; it is a catalyst for a radical change in the existing school practices and an absolute vehicle for preparing students for the future (Mudasiru, 2005). Success in the implementation of an ICT policy will be dependent on the recognition of the importance of strategic application to education and sustainable implementation (Bekele & Libsie, 2014).

Maximizing ICT potentials will involve quality ICT policy, greater involvement of private and public sectors in the funding of the implementation, and proper implementation and monitoring.

Different countries in the world have national ICT policy. When we see specifically the strategy “Human Resource Development” in ICT policy, the Ethiopian Government is offering ICT education and training in secondary and tertiary educational institutions with the aim of creating ICT literacy and the basis for the proliferation of ICT professionals in the country (Clement, 2006).

When the ICT development sector gets strengthening, the need for ICT professionals will continue to grow side by side. On top of this, in order to make the community benefit from ICT, it will be appropriate to equip it with basic knowledge and awareness of computer and related technology.

Dimension in ICT Learning

According to (Paas 2008), there are three separate aspects of ICT in school education:

- 1, Using ICT as a tool to support teaching and learning processes, for example using a word processor, spreadsheet or database in other subject areas such as mathematics or science;
- 2, Learning through ICT where the ICT facility becomes the whole learning environment by providing learning materials, such as Web-based learning; and
- 3, Learning ICT as a subject, that is to say learning the knowledge, concepts, skills, and processes of ICT. Using ICT as a tool and learning through ICT offer very little opportunity for students to learn the knowledge, concepts, and skills needed to master ICT as a subject. Learning ICT is more than the ability to operate and use a computer system. Hence, the acquisition of technical skills is only part of the problems encountered in teaching and learning ICT as a subject. Indeed, ICT education includes a sophisticated set of higher-order skills and cognitive abilities, such as analyzing, designing, implementing, collecting and retrieving, organizing and managing, interpreting and representing, evaluating and creating information.

2.4. Teaching and Learning Information communication Technology Education in Ethiopia

In Ethiopia, when the Ministry of Education approved the new education policy, new programs like ICT started to be implemented for preparatory program in secondary schools. At the beginning, the information technology discipline introduced application software only. After

three years it was revised with some changes. As Bekele and Libsie (2014) stated that in 2008, ICT education is introduced with major changes for the whole secondary education from grades 9-12.

Information communication Technology is revolutionizing the way in which we live, and work, It is changing all aspects of our life style. ICT in school curriculum is one of the measures taken to minimize the information gap between developed and developing country (Abate, 2004).

ICT education is very essential for economic and social development. Acquisition of computer skills is becoming necessary for employment, educational development, and leisure. Moreover ICT has important role to prepare citizens for the world of work and further studies in higher education. In our education system, ICT has been given to secondary school students as a subject since 1994(Bekele et al, 2014).

This necessitates offering the subjects information technology at the second cycle of secondary school curriculum. The initial objectives of introducing information technology in to the Ethiopian secondary education include (Yiftusira, 2003):

- To help students to develop basic awareness of computer s.
- To cultivate a sense of co- operative and lifelong learning.
- To gain insight in the system tic implementation of Information Technology developments in the Ethiopian school system at a national level.
- To create a forum where those with common concepts is using Information Technology in schools on a national scale can collaborate in developing & implementing new plans of action.

Also as stated by MOE on ICDR (2001) the objective of introducing

Information Technology in the Ethiopian high school curriculum is;

- ❖ To acquaint students with the new technologies
- ❖ To make students capable of applying information technology in their day-to- day lives.
- ❖ To give highlights for those who want to continue their studies in the fields of computer and information science.

Information and Communication Technology (ICT) policy, as cited by (Mudasiru, 2005) can be categorized into vertical, infrastructural, and horizontal policies. Vertical ICT policy addresses sectors needs, such as education, health, and tourism. The infrastructural aspect deals with the development of national infrastructure and this is closely linked with telecommunication. The horizontal aspect deals with the impact on broader aspects of society such as freedom of information, tariff and pricing, privacy and security.

The Ethiopian Government has made the development of Information and communications technology one of its strategic priorities (Clement, 2006) ICT in Ethiopia at present is at the early stage of development. The scope of Ethiopia ICT policy covers knowledge and information as a tool for development & ICT as a sector or industry. ICT promotes democratic governance by enabling all citizens to participate in the political process as well as have access to global knowledge and information. Thus, the goal of the government is to ensure that all citizens have equal and equitable access to government services and to knowledge and information (Abebe,2014)

Hence, the Government has a commitment to accelerate the development of ICT in order to strengthen the on-going process of sustainable development and poverty reduction as well as good governance and democratic system.

Thus, the focus of the policy is on the following areas that are considered strategic for the success of ICT development (Clement, 2006).

- a) ICT infrastructure development
- b) Human resource development
- c) ICT's legal systems and security
- d) ICT for governance /E-Government/; especially:

ICT in the education sector

ICT for improved health

ICT for agricultural modernization

e) ICT industry and private sector development

f) ICT for research and development

When we see specifically the strategy “Human Resource Development”, the Ethiopian

Government is offering ICT education and training in secondary and tertiary educational institutions with the aim of creating ICT literacy and the basis for the proliferation of ICT professionals in the country. When the ICT development sector gets strengthening, the need for ICT professionals will continue to grow side by side. On top of this, in order to make the community benefit from ICT, it will be appropriate to equip it with basic knowledge and awareness of computer and related technology.

Therefore, Ethiopia's ICT policy assigns a strategic role to ICT Human Resources Development along the following objectives and strategies.

1. Goal

Produce knowledgeable and highly skilled ICT human resources at every level for enabling the country to develop and use ICT.

2. Objectives

a) To strengthen the government and private institutions offering ICT education and training.

b) To increase the supply of adequately trained ICT professionals.

c) To develop basic ICT knowledge of the community.

3. Strategies

a) Develop and implement short, medium, and long term ICT human resource development plans

b) Promote ICT skills development at all levels of the school system with the aim of increasing the supply and diversity of ICT skills, to eliminate the current critical shortages of personnel and to satisfy the expected future growth requirements.

- c) Encourage and provide support to private sector operatives, both in educational institutions and industrial establishments, so as to enable them introduce technology innovations and strengthen the delivery of ICT training.
- d) Identify and aggressively develop the country's ICT human resource requirements in key areas of the economy through focused ICT education and training.
- e) Re-orient electronics engineering and other ICT-related courseware to accommodate new development in ICT for greater responsiveness to the needs of the industry.
- f) Create an environment which is conducive to job creation and satisfaction to minimize brain drain.
- g) Facilitate conducive environment for the expansion of computer education and training in the society.

2.5. Evaluation of curriculum implementation

Curriculum implementation evaluation addresses to the question of whether what is planned in the curriculum is put into action or use, or to what extent the intended plan is translated into work as intended (Solomon Areaya , 2001). Certainly, there are many curriculum claims very time in human development that continuous evaluation and refinement of the curriculum and its implementation is demanding task. It refers to the full range of information gathered in the school district to evaluate (make judgments about) student learning and program effectiveness in each content area. The principal reason for curriculum evaluation is to plan improvements to the curriculum. Such improvements might involve changes to the curriculum document and/or the provision of resources or in-service training to teachers.

It is intended that curriculum evaluation be a shared, collaborative effort involving all of the major education partners in the country (Abebaw,2009).In the assessment phase, information were gathered from students, teachers, and administrators. The information obtained from educators was indicating the degree to which the curriculum is being implemented, the strengths and weaknesses of the curriculum, and the problems come across in teaching it. The information from students will indicate how well they are achieving the intended objectives and will provide indications about their attitudes toward the curriculum. Student information will be gathered

through the use of a variety of strategies including paper-and-pencil tests (objective and open-response), performance (hands on) tests, interviews, surveys, and observation (ibid).

Several scholars or evaluated like Patton (1997: 203), Daba (2014) and others have fourth part their conceptions on the contribution of evaluation in the field of education as follows:

- ❖ Helping planning process what to do next, to provide and account of what is happening.
- ❖ Enable to control the quality of education in general and particularly the country identifying and detecting problems during implementation of - syllabus.
- ❖ Enable to identify or predict in process, defected in procedural design or its implementation.
- ❖ Helping decision makers to identify how far the ideal the programs deviates, and supports and organization in achieving its goals.

Therefore, it was seen preferable to reserve the term educational evaluation for application of different techniques to look for effectiveness of programs, curriculum of organizational a riabiles.

2.6. Factors Influencing the Implementation of Information Communication Technology in Preparatory Schools

According to Kundishora (2014) stated that African countries are now aware of the benefits derived through adoption and use of ICTs but there are many serious challenges which must be addressed and chief among them are:

Inadequate communications and power infrastructure , Shortage of ICTs facilities and ICTs skills, Inadequate institutional arrangements , Limited financial resources , Inadequate public private partnership, Limited data management capacity , Inadequate horizontal and vertical communication.(p,6)

School Related Factors

As noted by Solomon (2000) there are a number of factors that related to facilitate or influence realization of the curriculum. The sources of the problems or factors influence the realization of Implementation process is a change process and in this change process there are a number of

interacting factors influence implementation. According Marlow and Minehira (2003) they state that factors related to the teacher's attitude, students, experiences, and professional competence, organization of curriculum materials, Principal attitude towards computer, Availability of resource and school facilities and class size can be cited as the main factors that can influence the implementation of Information communication Technology curriculum. In the following an attempt would be made to mention ideas related to these factors as written by many scholars in the fields

A. Extent to which the principal and vice principal related factor influencing implementation of ICT curriculum in preparatory school

These include access to resources, quality of software and hardware, ease of use, incentives to change, support and collegiality in their school, school policies, commitment to professional learning and background in formal ICT training (Becta 2003). In addition, According to Han (2002) principals who have positive attitudes toward technology are very helpful and supportive in introducing these new technologies into the school. For example, they encourage their colleagues to have ICT training, equip the school with sufficient computers and ensure the staff has access to relevant technology. Hence, if principals understand the value of ICT and its benefits, they are able to implement innovations in school. Furthermore, Han (2002) Stated that changing individuals' behavior is possible once their attitudes have been identified. Azjen & Fishbein, (2005); that Attitude is made up of three components: affect, cognition, and behavior. The affective element refers to the individual's emotional feelings or liking of a person or an object. The cognitive element refers to the person's knowledge about a person or an object. The behavioral element refers to the person's overt behavior towards a person or an object. That "even though we cannot predict the behavior of single individuals, we should be able to predict that people (in general) will change their behavior if we can change their attitudes..." Therefore, attitudes of participants revolved in an educational innovation are important factors in determining to what degree and with what speed change will be affected Fullan, (2002).

A. Teacher Related Factors

Among the various factors that contribute to successful curriculum implementation in any level of education in general and secondary education in particular, variable have been recognized as

important. That is, to say along with other interacting variables, the quality of curriculum implementation is a function of teachers' variables i.e. their interest, experience and attitude. Every classroom teacher should use learning technologies to enhance their student learning in every subject because it can engage the thinking, decision making, problem solving and reasoning behaviors of students (Grabe, 2001). Schools have heavily invested in the purchase of new technological devices in recent years with the feelings that teachers will make use of these technologies in classroom instruction. This implies that how smooth adoption process will be is not only determined by infrastructure and ICT facilities and equipment but also the willingness and readiness of the teacher to use ICT (Jones, 2001). Regarding this, factors like the ICT Knowledge, Personal experience, Age, Gender, work load and Field are the most common factors affecting Implementation of ICT curriculum in preparatory schools.

ICT Teachers Attitude towards the profession

Education researches agree that the teachers' negative attitude toward teaching profession has been one of the variables that factor their effectiveness. According to Daba (2014) Effective teachers' have positive attitudes toward their profession and work with their colleagues in the schools and with parents of the students. Hence, having a negative attitude towards the profession has great impact on teachers' effectiveness.

