LEADERSHIP CHALLENGES IN THE UTILIZATION OF INFORMATION COMMUNICATION TECHNOLOGY IN SECONDARY SCHOOLS OF JIMMA ZONE SOUTH WESTERN, ETHIOPIA

BY

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COLLEGE OF EDUCATION AND BEHAVIOURAL SCIENCE

DEPARTMENT OF EDUCATIONAL PLANNING AND MANAGEMENT

A THESIS SUBMITED TO THE DEPARTMENT OF EDUCATIONAL PLANNING AND MANAGEMENT IN PARTIAL FULFILMENT FOR THE REQUIREMENTS OF MASTER DEGREE OF ARTS IN EDUCATIONAL LEADERSHIP

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DECLARATION

The researcher hereby declares that the Thesis on Title Leadership Challenges in the Utilization of Information Communication Technology in Secondary Schools of Jimma Zone South Western, Ethiopia in government secondary schools the case of Jimma zone, Oromia regional state work and that all resources that have been referred to and quoted have been dully indicated and acknowledge with complete references

Name_____

Sign_____

Date_____

This thesis has been submitted for examination with approval as the university advisors

Main advisor_____

Sign_____

Date_____

Co-advisor_____

Sign_____

Date_____

Date of submit ion _____

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LIST OF ACRONOMY

CTA	Curriculum, Textbooks and Assessment
EL	Electronic Learning
FDRE	Federal Democratic Republic of Ethiopia
GEQIP	General Education Quality Improvement Program
ICT	Information and Communication Technology
ICT4D	Information and Communication Technology for Development
IT	Information Technology
LIS	Library Information Science
MAP	Management and Administration program
MDG	Millennium Development Goal
MOE	Ministry of Education
NICTS	National Information and Communication Technology
P-TV	Plasma Television
SIP	School Improvement Program
SPSS	Statistical Package for the Social Sciences
TDP	Teachers Development Program
UN	United Nation

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ABSTRACT

The aim of the study were to examine the current school leadership challenges utilizations of Information Communication technology ICT program in education specifically in Jimma zone secondary schools. To investigate and examine the study 22 secondary schools, 305 respondents were used and data were gathered through questionnaires, interviews, and direct observation. The descriptive survey methods were employed to identify the perceptions and stands of the teachers and stakeholder towards the implementation and advantages of ICT for the teaching-learning process so as to impart quality education. For analysis, mean scores and percentages were used to see the perceptions and attitudes of the respondents. And also, data collected through interviews and observations were analyzed in relation with the results of the questionnaires. The findings of the study revealed that 70.8 % the respondents had a positive attitude on the values of ICT utilization in education to improve the quality of education in terms of accessing qualified teachers, getting teaching materials that were not accessed other wise and information needed for their subject matter, promoting student-center method of education and community participation, and improve the knowledge and skills of teachers and students even for future career. However, 55.6% the respondents agreed that the implementations of ICT in the schools faced a lot of problems such as inadequate supply of ICT equipment such as computers, plasma television display and their necessary accessories and scarce skilled personnel and insufficient ICT rooms, electric disconnection, network problem, with a heavy background of unfriendliness to technology and little involvements of stakeholders, lack of proper budget and commitment of school leadership. Due to this findings, it is strongly recommended that the ICTDA structured under the Ministry of Education in collaboration with the stakeholders should work hard to solve those challenges of the schools in order to utilize the ICT program effectively and improve the quality of education given in the Jimma zone.

Keywords: *School Leadership, Utilization, ICT, Secondary Schools*

CHAPTER ONE

1. INTRODUCTION

1.1 Background of the Study

Education is a socially oriented activity and hence quality of education has traditionally been associated with strong teachers having high degrees of personal contact with learners (Daniels 2002). The utilization and use of ICT in education lends itself to more student-centered learning settings. But with the world moving rapidly into digital media and information, the role of ICT in education is becoming more and more important and this importance will continue to grow and develop in the 21st century yet poses with the challenges of leadership. Effective utilization and use of ICT for education it needs effective implementation of ICT, along with ICT use in the teaching-learning process can enhance relevance quality and accessibility of education; learning motivation and learning environment, for this purpose implementation of ICT in secondary schools properly implemented depends on school leadership on various activities in their schools. ICT is important in school because it performs various school functions such as; record keeping, research work, instructional uses like PowerPoint presentations, financial analysis, examination results analysis, communication, supervision and general school management functions.

According to Schiller (2003) School principals have a major responsibility for initiating and implementing school change through the use of ICT and therefore facilitate complex decisions about integration of ICT into teaching-learning. Implementing ICT into schools is the responsibility of the school principal; they need to ensure that the best interests of the students are served through effective use of ICT with necessary infrastructure and staff professional development. The principal is responsible that the investment, financial and other issues of ICT in the school is beneficial to the whole community of school. The principal's knowledge of ICT is essential, so that systems can be in place to make organizational processes more efficient (Gurr, 2000), including the employment of personnel to manage and administer the ICT provision in the schools.