Therefore, the Ethiopia preparatory School standard allows 40-55 students. This would state in the Ministry of Education School Standard Documents as the maximum limits, with the understanding of that, class room to be conducive, manageable and create interactive situations for the process of teaching and learning (Begna, 2017).

A personal characteristic is one of the important factors that influence the adoption of ICT in education. According to Schiller (2003), these personal characteristics include educational level, age, gender, educational experience, and experience with the computer. The attitudes of teachers towards technology greatly influence their adoption and integration of computers into their teaching. Therefore, an understanding of personal characteristics that influence teachers' adoption and integration of ICT into teaching is relevant. The following are discussed as follows here under:

Among personal characteristics which may affect the successful use of ICT in the teaching learning process, one is age. Various researchers like Attuquayefio & Addo (2016) and Schiller

2003) reported that personal characteristics such as age, gender, etc have an impact on the adoption of ICT in education. In addition, Chege (2014) pointed out that younger teachers are more ready than older teachers to use ICT in teaching.

Many studies reported gender differences and the utilization of ICT in education. According to Chege (2014) (Wozney, Venkatesh & Abrami, 2006), female teachers have low level of computer use because of their limited technology access, skill and interest. In addition, they indicated that male teachers use ICT devices more compared to their female counterparts. Furthermore, Gorder (2008) pointed out that there is significant difference in the use of ICT among gender. Contrary to this, the study carried out by Yukselturk & Bulut (2009) revealed that gender gap has reduced over the past year, as a greater number of females than males have used internet and web 2.0 technologies.

Gorder (2008) reported that teacher experience is significantly correlated with the actual use of technology. Also, Baek, Jong & Kim (2008) claimed that experienced teachers are less ready to integrate ICT into their teaching. (Yuksel Goktas, Soner Yildirim, & Zahide Yildirim, 2009).

To implement the change in schools, time certainly emerges as a critical issue. Teachers want to know when they will learn about the expected changes, when they will have time to practice them prior to full implementation, and how they will fit into the daily routine. For many teachers, time—especially instructional time—is seen as their most precious resource. This is why the temporal actions, such as changing bell schedules and school calendars, often precede major curriculum changes. Effective principals understand how important the time issues are to teachers and direct their efforts toward ensuring that teachers have sufficient time to learn about, and implement the curriculum change (ibid).

B. Student Related Factors

Students related variables that have influence the pedagogical teaching learning condition in ICT curriculum in students' attitude and behavior in school Daba (2014).

❖ The Student perceptions towards the implementation of ICT curriculum

Over the decade, interest has become an important concept within the field of education (Engstrom, 1994). Furthermore, Aggrawal (1996) stated that students usually develop a lack of interest in particular subjects when ICT teachers are not good enough in teaching or when they are biased on the subject. He also stated that lack of planning and preparation by ICT teachers, ineffectiveness of style of presentation of the lesson, failure to use appropriate teaching aids and failure to involve students in the instructional activities are the cause for the student to dislike a particular subject.

❖ **Student Classroom behavior**

There is an increasing measure of problem in student behavior (Pastlethwaite, 1994); such as absenteeism, disciplinary problems and vandalism.

C. Availability of physical facility in relation to implantation of ICT curriculum in preparatory schools

Access to adequate technology is clearly a prerequisite for successful adoption. Availability of adequate infrastructure to support the development of ICTs in schools is a tremendous challenge that schools in the region currently face. Apart from the high initial costs, as well as the best effort of supporting such infrastructure, the maintenance and upgrade costs, as well as the process of setting up the requisite infrastructure are also roadblocks to the successful usage of ICTs in schools, especially in poor and remote areas (Patti 2008). In any educational system, the level of available resources places a strict limit on the degree to which any new subject can be introduced into the school curriculum, especially where only the most basic facilities have so far been provided. But ICT is of such importance to the future industrial and commercial health of a country that investment in the equipment, teacher education, and support services necessary for the effective delivery of an ICT-based curriculum should rank high in any set of government priorities (UNESCO, 2002, p. 13). According to Hew & Brush, (2007), a lack of ICT resources or equipment comprises of lack of availability of technology and lack of access to technology itself. Even if a guarantee for technology use in schools, level of access to ICT equipment determines level of use of ICT by educators. Insufficient equipment, limited internet access and poor classroom environments pose challenges on the implementation of ICT in the teaching learning processes (Al-Alwani, 2005). Technology equipment and support need to be provided to teachers

and also organized in a way to ensure maximum availability for all users to promote ICT implementation in schools (Al- Alwani, 2005). Furthermore, Buabeng-Andoh (2012) reported that limited access to ICT is among factors that influence teachers' adoption and integration of ICT into teaching.

According to Asodika & Jaja (2012) states that ICT lab aims to provide basic functional computer services for users who may not have access to such technology at home or elsewhere. The ICT lab provides an environment for users to get support and assistance with computer related issues.

A number of researchers (Cook, 1997) claim that shortage of time is the major and crucial barrier to implement ICT into the school and teaching/learning process.

Time is the major factor which is necessary if teachers intend to develop their professional qualification, participating in various courses. Teachers are suggested spending half of the time for contact hours with students and the other half for carrying out professional responsibilities - teaching. Teachers need time to reflect upon what they have learnt and to plan how to apply the newly acquired knowledge in class.

Whereas Hargreaves (1994) asserts that additional time does not guarantee the change of the teaching/learning process. It is how the time is planned and used that is most important. If we are going to compare before and now we can see how the use of computer technology made a difference

As technology changes, faster internet connections are needed to handle those changes and the importance of internet connection as a learning tool is significant and its development in education level in all countries and it has changed the way students are being taught at schools. That is why it is very important for present generation that they provide internet education for their young generations. The internet in education can expand the knowledge of students, teachers and parents internet connection is full of advantages but there are disadvantages too that we need to teach and those need to be analyzed by the government at the state and center level.

In government schools especially in Ethiopia the level of computer and internet infrastructure is very low.

The internet has been crucial in the evaluation of our education system in various ways.

- Teachers can use the internet as a modern tool for education.
- Education department should provide the infrastructure that teachers and student can use to get benefits of technology in education
- Student can search what they want to learn about by the use of search engine.
- Student can use the internet to convert their theoretical knowledge into practical.
- The internet provides the facilities for students to do the experiments research and development.

Provision of in service training

Fisseha (2011) State that ICTs make dynamic changes in society. They influence all aspects of life. The influences are felt more and more at school, because ICTs provide both students and teachers with more opportunities in adapting learning and teaching to individual needs, society is, forces schools aptly respond to this technical innovation.

Lack of electricity

In the past there has been having difficulty providing stable and reliable electricity supply to every corner of the country without success. There have been cases whereby expensive household appliances such as refrigerators, deep freezers and cookers have been damaged by upsurge in electricity supply after a period of power outage. Electronics equipment such as radio, television, video recorder and even computers has been damaged due to irregular power supply. When electricity supply is not stable and constant, it is difficult to keep high-tech equipment such as computers functioning. The high levels of dust during the dry season, sift for equipment and Time limitation of for equipment and like are also make electronic equipment to have short live span. One problem that needs to be solved is electricity many schools cannot reach with it. If is solved ICT implementation is to be easily implemented. Many schools have may be few computers but they do not have electricity. So this makes it practically impossible for them to help implement ICT in their school. Some head teachers have used initiative by buying solar power generators which are doing very fine but this is a sacrifice as schools are not well funded.

CHAPTER THREE

3. Research Methodology

This chapter consists, the methodological aspects of the research that include; research design, research method, study site and population, sample size and sampling techniques, data collecting instruments, data analysis procedure and ethical considerations are treated sequentially.

3.1. Research Design

In order to investigate factors Influence the implementation of ICT Curriculum in Borena Zone preparatory schools the researcher was used descriptive survey design. Morris and Wood (1991) acknowledge the importance of descriptive survey design especially when the gaining broader understanding of the context of the research and processes is being enacted. Moreover, they argue that the design has considerable ability to generate answers to the questions of “why?”, “what?” and “how?” This approach enabled the researcher to identify the prevailing factors influence implementation of ICT in Borena Zone preparatory schools.

3.2. Research Method

In this study both quantitative and qualitative data were used. As described in Creswell (2011), having both quantitative and qualitative forms of data provides a better understanding of a research problem than using either one method separately. Quantitative data was used to gather information on the major factors influencing the implementation of ICT curriculum. Qualitative data was collected to supplement quantitative data so as to obtain clear picture of the problem.

3.3. Study site

This study was generalized to preparatory schools of Borena Zone. Borena (or Borana) is one of the zones of the Oromia Region of Ethiopia. Borena is bordered on the south by Kenya, on the

west by the Southern Nations, Nationalities, and Peoples Region, on the North by Guji and on the east by the Somali Region. Latitude: 5° 00' 0.00" N Longitude: 38° 14' 60.00" E.

3.4. Source of Data

To make the study more effective, both primary and secondary data was used for the study so as to get factual information in terms of figures or just statements of facts Primary data was collected from Students, Teachers, and Principals. The reasons for selecting these as primary sources of data were the assumption that they have a direct relation with and also have rich information. Likewise the secondary data source was used as source of information for the study.

3.5. Population of the study

Burns and Grove (2003) describe population as all the elements that meet the criteria for inclusion in a study. Therefore, the population of this study was obtained from six preparatory schools of students, ICT teachers, school principals and Vice principal in Borena Zone was included by this study. Regarding students respondent (2415) both eleventh and twelve grade students as to teachers' respondent's, all available teachers who have taught ICT in grade 11 and 12 was taken for this study. Moreover, (6) principals and (3) vice principle, forming a total of 2434

3.6. Sample Size and Sampling Technique

According to Fellegi(2003), a sample is subset of a population that is used to represent the entry group as a whole. Therefore the researchers were employed both probability and non-probability sampling. Under Probability sampling such as stratified random sampling was used to obtain sample of student's respondent. The sample of the study constituted those social and natural science grade 11 and 12 students. These were done in order to obtain in-depth and reliable information and data. Non-probability sampling was used to obtain sample of principal and teachers by availability sampling. In Borena zone there is thirteen Woredas and one town administration. In addition, there is only one preparatory school in each woeredas. In order to obtain sample of schools cluster sampling was used on their geographical location these are; Eastern cluster include Mega and Dubluk western cluster Dilo, Northern Cluster, Elwoye Southern cluster Moyale and Central Yabelo town administration and using proportional

allocation method. Since the number of students in six schools was large and difficult to manage after having this, the researcher was determine the sample population students using standardized krejcie and Morgan (1970) formula that determines appropriate sample size for the study. The formula is attached on Appendix (1), the computed number of students 331(13%) of total population 2434. Proporsinally stratified sampling was used to determine the sample of students who were chosen from seven schools. The rest of the samples population was included schools 6 principal and 3 vise principal and 10 ICT teachers was selected using available sampling technique.

Table 2: Summary of Population and sample size of the study

No	Target Group								
	Name of schools	Student Total population	Sample size	Teacher		principal		Vice principal	
				T/p	S/S	T/p	S/S	T/P	S/S
1	Yabelo	1039	135	3	3	1	1	1	1
2	Dubluk	266	34	1	1	1	1	-	-
3	Moyale	604	78	2	2	1	1	-	-
4	Elwoye	116	15	2	2	1	1	1	1
5	Dilo	86	11	1	1	1	1	-	-
6	Mega	304	39	1	1	1	1	1	1
Total	6	2415	312	10	10	6	6	3	3
% of samples	46%	100%	13%	100		100		100	
Sampling Techniques	Cluster sampling	Stratified	Proportional	Availability		Availability		Availability	
In general total population of the = 2434 and the total sample for the study=331									

T/P= total population S/S=Sample Size

3.7. Data collection Instrument

In this study multiple instruments of data collection was used. Multiple instruments were used to enable the researcher to obtain adequate information that helps to achieve the intended objectives of the study. According to Creswell (2003), using more than one data collection techniques has an advantage to combine the strength and the weaknesses of a one source of data. Bearing this idea, the researcher was used both quantitative and qualitative data collection instruments which include three type instruments; questionnaires, interview, and observations.