Due to this, leadership is an important component in guiding the teaching-learning process in schools with the implementation of ICT. Principal as school leaders have a major

responsibility for initiating and implementing school change through the use of Information and Communication Technology (ICT) and can facilitate complex decision to integrate it into teaching-learning and school administration (Afshari et al, 2008). Hence, educational leaders must understand, promoting and implementing the notion that technology integration is not about the technology; it is about focusing on the future generations and leading teachers to a change in use of as pedagogy of technologies in the schools.

According to Betz (2011), implementation of ICT in schools would be successful when school leader supports, provide up to-date provision, adequate professional development and support staff during its implementation. School leaders have responsibility of supervising implementation of ICT programs in their schools. For efficient implementation of ICT in schools, school leaders must address challenges of implementing new technologies, starting with their own challenges. In the implementation of ICT in secondary school leaders cope themselves with the change of technology, because of ICT very essential for supporting secondary school teaching-learning process and access to the necessary information for the learners and schools community.

The Ethiopian Government has made the development of Information and communications technology as one of its priorities to enhance the country's overall socio-economic growth and its educational system (EICTDA, 2009). The Government undertook two big national ICT projects: the WoredaNet and the SchoolNet. WoredaNet is a government network that links nearly 600 local administrations ("weredas") and the federal government headquarters in the nation's capital, Addis Ababa. It includes email, Internet access, and file-sharing and videoconferencing facilities. The Woreda Net was also planned to provide adult learning services for nearby communities. The School Net project, on the other hand, established an education network that connects more than 600 secondary schools with access to general ICT, e-mail and the internet and others services of technologies. It also enables rural village schools to receive streamed Internet and TV-based educational content, creating a strong foundation for e-learning. Therefore, in addition to its political commitment and proactive leadership role, the Government of Ethiopia will also play a leadership role in mobilizing resources and attracting investment (FDRE, NICTS 2009).

Enabling Policy conditions availability in the GEQIP document to implement ICT for educational quality improvement was also assessed. Curriculum, Textbooks and Assessments

(CTA),Teacher Development Program (TDP), School Improvement Program (SIP), Management and Administration Program (MAP), Civic and Ethical Education, the ICT application in education, of course, ICT and GEQIP is the special focus of this project. Even though there are different challenges Ethiopia has made the development of information and communications technology (ICT) one of its strategic priorities. The ICT policy is a demonstration of its commitment to the development of ICT both as an industry and as an enabler of socio-economic transformation.

Ethiopia shall equip itself with the requisite and integrated infrastructures such as power and communications networks, which constitute a crucial role for the penetration and development of ICT everywhere. The country needs modern and efficient infrastructure to optimize the benefits provided by ICT. The 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 (MOE, 2013). 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 was appropriated to equip it with basic knowledge and awareness of computer and related technology foster by leadership for school. The exploitation and full scale application of ICT required conducive legal systems in the country.

This condition refers to the use of ICT as a tool for socio-economic development as well as its promotion education sector. The government recognizes that the ICT legal systems framework which has been operational in the country cannot cope with the challenges of the fast developing national and global ICT sector. Moreover, the uncoordinated development of ICT in Ethiopia has inevitably resulted in acquisition and application of varying systems and standards; duplication of efforts and wastage of scarce resources. The government therefore recognizes that ICT development will need to be guided by appropriate standards and best practices. The policy of ICT to see with global issues that challenges to what extents leadership cope in secondary school the implementation of ICT deals with adequate resources use in the quality of education. As effectiveness of secondary schools leadership improves, so does likelihood of schools implementing quality ICT. Effective secondary schools leadership focuses on ICT provision, ICT implementation, and ICT leadership, learning theory, general teaching and general SS leadership.

The Millennium Development Goal (MDG) of the United Nations (UN) recognizes ICT as a tool for its attainment. The role of ICT in development was also recognized in the Geneva Declaration of the World Summit on the Information Society (2003) as well as other regional conferences in which Ethiopia has been actively participating. Countries worldwide are using ICT as the driving force by successfully exploiting the opportunities it presents for their social and economic transformation. Towards this end they have adopted policies as a framework for the exploitation and application of ICT.

School leadership to what extent interest, commitment and provision of ICT programs in secondary schools influencing the way Inform ICT programs were being utilization in the secondary schools. As well as providing the need ICT infrastructure. School leaders should focus on how infrastructure affects teaching-learning in their secondary schools. To achieve this, school leaders in Jimma zone secondary schools to what extent should recognize that, the idea to utilizing ICT in schools is not only for school use, but also a transformation of teaching and learning with the adequate resources of ICT.

According to Laaria (2013) many authors argue that school leadership determines how Information Communication Technology (ICT) is utilizing and its subsequent impact on teaching-learning. This involves Principal as a school leader to lead in implementation of ICT. A positive attitude of school leader towards utilization of ICT was being encouraging the school community to be actively involved in its implementation. From this, school leaders determines how to information and communication technology ICT in secondary schools to implementing with the whole school community to encouraging ,motivating and inspiration with positive attitude to utilization of ICT in the secondary schools.