3.7.1. Questionnaire

In order to gather the appropriate information, the questionnaires were developed based on basic research questions. Questioners are a research instrument that gathers data of a large sample (Kombo& Tromp, 2006). In this study, the researcher used both close and open-ended question for teacher and for student to collect quantitative data. Students Questionnaire was translated in to local language under the guidance of advisors and language expertise so as to make the questionnaire more understandable for the student respondents. More over separate question was used for students and teachers. Both students and teachers questioners proposed based on literature.

3.7.2. Interview

Semi structured Interview questions were prepared for in-depth information and to supplement the qualitative data gained through questionnaire As a result, interview were held with school principal and vice principal of the sample preparatory schools. Interview guide was used for this purpose. The responses was recorded and short note were taken. All the interview guidelines were prepared based on literatures.

3.7.3. Observation

As Creswell (2011) wrote contexts are important for understanding what the participants are saying. Observation gives direct experiences that make it possible to study certain teaching learning facilities in its natural setting. So, in this study observation was carried out on school facilities which influence the implementation of ICT curriculum. The researcher conducted observation of ICT libratory. These activities enabled the researcher to analyze and reach fair

conclusion about the real challenges. To check the reliability of the items researcher was used calculate the inter-rater reliability (Hellgren, 2012) connection and recourses like kits for teaching and troubleshooting in school labs, and the condition of the teachers qualification for ICT in the school. Based on the items, the researcher rated the aforementioned points. Therefore, the study used observation results as one of the main sources of data. The observation carried out without specific observation procedure. The observation areas were: In the classroom, when the normal teaching/learning process was going on. Instructors support during practical application of computer laboratory sessions. From all what have observed those which seem relevant to the study have been recorded for analysis purpose. Later on, related ideas were grouped in the same category for the analysis purpose.

3.8. Validity and reliability of data gathering instruments

Validity refers to the extent to which a research instrument measures what it is designed to measure. To ensure the validity of the instruments, the researcher was perform the following activities: Firstly, the researcher was identified data gathering instruments that more fit to the topic from various literatures which tested previously at various levels and then refined or modified as required before administering the instruments since it is possible to use existing ones Secondly, the researcher was provide it to subject area expertise such as language and ICT teachers at various levels since they are more familiar with the topic under investigation and made them edit any error or ambiguity in the data gathering instruments that may confuse or mislead or give clue (irrelevant direction) to respondents while responding to questionnaires or interviews.

Reliability is the degree to which the measure of a construct is consistent or dependable. These definitions show us that, the term reliability in research means "repeatability" or "consistency". A measure is considered to be reliable if it gives us the same result again and again. Coefficient alpha was used to estimate reliability for the instruments at 0.7 and above to be acceptable as Cronbach's alpha reliability coefficient normally ranging between 0 and 1 (Brewerton & Millward, 2009; Salkind, 2009). Additionally, the pilot test was administered at Yabelo Town preparatory school. The test was .administered to a 20 grade 11 and 20 grade 12 students, 3 ICT teacher, one school principals in yabelo. The respondents had to choose using an ordinal scale 1=strongly disagree, 2=disagree,3 =agree , 4=strongly agree and 1 = Adequate ,2 = Inadequate

,3 = Not available. After various errors and ambiguities was checked, corrected and finally the instruments was used for the final study.

Table 3: Reliability test result

No	Factors that influencing the implementation of ICT curriculum in preparatory schools	No. of Items	Reliability coefficient in Cronbach's Alpha Students
1	School facility	10	0.723
2	School administration related factors	16	0.775
3	Teacher and Student related factors	11	0.799
Average			0.765

3.9. Data gathering procedures

The investigator made a number of gathering procedure during the study. At first the researcher take authorization paper from Jimma University and then went to the seven woredas preparatory schools in Borena zone namely: Yabelo,, Dubluk, Moyale, Elwoye, Dilo and Mega sampled schools were informed about the objectives of the study by the researcher. Once more to gather all the necessary information about the study, the researcher explained the objectives and significance of the study to the respondents. Secondly, the researcher also made sure that as the information they provide only use for the study and it cannot be stored, categorized and reported by using their names and their specific addresses.

3.10. Method of Data Analysis

In order to conduct the analysis of data, descriptive and inferential statistical analysis was used. Among descriptive the data was presented in tables and analyzed using percentage, mean and standard deviation (SD).Besides to this, qualitative data was analyzed by organizing, categorizing and forming them based on their major concept (research question). Finally, the data was analyzed and discussed to reach at certain findings. The key assumption of this approach as described by Creswell (2014) is to have the qualitative data help explain in more detail the initial quantitative results.

3.11. Ethical Consideration for the Research

The investigator was tried to make a number of ethical considerations for the study. First, the researcher explained the objectives and significance of the study to the respondents and encourages them to participate voluntarily. Secondly, the researcher also made sure that as the information they provided only used for the study and it cannot be stored, categorized and reported by using their names and their specific addresses. In doing so, the introductory letter was framed in a manner that ensure them anonymity and confidentiality of the information that they provide.

CHAPTER FOUR

DATA PRESENTATION AND ANALYSIS

This chapter is the presentation, interpretation and discussion of the findings from the data collected from the study respondents as discussed in the preceding chapter. The chapter is divided into: response rate, personal characteristics of the respondents; school facilities influencing the implementation of ICT curriculum, the contributions of the schools leaders influence implementation of ICT curriculum, teachers' related factors influence the implementation of ICT Curriculum and student related factors influence the implementation of ICT curriculum. The direct quoted opinion from principal were coded using SP and SVP for school principal and vice principal.

4.1. Response Rate

The questionnaire return rate was 86%, that is, 287 out of 331 questionnaires that were administered for grade 11 and 12 students and questionnaire return rate for ICT Teacher was 80% that is, 8 out of 10. In addition, a total of 7 in-depth interviews were successfully conducted with school principals out of the targeted sample size of 9 principals, representing a 77.7% response rate for this category of respondents. Overall, these figures represented a 85.7% response rate for the study. To ensure adequate response rate, the researcher approached the respondents in person and requested their participation from respondents in, providing information about the purpose of the study, how the results would be used, and clearly explained to them the terms of anonymity and confidentiality. In addition, the respondents were given sufficient time to provide their responses.

4.2. Respondents' Background Information

Respondents were asked for their Age, Sex, Grade, and Stream, qualification, work experiences and work load. So, the personal characteristic respondents obtained from the questionnaires are summarized in Table 5.

4.3.1. Characteristics of study participants

The distribution of study participants by age, sex, grade, stream, qualification, work experiences and work load of respondents.

Table 4: ICT Teacher and school principal Respondents N=19

No	Item	ICT Teacher		School principal		Vice Principal	
		f	%				
1	Sex						
	Male	7	87	6	100	1	100
	Female	1	12.5	-	-	-	-
	Total	8	100	6	100	1	100
2	Age						
	Below 26						
	26-30	4	50	-	-	-	-
	31-35	3	37.5	2	33.3	1	100
	36-40	1	12.5	3	50	-	-
	Above 41	-	-	1	16.6	-	-
Total	8	100	6	100	1	100	
3	Qualification						
	Certificate	-	-	-	-	-	-
	Diploma	-	-	-	-	-	-
	BSC/BA	8	100	-	-	-	-
	MA/MSc	-	-	6	100	1	100
	PhD	-	-	-	-	-	-
Total	10	100	6	100	1	100	
4	Work experience						
	0-5	2	25	3	50	1	100
	6-10	4	50	2	33.3	-	-
	11-15	1	12.5	1	16.6	-	-
	16-20	-	-	-	-	-	-
	21& Above	1	12.5	-	-	-	-
Total	8	100	6	100	1	100	

As we can see from Table 4 above, 7 (87%) of teacher were male while the remaining 1 (12%) were female. This indicates that almost high number of male ICT teacher have taken part in the study although still the number of females' teachers was less than that of males'. This also shows that great attentions should still be needed to maximize the number of females 'ICT teachers in school.

Moreover, Age of the respondents is one of the most important characteristics in understanding their views about particular problems (Agata, 2014). As we can see the finding from Table 4(a

above The findings indicate that nearly 50% of the teacher respondents were below 26-30 years of age, whereas about (37.5%) of the respondents were 31- 35 years of age. More specifically, a small number of the teachers (12.5%) were 36-40years of age. In addition we can see the finding from Table 4, 33.3% of schools principal were 31-35 age, whereas about a (50%) were 36-40 age and also a small number of principal (16.6%) were above 41 years.

Regarding teacher's qualification, Ayalew (1991) stated that, teaching is not a mere occupation where people can go without the professional of the requisites qualification. It requires expert knowledge, specialized skills, and a feeling of responsibility. Poor performance of students in ICT at Higher institute may results from low qualification of ICT teachers, professional experience, area of specialization and attitude. Accordingly, these issues were investigated in the following section. On the basis of this, qualification level was ones the items of the questionnaires to determine preparation for teaching ICT curriculum. Education is one of the most important characteristics that might affect the way of looking and understanding any particular social phenomena. In a way, the response of an individual is likely to be determined by their educational status. The respondents were therefore asked to indicate their level of education/professional qualification. The percentages their responses were as in the above Table 4 shown that 100% of the teachers have qualification at degree level (BSC or BED). In this respect, all the major of ICT teachers seems have adequate qualification. This seems contrary to the Ethiopia Education Policy: the minimum required qualification to teach at preparatory school level is at least a first degree (MOE, 2001). As consequence, this could be one of the major problems that influence the implementation of Curriculum and student's academic performance. In developing countries, some of the teachers improved their capacity through self learning and teaching experience (Fuller, 1987). He also stated that, teaching proficiency in organizing instruction and motivation students positively related with their teaching experience. It is assumed that a rich background of teaching experience increases teacher's ability to instruct effectively. Thus, in most case it is expected that the higher the learning experience of ICT teachers, the better is their teaching performance. With regard to professional experience in teaching ICT subject in preparatory school, majority of them do have a good deal of teaching experience As indicated by respondents, in Table 4. The findings indicate that of 8 the ICT teachers who participated in the study through the questionnaire, most of them (50%) had taught 6-10 years and (25%) were less than 5years, Only (12.5%) of the respondents had teaching

experience of 11-15 years. In addition the response of school principal and vice principal shown in Table 4 that (50%) were less than 5 year, (33%) were 6-10years. In addition, about (116.6%) of the respondents had at most 11-15 years' teaching and working experience.

Table 5: Student Respondents N=287

No	Item		Respondents			
			grade 11		Grade 12	
			f	%	f	%
1	Age of students	15-19	151	82.9	63	60
		20-24	30	16.4	39	37.1
		25-29	1	0.5	3	2.8
		Above 30	-	-	-	-
		Total	182	99.8	105	99.95
	Sex	Male	100	54.9	54	51.4
		Female	82	45	51	48.5
		Total	182	99.9	105	99.9

Out of the 287 students, the data on the Table 5 provides sufficient information about age, out of the total number of those students, both 82.9% and 16.9% belong to an age group of 15-19 and 20-24. This confirms that almost all of the students were young and helped them to acquaint themselves with the subject called information and communication technology. And their sex also shows that 53.6 of the total student were male and the rest 46.3% student were female. This finding illustrate that almost equal number of both sex were made to participate in the research.

4.3.The Influence of School Facilities the Implementation of ICT Curriculum in Preparatory School

According to Maooil & Smeet (2001) stated that ICT implementation also requires more specific facilities and forms of support that appropriately change educational objectives and contents, as well as materials and infrastructures. Rogan& Grayson, (2003) state that successful implementation is affected by the nature of the particular school's physical and human resources. Access to adequate physical facilities is clearly a pre-requisite for successful implementation of ICTs in schools (Robert, 2012). Implementation of ICT curriculum in a school largely depends on the availability of relevant ICT facility and infrastructure within the school (Agetha, 2014). Accordingly, the first objective of the study was to identify how school facilities influence the implementation of preparatory school ICT curriculum in Borena Zone preparatory school. The school facility considered as in this study included absence or presence of sufficient computer in Laboratory, Internet Connection, Power (generator), and Software, book (text book and Lab manual)This section therefore presents the findings on the influence school facility of under these sub-sections, then presents and analysis of the relationship between availability of the infrastructure and ICT curriculum implementation. To establish the adequacy of resources and materials in school, additionally the observation checklist was used together with an item in the teachers and student 'questionnaire and also school principal interview which sought responses on adequacy of access.

4.3.1. Access to computers and related devices and reference in your school

Access to adequate school facilities is clearly a pre-requisite for successful implementation of ICTs curriculum. Investigation to determine the adequacy of school facilities in relation to implementation of ICT in preparatory schools enlisted the following responses.

Table 6: The opinion of Students Respondents on adequacy of access to implementation of ICT curriculum

Items	Alternative					
	Adequate		Inadequate		Not available	
	f	%	f	%	f	%
Student Text book	187	71.1	63	24.0	13	4.9
Lab manual	86	33.5	99	38.5	72	28.0
Sufficient computer in Laboratory	87	33.9	130	50.6	38	14.8
Computer updated with appropriate Software to teach	56	21.9	129	50.4	70	27.3
Internet Connection	24	9.4	62	24.2	165	64.5
Tool kits for teaching maintenance and troubleshooting	42	16.9	79	27.5	124	49.8
E- learning	42	16.8	118	47.2	87	34.8
Power	100	38.5	111	42.7	49	17.1
Generator for power interruption	88	34.1	94	36.4	76	29.5
LCD projector	83	32.2	68	26.4	107	41.5
printer	37	16.4	92	40.9	96	42.7
Power divider	52	25.5	109	53.4	43	21.1

The result on Table 6 showed that most of the school did not have adequate school facilities, for example only 24(9.4%)had internet connection in school,37(16.9%)were had a printer, 42(16.8)of the respondents indicate adequacy of tool kits for teaching maintenance and troubleshooting and E-learning ,52(25.5%)had power divider, 56(21.9%) had Computer updated with appropriate Software to teach, 83(32.2%)had LCD projector, 86(33.5) had lab manual and 88(34.1)had respondents responded that there is a generator for power interruption,. it implies that the curriculum cannot be implemented in the school since the facilities were missing. The above data is supplemented data interview with school principal and Vice principal and also

observation on the presence of ICT facility in school. The interview data from respondents were indicating that inadequacy of school facility to implement ICT curriculum. For instance one of the school principal (SP1):has to say

The ICT facility is not adequate for ICTs implementations in the schools with almost all of them not match the huge number of students. In addition, schools did not have generator for power interruption, internet and also there is limited number of computer in the laboratory.

Similar another principal to (SP2) said:

I am new principal but in this short period of time I have information on the availability of ICT school facility on the implementation ICT subject such as computer, textbook, power but it is small in number and also most of them are not functioning and similarly our school share one computer laboratory with Shalala jatane Ale high school.

The Vice principal (SVP1) clearly mentioned that the schools are full of problem and were unable to teach the subject effectively at the school he said:

The access of school facility to implement ICT subject in our school (Mega) can serve as a factor in implementing ICT curriculum. Problem is associated with access to ICT infrastructure such as number of computers in a classroom, computer network, internet (access and speed) and shortage of electric supply. In addition we informally know that our school is not as expected, ICT teacher where he currently teaching indicated that their ICT facility is low.

4.4.2. Electric Utility Service for Information communication Technology Equipment

To see the availability of electric utility services for ICT equipment in the study schools participant were required and the result is presented in the Table below.

Table 7: Teacher response on Electric utility service for ICT

Statement	Category	Teacher respondents(10)	
		F	%
Do you school has electric utility service for your Information Technology equipment	Yes	3	37.5
	No	5	62.5
	Total	8	100

From Table 7: it can be figure out that the electric utility services for ICT equipment in the study schools was 37%(3) of the respondents indicated that they were have electric utility for ICTs equipment while 62.5% (5) of the respondents indicating a general lack of electric utility for ICTs equipment. The study findings are supported by Bingimlas &Saleemi (2009) who asserted that many schools are lack electric utility services for ICT equipment in public secondary schools.

4.4.3. School facilities to support the implementation in school

To determine whether the schools facility to support the implementation of ICT curriculum in preparatory school or number of respondents were requested in a questioner and there result revealed the following responses in the table below

Table 8: The school facilities to support the implementation in school

Statement	Category	Teacher Respondents	
		F	%
How do you rate the school facilities to support the implementation in your school	Excellent	1	16.7
	Good	2	33.3
	Average	5	50.0
	poor	-	-
	Total	8	100

From Table 8 it can be figure out that most schools under study have average school facility for ICTs implementation with 55.6 % responses this is in line with Bingimlas &Saleemi (2009) who asserts that most school have, poor electric wiring, old buildings, heating and cooling installation

and poor ventilation and hence negatively impacting in the implementation of ICTs in schools. Most schools are also far from the sources of electricity and nearness to telephone is still miles away and different providers of school facility or ICT infrastructure have provided varied versions which live final users unable to adjust to the rapid changes.

The researcher conducted a observation. This was undertaken with idea of support data collected through interview and questioner to crosscheck the validity of the description provided the respondents. The personal observation was take place in Borena Zone preparatory school ICT lab by visiting different areas that School facility provide in the implementation ICT curriculum.

There are computer lab rooms for student in the Borena Zone preparatory schools it has limited number of computers. The result is presented in table below.

Table 9: Observation on school facility

Variable	NA	VP	P	G	E
	%	%	%	%	%
Sufficient computer in Laboratory	0	33.3	22.2	11.1	0
Computer updated with appropriate Software to teach	0	0	0	55.6	0
Good Internet Connection	66.7	0	0	0	0
Tool kits for teaching maintenance and troubleshooting	55.6	0	11.1	0	0
E- library	55.6	0	0	11.1	0
Generator for power interruption	11.1	0	22.2	33.3	0
Lab manual	66.7	0	0	0	0
White bored	0	0	0	11.1	0

Scale: NA = Not available: VP= Very poor: P = poor: G= Good E = Excellent:

The findings of the study revealed that (66.7%) observation indicates that internet connection and Lab Manual is not available in school and also for the implementation ICT curriculum. In Borena zone preparatory school, internet can offer opportunities to teachers for obtaining learning resources to improve course content for learners but Not available in school. It also observed that 55.6% of the observation showed that Toolkits for teaching maintenance and troubleshooting and also Electronic literary (e-learning) Not Available in school. In addition, to check sufficiency of computer in ICT lab f (11.1 %,) were good and (22.2 %,) poor computer in

ICT lab However,(55.6%) the computer were updated with appropriate software good that computer.

4.4.4. The Views regarding School facility Influence on the implementation of ICT curriculum

To determine the respondents opinion on school facility on the implementation of ICT curriculum, the ICT teacher and students were required to indicate how they agreed or disagreed with the statements on a Likert scale of strongly agree (SA), Agree (A), disagree (D) and strongly disagree (SD). These were scored as M= below 1.49 -strongly disagree, M= 1.5 – 2.49 - disagree, M=2.5 – 3.49 - agree 1 and M= 3.5 – 4 - strongly agree .The total sum of the responses for the Likert questions in one item were counted from SA to SD. These were added up and then divided by 4 which was the number of the options in the Likert. The scores obtained were multiplied by the value in each category and then divided by the total sum. Dividing the sum by 4 revealed the mean. The information given in order to implement ICT curriculum in preparatory the influence of school facility, the result is presented in Table 9(a) and (b) was

Table 10: The opinion of respondents on the influence of school facility the implementation of ICT curriculum (student respondents N=287)

No	Factor	N	Mean	SD
1	Shortage of reference books (lab manual)	262	3.37	0.746
2	Inadequacy of time for practice	254	2.63	1.005
3	Shortage of text book	251	2.35	1.111
4	Poor supply of facilities such as computers	245	2.84	1.118
5	Lack of internet connection	242	2.86	1.063
6	Lack of access furniture (Table and chair)	186	2.80	1.085
7	Large number of students in a class	262	2.85	1.090
8	Inadequacy of periods to cover contents	243	2.62	0.856
9	Difficulty of activities incorporated in text book	238	2.64	1.049
10	Lack software	247	2.64	1.053
11	ICT course is hard to understand	245	2.58	0.983
12	Content of ICT topics are vast to understand	255	2.70	0.996
13	The contents of the text book be finished in the allotted time	243	2.70	0.989
14	Lack of generator	218	2.85	0.916
15	Absence of Lab technician	209	2.81	0.986
16	Inadequacy number of ICT teachers	207	2.53	1.028
17	Farness of school from home town	187	2.33	1.111
18	Lack of electric line in school	216	2.25	1.057
Grand mean		279	2.73	0.4877

Source: grade 11 and 12 student Questioner

As can be from Table 10 for item 3, 17 and 18 confirmed that they disagree on lack of electric line, school farness from hometown and shortage of text book. Apart the rest all items students conferred that they agree all most all items. In addition, grand mean (mean =2.79, SD = 0.4877). These mean scores collectively show student were Agree on Shortage of reference books (lab manual) and inadequacy of time for practice in school which was influence the implementation, Poor supply of facilities such as computers supported by nearly all the literature that has been

reviewed. Nearly all the studies done have indicated that lack of ICT infrastructure including insufficient computers as compared to the demands are barriers to ICT implementation.

Table 11: The opinion of respondents on the influence of school facility the implementation of ICT curriculum (ICT teacher N=8)

No	Factor	N	Mean	SD
1	Inadequate Toolkit	8	3.63	0.518
2	Lack of access furniture(Table and chair)	4	1.25	0.500
3	Shortage of reference books (lab manual)	8	3.25	0.463
4	Inadequacy of time for practice	8	2.13	0.641
5	Shortage of text book	8	1.75	0.463
6	Poor supply of facilities such as computers	8	2.75	0.886
7	Lack of internet connection	8	3.50	0.535
8	Inadequate ICT laboratories	8	3.13	0.641
9	Inadequate Laptop	8	3.50	0.756
Grand Mean		8	2.86	0.279

As can be from Table 11, for item 2, 4, 5, , the mean value of respondents conformed that they Strongly disagree and Disagree on lack of access furniture (table and chair), inadequacy of time for practice and shortage of ICT text book. The overall mean score for ICT teacher on items 1,3,6,7,8 and 9 of Table 11, these mean scores collectively show that student were Agree and strongly agree on shortage of reference books (lab manual), Inadequate Toolkit, Poor supply of facilities such as computers, Lack of internet connection, Inadequate ICT laboratories, and inadequacy of time for practice in school which was influence the implementation.. Nearly all the studies done have indicated that lack of ICT infrastructure including insufficient computers as compared to the demands are barriers to ICT implementation. Studies such as those by Studies such as those by Hennessy, and Wamakote (2010) in Sub-Saharan Africa, came with similar findings. Inadequacy of time for practice and shortage of computers have been indicated as some of the factors that inhibit ICT integration in teaching and learning. In a South African study by Ngonyani, (2015) the issue of poor number of computers and reference book (Lab manual) had been voiced in the teacher open indeed questioner and school wise principal interview in the

current study. In the interviews with school principal, all of them had indicated inadequacy of computer in the school. Generally, the grand mean ($M= 2.86$, $SD=0.279$) these mean scores collectively show that student agree that the above mentioned factors affect the implementation of ICT curriculum.

4.4. The Schools Leaders Related factors Influencing Implementation of ICT Curriculum in Preparatory School

A number of studies (e.g. Mantas 2000; Grainger and Tolhurst (2005) have shown that there are made large of factors which influence suffering under utilization of ICTs in their teaching. In the current study researcher pose a question on the characteristic, attitude and Contributions of the Schools Leaders Influence Implementation of ICT Curriculum and the following were the study findings.

4.5.2. Perception on the implementation ICT curriculum

To see the perception of principal on the implementation ICT participant were asked and the result presented table below

Table 12: Participants' opinion regarding discussion about ICT curriculum implementation

Statement	Category	Teacher respondents (N=8)	
		f	%
How do you often discuss of ICT curriculum implementation with school principal?	Frequently	4	57.1
	Rarely	3	42.9
	Not at all	-	-
Total		8	100.0

As indicated in Table 12, (57.1%) of the ICT teacher in preparatory school Frequently discuss in addition, (42.9%) were rarely discuss with school principal about the implementation of ICT curriculum in preparatory school.

To see ICT teachers opinion in preparatory school regarding school management structure in solving problems arise in the teaching learning process questioner were administered to the participants and the result is presented in table.

Table 13: ICT teacher response on school management structure in solving problems capacity

Statement	Respondents (N=8)		
	category	f	%
How do you rate the capacity of your school management structure in solving problems arise in the teaching learning process?	High	-	-
	Medium	3	60.0
	Low	2	40.0
	Total	5	100.0

Most of the respondents 3(60%) said that the capacity of school management structure in solving problem were medium. In addition more ICT teachers (40%) rated the capacities of school management structure in solving problem were low.

Some of the teacher who teaches in grade 11 and 12 responded open ended question that the school has weak management structure for instance one of the ICT teachers commented:

The other thing what I would like to suggest is there is a high need of ICT management structure in the school. ICT curriculum implementation required a responsible body of ICT management structure in solving problem arise in the implementation. The team of ICT in our school is not strong as much as it is expected. The other point I want to mention is we have to learn from others success in ICT curriculum implementation.

C. The provision of staff development programs in school

The professional Development program (both pre-service and in-service) possible to introduce the content, value and strategies of innovation on the part of implementation based on this fact, the present study intended to assess the provision of in-service training for ICT teachers in the studied school as follow

Table 14: Teacher response on staff development

No	Statement	Category	Student Respondents (N=287)	
			f	%
1	Have you participated in any in-service training programs (seminar, workshop, or another) with regard to ICT curriculum implementation of grade 11 and 12?	A. Yes	3	37.5
		B.No	5	62.5
			Total	8
2	If your answers for number 18(yes) how many times have you participated?	A. one	3	75.0
		B.two	1	25.0
		C.three	-	-
		D.four	-	-
		E.five and above	-	-
Total		4	100	
3	If you have taken any training or orientation, how helpful the training was/is in enabling you teach the ICT subject effectively?	A. Very helpful	5	83.3
		B. Helpful	1	16.7
		C. Somehow helpful	-	-
		D.Not helpful at all	-	-
Total		6	100.0	
4	Do you think that you need more additional in-service training programs to increase your classroom performance?	A. Yes	5	83.3
		B.No	1	16.7
			Total	6

The result in Table 14 reveal that (33.3%) of teacher respondent have participated in service training programs with regard to ICT curriculum implementation of grade11 and 12 and most similarly 33.3% of respondents they did not participated and 22.2% of respondents they participated one and two times in addition respondents confirm that 56.5% the training was/is very helpful in enabling you teach the ICT subject effectively and 11.1% of the respondents training was helpful in enabling you teach the ICT subject effectively Teachers also asked to give their opinion about the need of more addition in-service training programs to increase their performance in the teaching learning process. However, 56.5% respondents indicated that they need more additional but relevant training to improve their performance. According to McNeil (1990) noted that in school situation, professional development of teachers and other staff members has a major purpose of enriching the educational opportunities and consequently students' performance. Moreover, in-service training programs should related the goals of school with individual teacher role in achieving those objectives curriculum materials. Thus, ICT teachers of surveyed school are in problem or facing challenges with regard to relevant professional development programs.

4.5. Teacher Related Factors Influence the Implementation of ICT Curriculum

As it is indicated in the literature part, identifying the teachers' related factor towards the implementation of ICT curriculum was among the basic question of this study. These parts of the study present the teacher related factor that influence the implementation ICT curriculum.

A. Teacher Attitude, qualification, professional experience and teacher area of Specializations

It is important because of the fact that attitude of ICT teachers towards the implementation curriculum will have its own the major that influence the implementation of ICT curriculum as intended in syllabus in the school. It is obvious that the attitude of individuals to a particular subjects or issues emerges from their knowledge of the subject. The teacher related factor with this understanding, this study includes assessment of the students' towards the currently to implement of ICT curriculum in preparatory school.

The data obtained from the study by asking some open ended and closed ended questions in the questionnaire. It presented in table below.

Table 15: Student Responses on the ICT teacher related factor

No	Statement	Criteria	Student Respondents (N=287)	
			F	%
1	How often does your ICT teacher give you group or individual activities in class?	A. Always	14	5.0
		B. Frequently	18	6.4
		C. Sometimes	184	65.5
		D. Rarely	53	18.9
		E. Never	12	4.3
Total			281	100
2	How often does your ICT teacher give you group or individual activities in ICT lab?	A. Always	41	15.5
		B. Frequently	51	19.3
		C. Sometimes	90	34.1
		D. Rarely	63	23.9
		E. Never	19	7.2
Total			264	100
3	If your response for question number 1 and 2 is rarely or never which of the following reason?	A. Shortage of text book	9	7.0
		B. Shortage of computer	54	42.2
		C. the teacher is not interested to give lab activity	45	35.2
		D. Other unspecified	20	15.6
Total			128	100

As can be seen in Table 15, 184(65)% of the student Answer that ICT teacher give them group or individual activities in class some times, 53(18.9%) and 12(4.3%) give them group or individual activities in class rarely and never .in addition 90(34%) ICT teacher give them group or individual activities in ICT lab sometimes 63(23.9%) rarely and 19(7.2%) never ICT teacher give them group or individual activities in ICT lab. Out of student who replayed them rarely or never have given them group or individual activities in class and ICT lab, they indicate the reason as Shortage of computer 54(42.2%) and 45(35.2%) of them were they do not interested to

give lab activity in addition 9(7.0%)of response of respondents confirmed that they never gate for the reason that Shortage of text book.

Table 16: Student Responses on the ICT teacher related factor

No	Item	Criteria	Student Respondents (N=287)	
			f	%
1	How does your teacher know whether or not you understand the lesson or practice his teaching the classroom	A. By asking question one by one	73	28.6
		B. By waiting for “yes” answer	35	13.7
		C. By asking “are there question	67	26.3
		D. By checking the class work	80	31.4
Total			255	100
2	How does your teacher know whether or not you understand the lesson or practice his teaching the in ICT lab	A. by asking question one by one	88	35.3
		B. by waiting for “yes” answer	50	20.1
		C. by asking “are there question	62	24.9
		D. by checking the class work	49	19.7
Total			249	100
3	Do you discuss issues related to the teaching learning process of ICT subjects with your teachers	A. Yes	127	45.8
		B.No	150	54.2
Total			277	100

As can be seen from the Table 16, 80(31.4%)the respondents replay that teacher know whether or not students understand the lesson or practice his teaching the classroom by checking the class work ,73(28.6%) by asking “are there question and 35(13.7%) them by waiting for “yes” answer from student. Similarly 88(35.3%) of student respondents replayed that teacher know whether or not student understand the lesson or practice his teaching the in ICT lab by asking question one by one,62(21.6%) by asking “are there question, 49(17.1%) of the rest respondents

confirmed that teacher check by class work. Most of the respondents result indicate that 127(51.8) were discuss issues related to the teaching learning process of ICT subjects with your teachers and the rest do not agree or discussed about it.

The SVP2said:

I believe ICT teacher have interested to teach the ICT subjects but ICT syllabus is not appropriate for students in the general secondary school because its contents are vast and cannot be finished within allotted time. But the teacher educators have not enough knowledge to include computer accessories into teaching and Computer maintenance.

Table 17: Student Responses on the ICT teacher related factor(c) (N=287)

No	Item	SD		D		A		SA	
		f	%	f	%	f	%	f	%
1	Teachers lack knowledge and skill to teach ICT in your school	50	19.6	110	43.1	62	24.3	33	12.9
2	Teachers lack encourage students to understand the lesson	37	14.7	70	27.8	81	32.1	64	22.3
3	Lack of support from teachers for technical support	37	14.5	85	33.2	67	26.2	67	26.2

Mean= below 1.49 - strongly disagree, Mean= 1.5 – 2.49 - disagree, Mean= 2.5 – 3.49 agree and Mean= 3.5 –4 - strongly agree

As can be Table 17 above most of the student opinion indicate that 110(43.1%) of where Disagree that ICT teacher lack knowledge and skill to teach ICT in their class, 62(24.3%)and 33(12.9%) of them agree and strongly agree. On item 2, less Similarly (14.7%, and 27.8%) indicate that they strongly disagree and disagree lying on teachers lack encourage students to understand the lesson. mostly (32.1 and 22.3% of the respondents responses that they Lack of encourage students to understand the lesson. in addition, 85(33.2%) of them were disagree support from their ICT teachers for technical support. Most similarly 67(26.2%) of them confirm that they agree and strongly agree on it. Generally, the data obtain from the students questionnaire about teacher related factor revealed that ICT teacher have influence in the implementing ICT curriculum in preparatory school. To

support student response one of school principal raised on teacher related factor Lack of support was capacity building seminar or work shop on the subject.

Table 18: Observation in classroom

No	Variable	W	NB	G	VG	E
		%	%	%	%	%
1	Subject matter knowledge	0	0	11.1	22.2	0
2	Lesson Understanding and Presentation to student	0	0	22.2	11.1	0
3	Different method and strategies used to teach	0	0	33.3	0	0
4	Encourage students to understand the lesson	0	11.1	22.2	11.1	0
5	Students interest in ICT course	0	0	11.1	44.4	0
6	Time allowed	11.1	0	11.1	33.3	0

Scale: W=Weak, NB= Not bad, G= Good ,VG = Very Good ,E= Excellent

As can be seen from Table 18, for item 1, the mean value 3. The observation in the class room confirmed that the majority of the ICT teacher subject knowledge were good about the mean score($M=3.33,SD=0.577$)of the lesson observed these indicate that most teacher used good lesson presentation to student and also used different strategies used to teach. Regarding encouraging student to understand the lesson the mean score($M=3.0,SD=0.816$)where teacher have good increment and the mean score for student interest ($M=3.80,SD=0.447$) where indicate that student have a good interest in ICT subject. Generally the mean score last statement ($M=3.20,SD=1.304$)these indicate that there is good assumption time allowed for the class. According to McNeil (1990) noted that in school situation, professional development of teachers and other staff members has a major purpose of enriching the educational opportunities and consequently students' performance. Moreover, in-service training programs should related the goals of school with individual teacher role in achieving those objectives set in curriculum materials. Thus, ICT teachers of surveyed school are in problem or facing challenges with regard to relevant professional development programs.

4.6. Student Related Factor Influencing the Implementation of ICT Curriculum

These parts of the study present the last objective of the study was to determine the extent to student related factors influence the implementation of ICT curriculum. It is believed that ICT curriculum plays a crucial role for the development of science and technology. It has also wide application in real life situations. In addition, it is important to note that curriculum implementation cannot take place without the learner who is the central figure in curriculum implementation (Gathumb, 2013). And ICT curriculum has been given for pupils in some private school and in public school from high school to higher education as basic. The study therefore sought to determine how student related factor influence the implementation of ICT curriculum. The data obtained from the study by asking some open ended and closed ended questions in the questionnaire. It reveals the case as follows. Along with the student attitude toward the subject and students classroom behavior are issues to be discussed .This end the data collected through questions (ICT teachers and students) and interview with school principals has been used and analyzed as follows

Table 19: Students' perception toward learning of ICT subjects as perceived by them

No	Statement	Criteria	Respondents (N=287)	
			F	%
1	How do you rate your interest to learn ICT?	A. Very high	94	34.8
		B. High	72	26.7
		C. Medium	74	27.4
		D. Low	25	9.3
		E. Very low	4	1.5
Total			269	100
2	If your interest to learn ICT? is "low or very low" what do you think is the reasons?	A. syllabus is not design for school	24	38.1
		B. Poor teaching methods of teacher	24	38.1
		C. The subject is difficult	12	19.0
		D. Unspecified	3	4.8
Total			63	100

A can be seen in Table 18, 34.8% of the students answer that they have very high interest to learn ICT curriculum in the school. Among the student who replied "low or very low" interest to learn the ICT curriculum almost similarly 10.8% of them indicate the reason as poor teaching methods of teacher and syllabus is not design for school and 19% of the student indicated the

reason as the ICT subject is difficult respectively but the rest respondents responses unspecified reason . This was confirm by observation that student were student have interest during the lesson. Student in preparatory school believed that learning ICT subject increase their knowledge to the large extent since

Table 20: Students' perception toward learning of ICT subjects as perceived by them

No	Item	Criteria	Respondents (N=287)	
			f	%
1	To what extent learning ICT increases your knowledge and skills in other subject	A. To large extent	158	57.2
		B. To some extent	86	31.2
		C. Not sure	32	11.6
Total			276	100
2	To what extent did the learning of grade 11or 12 ICT lesson motivate your interest in learn ICT?	A. To large extent	169	61.7
		B. To some extent	92	33.6
		C. Not at all	13	4.7
Total			274	100
3	Do you have interest to continue in ICT stream in your future career?	A. Yes	212	76.3
		No	61	21.9
Total			273	100

As can be seen table 19 the result show as 57.2 % and 61.7% were responses that their interest related learning ICT in their school increases their knowledge to and learning of grade 11or 12 ICT lesson motivate their interest in learn ICT large extent. On the other hand, 73.1% of the students reported that they have interest to continue in ICT stream in your future career, 21% of respondents confirm that they not to study ICT stream in their future career.

The comment given by school principal on the student interest on ICT subject SP2

Our student some have high interest and the other don't have also they only are enforced to give much attention to those subjects which appear in national examinations only.

Table 21: Teacher Responses on the student related factor

No	Statement	Alternative					
		YES		No		Not Sure	
		f	%	f	%	f	%
1	Students have poor background knowledge of ICT	6	66.7	1	11.1	1	11.1
2	Students in preparatory school learn ICT without interest	5	55.6	3	33.3	0	0
3	Poor discipline of students	3	33.3	1	11.1	0	0
4	Traveling of long distance for students from home town	1	11.1	2	22.2	1	11.1

Most of the teacher 66.7% said that student have poor background knowledge of ICT but most similarly one tenth of them 11.1% responded that students No and Not sure. For item 2, 55.6% of respondents majority of the ICT teacher respondents agreed on the Students in preparatory school learn ICT with interest but, 33.3% indicated that the teachers also disagreed on the statements. Regarding poor discipline of students Teacher respondents confirm that 33.3% of them disagree and 11.1% respondents agree on the poor discipline of students. On the other hand Traveling of long distance for students from home town (22.2%) reported that student travel long distance and most similarly 11.1% of respondents in response no and not sure.

Table 22: Assessment of class size as responded by ICT teachers

No	Item	Category	Respondents (N=8)	
			f	%
1	What is average class size your preparatory school	Below 55	4	50
		56-65	3	37.5
		66-75	1	12.5
		Above 75	-	-
		Total	8	100

As can be seen on Table 22, were provided sufficient information about average class size out of the total students the majority of the respondent ICT teacher 50% reported that the number the student in class in Below 55 in ICT lab or class and 37.5% reported that the number of student in class has not created a problem for the implementation of ICT syllabus. But, 12.5% of the ICT teachers' respondents affirmed that the number of student per class created a problem on the proper implementation of the subject. ICT teachers' respondents affirmed that the number of student per class created a problem on the proper implementation of the curriculum. A chance give for ICT teacher in the questionnaire to mention some of the problems faced as a result of large class size. Thus, according to their response the most repeatedly emphasized problems are possibility of access to computer in lab and it is hard to control (manage) the classroom.

5. CHAPTER FIVE

SUMMARY AND RECOMMENDATIONS

Introduction

This chapter presents the summary of the study, summary of findings, conclusions and recommendations. The chapter also presents the suggestions for further research.

5.1. Summary

The purpose of this study was intended the factor influence the implementation of ICT curriculum in Borena Zone preparatory school. Four research objectives were formulated to guide the study. The study sought to: identify how school facilities influence the implementation of preparatory school ICT curriculum in Borena Zone preparatory school, to find out the extent to which the contributions of the schools leaders influence implementation of ICT curriculum , identify the extent to which teachers related factors influences the implementation of ICT curriculum in teaching and learning and to identify the extent to which students related factors influences the implementation of ICT curriculum in teaching and learning at Borena Zone preparatory schools.

The study employed descriptive survey. Descriptive survey design especially when the gaining broader understanding of the context of the research and processes is being enacted and its suitability in quantitative and qualitative methods. The study employed both probability and non-probability sampling. Under Probability sampling such as stratified random sampling was used to obtain sample of student's respondent. The sample of the study constituted those social and natural science grade 11 and 12 students. The sample size comprised the entire 9 school principal, 10 teachers and 312 students. Data were collected by use both quantitative and qualitative approach through three data collection methods which included: questionnaire for the ICT teachers and student in preparatory school, observation checklist for physical resources and materials, interview with school principal and vice principal . Data were analyzed by use of

Narration and descriptive statistics. The descriptive statistics were done by use of frequencies, percentage, mean and standard deviation.

The first objective was to determine the influencing school facilities on the implementation of ICT curriculum in preparatory school. The findings indicate that most of the schools did not have facilities for example 112(38.6%) inadequate power and 49(16.9%) indicate power not available, 130(44.8%) indicate inadequate computer in laboratory and 38(13.1%) indicate that not available, 130(44.8) inadequate internet connection, 179(61.7%) internet connection not available, 91(31.4%) inadequate lab manual and 180(62.1%) indicate not available, 116(40%) of them indicate inadequate generator for power interruption and 87(30%) of the respondents confirm not available. 145(50%) indicate inadequate power divider in school. The findings implied that the school implementing the curriculum without the necessary teaching learning resources. In general the school principals were of the opinion that their school did not have the required resources and the facility influence the curriculum implementation.

Research objective two aimed at deterring the principal related factors influencing implementation of ICT curriculum in Borena Zone preparatory school. The findings indicate that school principal perception was good towards the implementation of ICT curriculum. The data show that schools management structures in the selected schools are not conducive for implementation of ICT subjects. For instance, half of the respondent ICT teachers don't believe that the current management structure of their facilities or coordinate the available resource. Similarly, all principals indicated that their schools couldn't be able to create positive relationships with government bodies for successful curriculum implementation in preparatory school.

The third objective was to determine teachers' related factors influence the implementation of ICT Curriculum. The study therefore examined how selected teacher variables such as teacher adequacy, age, sex, teaching experience and attitude of ICT curriculum implementation in preparatory school and students are identified as some of the major factors influencing the ICT curriculum implementation in this study. The study was found that all the schools had inadequate ICT teacher, minimum number of female and high number of male ICT teachers, teachers in different age groups, teachers with different years of teaching experience, and teachers who had

never, once, twice or more than twice participated in any in-service training programs (seminar, workshop, or another) with regard to ICT curriculum implementation of grade 11 and 12, techniques and instructional materials during instruction, and carried out laboratory studies in different periods of time and follow different strategies during these laboratory studies. The data indicate that work experience is identified as another factor influencing the process of curriculum implementation in this study as reported by (Cho, 2001). There are significant differences in the teaching methods and techniques used during instruction and the frequency of carrying out laboratory studies between teachers with different years of teaching experience. But, we found that teachers with 0 to 5 years of teaching experience (20%), 6-10 year (40%) It was also the data found that teachers with 11 to 15 (10%). There was no significant difference in the instructional materials used during instruction and the strategies followed during laboratory studies by teachers in different teaching experience groups. Regarding attitude of ICT teacher influence the implementation of curriculum ICT study found that As Czerniak (2000) report in their studies, whether in the same line of the curriculum intentions or not, teachers attitude determine what and how they teach in the classroom. The findings of this study show that teachers attitude regarding the implementation of ICT curriculum finding also revealed that regarding encouraging students to understand the lesson 81(32.1%) of agree , 64(22.3%) strongly agree and 70(27.8%) disagree on encouraging student to understand the lesson and most similarly of student agree and strongly agree lack of support from teacher support. Most of ICT teacher give some times group or individual activities in ICT class 184(65.5%) and 90(34.1%) in ICT lab. However, majority of them replayed 58(20%)of rarely and never give group or individual activity in class and ICT lab because of shortage of computer54(42.2%), 45(35.2%)by absence of teacher interest to give lab activity. majority of student indicate that their know whether or not understand the lesson or practice his teaching in the ICT 73(28.6%) were in class room and88(35.3%) were in ICT lab confirmed that by asking question one by one .Based on the analyses made ICT teacher has the positive attitude towards of the implementation of ICT curriculum. According to the interview, most of ICT teachers were motivated to teach ICT in the schools, but some students are not interested to learn ICT and lack of supported from the administrations.

Research objective four aimed to determine student related factors influence the implementation of ICT curriculum in their learning process. Finding indicate that information collected showed

that Regarding student and some of the student attitude and class room activity that towards the implementation ICT curriculum, Relatively large number of the students (32.8%) has very high interest to learn the suggested ICT curriculum in the preparatory school because (16.6%) of them indicated the poor teaching methods of ICT teachers. Furthermore, most of the students (54.5%) responded that the learning ICT increased their knowledge and skill in other subject to the great extent, the majority of them (58.3%) reported that teaching learning of grade 11 or 12 ICT lesson motivate interest in learn ICT to large extent and the finding indicate on student relate factor most of the teacher (66.7%) responded that student have poor background knowledge of ICT. concerning interest of student learning ICT in preparatory school (55.6%) ICT teacher indicate that student learning without interest, (33.3%) indicate that student has poor discipline and most of the respondents indicate that (11.1%) agree on traveling long distance for student from home town. Generally, the students have attitude towards the current ICT curriculum

5.2. Conclusion

From the data collected and analyzed by way of factors influencing the implementation of Information Communication Technology curriculum in preparatory school under the study, it can be concluded that:

The safety of the available ICT tools like computers is very low because it is affected by the power interruption.

- ❖ In relation to school facility to implement ICT curriculum highly affecting the implementation of ICT curriculum it was also revealed that the study schools lacked internet ,computer, adequate ICT rooms, they had unsatisfactory requisite infrastructure for ICT implementation in addition, inconsistent electric power supply to the available ICT tools were effecting the implementation of ICT curriculum
- ❖ The Perception of school principal on the implementation of ICT curriculum was positive but there is a weak point in the area of support with the school community and It was also deduced that there was lack of technical support skills to ICTs implementation;
- ❖ The perceptions of ICT teachers towards ICT curriculum it was found that is more of positive but they are poorly motivated to teach the ICT curriculum in preparatory schools as a consequence of low academic background of the students, little attention was given by the principals to ICT instruction, lack of orientation seminars and ICT refresher courses for ICT teacher and the irrelevant of the syllabus to the students ability in the

government schools were the most top factors which negatively influence the implementation of ICT curriculum in preparatory school

- ❖ In general, the respondents agreed that the school and other responsible government or non-governmental bodies who have direct or indirect relationship with ICT curriculum in preparatory school. In addition to that, it is highly recommended by those respondents that the school should maintain and increase number of ICT facility. Creating conducive teaching-learning context for ICT curriculum implementation such as developing good communication channel among schools community (teachers principals and teachers-students)

5.3.Recommendation

In light of the findings of the present study, it seems reasonable to suggest the following ideas for better implementation of Information communication Technology curriculum in the selected schools.

- ❖ This study has highlighted that the height of school facility inadequacies in preparatory school in Borena Zone, which most likely influence Preparatory school in other part of Ethiopia. There is therefore need for all stakeholders to acquire the request school facility in ICT curriculum implementation In view of the many challenges facing the implementation; Moe should provide frequent workshops to student and teachers as technology is always changing.
- ❖ The principals should be encouraged to embrace utilization of ICTs in their teaching and management of their schools, this will include access to ICTs resources, support in their school, school policies, commitment to professional learning and Principals should ensure that provision facilities are given the necessary attention.
- ❖ ICT teachers in the suggested schools have a positive perception towards ICT curriculum but some of them have negative perception towards the implementation of grade 11 and 12 ICT subject; so that this indicates the need foursome improvement of the teacher salary, provision of in service training and need some improvement of curriculum implementation Therefore, curriculum designers at federal level were advised to study the problem deeply

in order to improve the subject. In addition MOE and Regional bureau should recruit more ICT teacher educators in order to control the current shortage in ICT teacher.

- ❖ The students' related factor towards the implementation of ICT in preparatory school is low because they seemed that student have poor background knowledge and the contents of the ICT are difficult to them, they are not interested to learn the given ICT. Hence, in order to develop positive attitudes of students', the contents of should be related to their needs and interest. Therefore, as much as possible the concerned bodies should modify or revise or change the ICT subject according to the needs of the students and the objectives of the preparatory programs and the ICT subject should start at lower levels (to form a backbone) rather than at higher level as it is now, This has been done for other curricula but not for ICT curriculum.
- ❖ Since the study is very limited in its scope to come up with all critical problems being presented in the implementation of curriculum in the zone, interested researchers in the field should conduct the study in order to investigate the problems uncovered in this study.

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APPENDIX A

JIMMA UNIVERSITY

College of Educational and Behavioral Science

Department of Teacher Education and Curriculum Studies

Questionnaires: To be filled by Grade 11 and 12 both natural and social science Student

The purpose of this questionnaire is to gather information regarding factors Influence the Implementation of Information Communication Technology curriculum at your school. Your genuine response for each item in the questioner could be of great help to the intended purpose. Therefore I kindly request your honesty reply. Your response will be kept confidential and the information required for this study will only be used for research purpose.

No need of writing your name. Thank you in advance for your cooperation!

Direction: Please put tick mark (√) on the space provided when written response is required, please make a brief comment

Section I: Background Information

1. Age: 15-19 20-24 25-29 Above 30
2. Sex: Male Female
3. Grade a)11 b) 12
4. Stream A. Social science B. Natural Science
5. Name of the School _____

Section II: Teacher and student Related Factors

1. How often does your ICT teacher give you group or individual activities in class?
A. Always B. Frequently C. Sometimes D. Rarely E. Never
2. How often does your ICT teacher give you group or individual activities in ICT lab?
A. Always B. Frequently C. Sometimes D. Rarely E. Never

3. If your response for question number 1 and 2 is rarely or Never which of the following reason?

A. Shortage of text book. The teacher is not interested to give lab activity

B. Shortage of computer D. If any other reason, please specify _____

4. How do you rate your interest to learn ICT?

A. Very high B. High C. Medium D. Low E. Very low

5. If your answer for question number 4 is “low or very low” what do you think is the reasons?

A. syllabus is not design for school. The subject is difficult

B. Poor teaching methods of teacher D. If other specify _____

6. To what extent learning ICT increases your knowledge and skills in other subject

A. To large extent B. To some extent C . Not sure

7. To what extent did the learning of grade 11 or 12 ICT lesson motivate your interest in learn ICT? _____

A. To large extent B. To some extent C. Not at all

8. Do you have interest to continue in ICT stream in your future career?

A, Yes B, No

9. How does your teacher know whether or not you understand the lesson or practice his teaching the classroom?

A. by asking question one by one C. by asking “are there question?”

B. by waiting for “yes” answer D. by checking the class work

E. If there is any other mechanisms please specific _____

10. How does your teacher know whether or not you understand the practice his teaching ICT lab?

A. by asking question one by one C. by asking “are there question?”

B. by waiting for “yes” answer D. by checking the class work

11. Do you discuss issues related to the teaching learning process of ICT subjects with your teachers? _____ A, Yes B, No

Section III School facility

Direction: Check all that apply and indicate your answer using (“√”) mark in the table below

Key numbers 1 = Adequate 2 = Inadequate 3 = Not available

❖ How do you rate your access to computers and related devices and reference in your school?

No	Criteria	1(Adequate)	2 inadequate	3(Not available)
1	Student Text book			
2	Lab manual			
3	Sufficient computer in Laboratory			
4	Computer updated with appropriate Software to teach			
5	Internet Connection			
6	Tool kits for teaching maintenance and troubleshooting			
7	E- learning			
8	Power			
9	Generator for power interruption			
10	LCD projector			
11	printer			
12	Power divider			

Section IV: The following are lists of factors that influence the extent of the implementation of Information communication Technology indicate the extent they hinder the teaching learning process of Information communication Technology with a tick (“√”) Equivalence of explanations or the rating scale

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

No	Factor	1	2	3	4
1	Shortage of text book				
2	Shortage of reference books(lab manual)				
3	Large number of students in a class				
4	Students poor background knowledge				
5	Inadequacy of periods to cover contents				
6	Unclear and difficulty of activities incorporated in text book				
7	Poor supply of facilities such as computers				
8	Lack of software				
9	Lack of support from teachers for technical support				
10	Inadequacy of time for practice				
11	Teachers lack knowledge and skill to teach ICT in your school				
12	ICT course is hard to understand				
13	Teachers encourage students to understand the lesson				
14	Content of ICT topics are vast to understand				
15	The contents of the text book be finished in the allotted time				
16	Lack of internet connection				
17	Lack of electric line in school				
18	Lack of generator				
19	Absence of Lab technician				
20	Inadequacy number of ICT teachers				
21	Lack of access furniture(Table and chair				
22	Farness of school from home town				

Yuunbarsiitii Jimmaatti

Kolleejii Barnootaa fi Saayinsii Qorannoo Sirna Amalaa

Dipaartmantii Barnoota Barsiisotaa fi Qorannoo Sirna Barnootaa

Gaaffannoo Barattootakutaa 11^{ffaa} fi 12^{ffaa} qophaa'e

Oajeelfama Waliigalaa

Kaayyoon gaaffannoo kanaa mana barumsa qophainna Godina Borana keessatti hojiirra oolmaa barnoota ICT ttif sababoota dhibba uumaan irratti odeeffannoo walitti qabuu fi. Kanaafuu, deebii dhugaa ta'e akka kennitan kabajaan isin gaaffadha. Deebiiwwan gaaffilee kanniinif kennaman iccitiidhaan kan eeggamaniifi odeeffannoo qorannoo qofaaf kan oolan ta'a.

Maqaakeessan hin barreessinaa. Tumsakeessaniif Horaabulaa!

Kallatti: Deebii keessan mallattoo ("^v") kaa'uun yookiin immoo deebii keessan iddoo isaaf qophaa'etti barreessuu ni dandeessu.

Kutaa 1: Odeeffannoowaa'eedhuunfaa/ duubessa

1. Umurii: 15-19 20-24 25-39 30 ol
2. Saala: Dhiira D para
3. kutaa a) 11^{ffaa} b) 12^{ffaa}
4. Muumea) Sayyinsii Hawaasa b) Sayyinsii Uumama
5. Maqaaman abarumsa _____

Kutaa 2: Sababoota gamabarsiisaa fi barataawalqabatee

1. Barsiisaan ICT keessanii darre barnoota keessatti hojii garre yookan dhunfaa akkamitti/hangam isaanii kenuu ?
A) Yeroo Marra C) yeroo tokkotokko
B) yeroo heduu D) yeroo murrassa E) gonkumaa

2. Basiisaan ICT keessanii kutaa labrartorii keessatti hojii garre yookan kan dhunfaa akkamitti/Hangam isaanii kenuu ?

- A) YerooMarra C) yerootokkotokko
B) yerooheduu D)yeroomurrassa E)gonkumaa

3. Yoogaffilakkofssa 1^{ffaa} fi 2^{ffaa} keessadeebiinkeessan D yookan E ta'eesababiimaalta'aajuttu

- A) HanqinaaKitaaba C) Fedhiiqabbachuudhabbarsiisa
B) Hanqinaakoompitarra D) YooSababiibirranjirrateeibsii_____
-

4. Fedhiinbarnoota ICT barachuufqabdaanakkamittisadarkeesituu?

- A) Baay'eeolaanaa C) Walakkeessa/ Jiduugaleessa
B) Olaanaa D) Gad bu'aa E) baay'ee gad bu'aa

5. Yoogaffilakkofssa4^{ffaa} fi deebiinkeessanDyookan E ta'eesababiimaalta'aajettaniyaadu?

- A) Tooftaanbarsiisaanbarsiisuugadiannata'uu
B) Barnoottichiulfaataata'uisaa
C) YooSababiibirranjirrateeibsii_____

6. ICT barachuunhangambeekumsa fi dandeettikeessandabalaa ?

- A) Hangaolanna B) Hangamuraasa C) Hinamanuu

7. BarnoottiniICTkutaa 11^{ffaa}yookan12^{ffaa}hangamfedhiiICT barachuukeessankakassa?

- A) Hangaolanna B) HangamuraasaC) hinamanuu

8. Barnoota ICT oguummaafuuldurattiittifufuufifedhiiqabduu?

- A) Eeyye B) Mitti

9. Yerookutaa laboratory keessattibarsiisaan ICT isaanbarsiisuuhubachuu fi hubachuudhabuukeessanakkaminbeekuu?

- A) Gaffitokkotokkongaffachun C) Gaffiiqabdaniijedhaniigaffachuun
 B) Deebiieeyyedhuueegachuun D) Hojiidareenmirkaneessu

10. Yeroodareebarnootakeessattibarsiisaan ICT isaanbarsiisuuhubachuu fi hubachuudhabuukeessanakkaminbeekuu?

- A) Gaffitokkotokkongaffachun C) Gaffiiqabdaniijedhaniigaffachuun
 B) Deebiieeyyedhuueegachuun D) Hojiidareenmirkaneessu

11. Barsiisaakeessanwaliinwa'eebaruufibarsiisuubarnoota ICT walqabateemarriatanibeektuu?

- A) Eeyye B) Mitti

Kutaa III Haaladhiyeessiimeeshaalee ICT

Qajeelfama: Deebiikee Mallattoo (“√”) ttifayyadamuun bakkaduwwaasaanduqakeessakaa’uudhaan deebiikenii.

Filannoowwan 1 = Gahaadha 2 = Gahaamitti 3 = Hinjiru

Dhimmadhiyeessii, carraa argachuukompiitaraa fi meeshaaleefakkaatanmanabarumsakeessatti haalakamiinilaalta?

T,L	Meeshaalee ICT	1(Gahaadha)	2(Gahaamitti)	3(Hinjiru)
1	Kitaababarata			
2	Manuali Laaboraatoorii			
3	Kompiitaragahaa			
4	Sooftiweriigahaa			
5	Internetti			
6	Meshaaleesuuphaa ittin barsiifamuu			
7	E-learnigi			
8	Ibsaa			
9	Jenenetarra			

10	Projektara LCD			
11	Printara			
12	Divayidera			
13				
14				

Kutaa IV:

SababootasadarkaamanabarumsakeessattihojiirraoolmaabarnootaICTdhiibbata'uudanda'an

QajelfamaDeebiikeemallattoo (“√”)ttifayyadamuunbakkaduwwaagabateekeessajiruirrattikeeni.

Filannoowwa

1 = gonkumawaliihingalu 2 = waliihingalu 3 = waliingala 4 = sirrumattiwaliigala

T.L	Sababota	1	2	3	4
1	Haanqinaakitabilee				
2	Hanqinakitabiileewaabii				
3	Bayyachuubaratootakutaakeessatti				
4	Dudubeenbaratootabarnoota ICT irrattigadiianaata'uu				
5	Gahaata'uudhabuuyeroo /sagaantabarnoota				
6	Hojiiifaahintanee fi ciimaata'eekitaabakeessattihammataamuusaattin				
7	Hanqinaadhiheessikompitara				
8	Softiwerrikompitaragahaata'uudhabuu				
9	Degarasatekniikkagamaabarsiisattinargachuudhabuu				
10	Gahaata'uudhabuuyeroo /sagaantashakkalaa				
11	Hanqiiinabeekumsa fi daandettibarsiisaa ICT barsiisuumanabarumsakeessani				
12	Baranoottini ICT hubbachuuficimaata'uusaattin				
13	Barsiisanakkabaratoottinisagantaahubataniitasisu / kakasuudhabu				
14	Mata duree ICT qabiyyeenisaahubbachufguddaata'uuisaa				
15	Qabiyyenkitabaayeroonkenameenxumurramudhabuuisaa				
16	Maniibarumsakeenyasarara (konekshinii) intarneetiiwaanhinqabneefi				
17	Maniibarumsasararaibsawaanhinqabneef				
18	Maniibarumsakeenyajenenetarawaanhinqabneef				

19	Maniibarumsakeenyateknishanaawaanhinqabaneef				
20	Bayyiniibarsiisa / barsiistuugahaatahuudhabuu				
21	Hanqinadhiyeessimeshalee (Teesso fi minjaala				
22	Fageenyamanabarumsa				

APPENDIX B

Jimma University

College of Education and Behavioral sciences

Department of Teachers' Education and Curriculum Studies

Questionnaire for Teacher's

General Directions

The aim of this study is to assess factors influencing the implementation of Information Communication Technology in grades 11 and 12. Be confident that the information gathered will be used only for the research purpose. Hence, you are kindly requested to provide the necessary information, which is very helpful to the quality of the research as well as to bring practical solutions to the problems.

Note. Do not write your name.

Thank You in advance!

Please respond by putting (“√”) mark or by writing your responses on the space provided.

Section I: Background Information

1. Age: A. Below 26 B. 26- 30 C. 31- 35 D. 36 – 40 E. Above 41

2. Sex: Male Female

3. Qualification: Certificate ___ Diploma ___ BSC/BA ___ MA/MSc ___ PHD ___

4. Stu:

A. 0 – 5 B. 6-10 C. 11-15 D. 16-20 E. 21 and above

5. What is the average class size in preparatory school?

A. below 55 students B. 56 – 65 students C. 66 – 75 students D. Above 75

6. The grade / s you teaching grade 11 12

7. Name of your school _____

8. Work load _____

Section II. School facilities

Direction: By use of a tick (√), indicate whether you agree with the following statements regarding the influence of school facilities on ICT implementation you are to indicate, or a four point scale and fill the appropriate response if the question required written response.

4 = StronglyDisagree 3= Disagree 2= Agree 1= Strongly Agree

No	Statement	4	3	2	1
1	Absence or inadequacy of in-service training				
2	Poor supply of facilities such as computers				
3	Inadequacy of time for practice				
4	Inadequate financial support for Information Communication Technology				
5	Inadequate internet connection in school				
6	Inadequate reference books in Library				
7	Inadequate ICT text book for students in preparatory school				
8	Inadequate ICT laboratories				
9	Inadequate Laptop				
10	Inadequate Toolkit				
11	Inadequate of furniture (such as chairs and tables)				

12. Do you school has electric utility service for your Information Technology equipment?

A, Yes B, No

13. How do you rate the school facilities to support the implementation in your school?

A, Excellent B, Good C, Average D, Poor

Section III. School Leaders and student related

By use of a tick, indicate whether you agree with the following statements regarding the influence of administrative support on ICT implementation mark (√) the point which indicates how closely you yes, no or not sure with the factors expressed in each statement .

No	Statement	YES	No	Not Sure
1	Students have poor background knowledge of ICT			
2	Students in preparatory school learn ICT without interest			
3	The organization of the content and learning activities of ICT syllabus is appropriate for teaching students in preparatory school			
4	Most of the content of ICT curriculum are beyond the ability of the students in preparatory school			
5	Difficulty of role and activities incorporated in text book			
6	The syllabus and teacher guide are helpful for ICT teachers in planning and implementation process			
7	Methods and technique of teaching suggested in the materials encourage more of teacher explanation and guide discussion			
8	The contents of the text book be finished in the allotted time			
9	The Content of ICT topics are vast to understand			
10	The suggested teaching methods are appropriate			
11	Poor discipline of students			
12	Traveling of long distance for students from home town			
13	Absence of experience sharing inside the school			
14	Absence of enraging teachers on ICT curriculum implementation			
15	Poor school administration			

16. How do you often discuss of ICT curriculum implementation with school principal

A. Frequently B. Rarely C. Not at

17. How do you rate the capacity of your school management structure in solving problems arise in the teaching learning process?

A. High B. Medium C. Low

18. Have you participated in any in-service training programs (seminar, workshop, or anyother) with regard to ICT curriculum implementation of grade 11 and 12?

A. Yes B. No

19. If your answers for number 18(yes) how many times have you participated?

A)one _____ B.two _____ C.three _____ D.four _____ E. five and above _____

20. If you have taken any training or orientation, how helpful the training was/is in enabling you teach the ICT subject effectively?

1) Very helpful 2) Helpful 3) Somehow helpful 4) Not helpful at all

21. Do you think that you need more additional in-service training programs to increase your classroom performance?

A. Yes B. No

22. If you need to take any training, please specify the type of training you need to fill your skill gap to teach the ICT subject effectively?

Section 4: Overall Comments

1. According to your view, what do you think are the major factorsthat influence the implementation of ICT curriculum in the school?

2.What possible solutions do you suggested to overcome these challenges for better implementation of ICT curriculum in preparatory school?

APPENDIX C

Jimma University

College of Teachers' Education & Behavioral Sciences

Department of Teachers Education and Curriculum Studies

Observation checklist

This checklist is prepared to gather information concerning factors influence the implementation of ICT curriculum in Borena Zone selected preparatory schools

Name of schools observed _____ Date _____

Grade observed _____

ICT Laboratory Class room

Student Ratio _____

A) 1= Not available 2 = Very poor 3 = poor 4 = Good 5 = Excellent

no	Criteria	1	2	3	4	5
1	Computer, Software and Internet Connection, Text book and lab manual					
1	Sufficient computer in Laboratory					
2	Computer updated with appropriate Software to teach					
3	Good Internet Connection					
4	Tool kits for teaching maintenance and troubleshooting					
5	E- library					
6	Generator for power interruption					
7	Lab manual					
8	White bored					

B)1=Weak 2= Not bad 3= Good 4= Very Good 5= Excellent

No	Criteria	1	2	3	4	5
	Teaching Learning Process in class and ICT lab					
9	Lesson matter knowledge					
10	Lesson Understanding and Presentation to student					
11	Different method and strategies used to teach					
12	Encourage students to understand the lesson					
13	Students interest in ICT course					
14	Time allowed					

3. Weak point

4. Strong point

5. Comment

APPENDIX D

JIMMA UNIVERSITY

College of Educational and Behavioral Science

Department Of Teacher Education and Curriculum Studies

Semi structured interview guidelines for school Principal and Vice Principal

Instruction: The purpose of this interview guideline is to gather information on the title Factors Influence Implementation of Information Communication Technology curriculum in your school. Your genuine response has of great important for the success of the study. So I'm kindly requesting you to respond this interview questions and be sure that responses are kept confidential as well as for the study only.

Section I: Background Information

1. Name of School _____ Date _____
2. Time started _____ Time ended _____
3. Gender Female _____ Male _____
4. Qualification _____

Section II.

Factors Influence Implementation of ICT curriculum in Preparatory schools

1. Comment on the presence of ICT facilities in your school
2. How adequate are these facilities to support implementation in your school
3. Comment on the student interested in the implementation of ICT curriculum?
4. Comment on the presence enough room for computer (computer Lab)
5. Comment on the presence of computer classroom for students to practice in their free time
6. Comment on the adequacy of ICT teachers in school like other subject
7. Comment on the presence technician to solve computer problem in the school?

8. Comment on the presence ICT club to attempts made by the school community to promote the use of ICT in the school

9. How do school proved the appropriate support to ICT teachers to achieve the objective of Subject

10. What the school is doing well in implementing the ICT curriculum of grade11and 12? That is practice or experience of the school

11. As a principal, what challenges do you experience in ICT implementation in your school?

12. If there is any additional ideas concerning the factors influence the implementation of ICT curriculum in your preparatory school related to:

- Teachers
- Students
- Administration and
- School facilities

APPENDIX E

If the target population is finite, the following formula (Krejcie & Morgan, 1970) may be used to determine the sample size.

$$S = \frac{X^2NP(1-P)}{d^2(N-1) + X^2P(1-P)}$$

Where:

S = Required Sample size

X = Z value (e.g. 1.96 for 95% confidence level)

N = Population Size

P = Population proportion (expressed as decimal) (assumed to be 0.5 (50%))

d = Degree of accuracy (5%), expressed as a proportion (.05); It is margin of error

Table for determining sample size for finite population

To simplify the process of determining the sample size for a finite population, Krejcie & Morgan (1970), came up with a table using sample size formula for finite population.

$$S = \frac{3.841 * 2415 * 0.5(1-0.5)}{(0.05)^2(2415 - 1) + 3.841 * 0.5(1-0.5)} = 331 \text{ total population (13.7\%)}$$

Three hundred ten people is ample to represent the total population for the study.

Proportion for all schools has been calculated as follows:

Students

Yabelo Preparatory school $1039 * 13.7\% = 135$

Dubluk Preparatory school $266 * 13.7\% = 34$

Moyale Preparatory school $604 * 13.7\% = 78$

Elwoye Preparatory school $116 * 13.7\% = 15$

Dilo Preparatory school $86 * 13.7\% = 11$

Mega Preparatory school $304 * 13.7\% = 39 = \underline{\underline{312}}$