Research suggests that implementing ICT can transform the existing school system by raising the efficiency and effectiveness of teaching and learning hence increasing students' achievement. Many studies emphasize the benefits of implementing ICT in schools. Papaioannon & Charalambous (2011) stressed that ICT in school can motivate students, stimulate their interest, increase their self-esteem and self-confidence, increase their creativity, allow greater inter-activity, enhance their critical thinking and increase their attainments among other benefits. Additionally, Laaria, (2013) notes that ICT can enhance teacher's efficiency and enthusiasm, encourage their planning and co-operation, helps them adopt student-centered teaching strategies, reduce their workload, and improve relationship

between teachers and students.Due to this, to implementing ICT in secondary schools and the preparation and utilization of ICT is an important component here. It was important to understand that educational technologies provide students with some readiness to learn, where by using ICT tools is one of the methods or materials used to bridge the existing gap and promote independent and active learning.

Ethiopia is in the process of implementing ICT in secondary schools. However, there are many challenges that hinder effective ICT implementation in secondary schools including school leadership challenge. Educational leadership in any direction to implemented ICT on teaching-learning process for fostering the intended goals Such as Ethiopian national school net, national ICT in higher education, the national ICT education training and awareness initiative. These three streams from the basis for the implementation of the strategy across the education sector and the other sector. The national school net initiative for instance is aimed at the deployment and exploitation of ICT to facilitate teaching and learning process within primary, secondary, technical and vocational schools. The ICT in higher education initiative focus deploying ICT within the Universities, Collage and research institution. Finally, the national ICT education training and awareness initiatives promote ICT awareness and literacy, livelong and adult education, distance, virtual education and learning. In this study were examined with the Ethiopia national school net in secondary schools. To a large extent school leaders had been relying on government and development partners to equip schools with ICT equipments. So that schools leadership supports ICT utilization, school leadership should consider ICT a priority in the school and allocate budgets that would promote its implementation. This necessitated examining school leadership challenges in implementation of ICT by asking “How does School Leadership influence utilization of ICT in Government Secondary Schools?” in Jimma zone. These finding were deals on the challenges of implementation ICT in secondary school in Jmma zone because of trained man power skill, lack of infrastructure in rural areas and enough resources, turnover teachers ICT. There was no study conducted on implementation ICT challenges of leadership in Jimma secondary school. The study was being conducted in January to May 2016.

1.2. Statement of the Problem

The poor socio-economic conditions of most developing countries like Ethiopia draw back the attempts made in various sectors for development (Leoulseged, 2010). One of the major challenges is incapability of the education sector to go hand in hand with technological change. To lead this change or major challenges it needs capability of school leaders. It becomes impossible to continue with the traditional education system. School leadership and teachers cannot go a bit ahead of their students with the pervious teaching methods, in secondary school teaching-learning process are lack of technology, need more emphasis students are prepared for further learning and leaders, teachers and students at these stage should be encouraging by change of technology, so that school leadership to cope themselves with change. The environment urges them to change with technology. ICT is the main agent for this change. It revolutionizes the teaching-learning environments. This means an education with ICT adding improving administration and management pedagogical and learning values, enhancing the quality, adequate resource, access, effectiveness and efficiency of the education systems in the classroom and beyond.

Failing to implementation of ICT in the education sector, on the other hand, providing quality education and accommodating equity of education given in the urban and rural sides of the country was become a challenging. The distributions of qualified leadership, teachers and resources were also at risk. And also getting information from various sources cannot be easily accessible.These problems are also facing the education sector of our country. Although most of the secondary schools found in Jimma zone have the scanty equipments of ICT and gaining some observable achievements, many of them are not still the beneficiaries of the technology.

To what extent the condition of the utilization of ICT in secondary schools of Jimma zone. The leadership challenges in the implementation ICT, educational technology in general and the implementation of ICT in particular will be outlined because they are the basic pillars in seeing whether the available infrastructure in secondary schools and skills teachers are up to how they are suppose to be. Access to and the constraints of the available ICT related technologies were also examining. In general, “to what extent interest, commitment and effectively implementing ICT in teaching-learning process for achieving quality of education had been employing?” and challenges which hold back the leadership challenges in the

implementation of ICT in secondary schools in Jmma zone. Therefore, this study was try to examined the leadership challenges in the implementation of Information Communication Technology in Jimma zone South Western Ethiopia in some selecting secondary schools to ensure quality of leadership and the study was aim at seeking answers for the following four basic questions.

1.3. Research Question

Accordingly, the study was designed to answer the following basic questions:

- To what extent ICT supports teaching-learning process at secondary schools?
- To what extent resources allocated and personnel are adequate to facilitate the utilization of ICT in secondary schools?
- To what extent ICT contributes to improved access, relevance and quality of education?
- What are the major challenges that school leadership faces in implementing ICT in secondary schools?

1.4. Objective of the Study

1.4. 1. General Objective of the study

- To investigate the leadership challenges and constraints in utilizing ICT in Secondary Schools in order to ensure its effective utilization of ICT

1.4.2. Specific Objective of the Study

- To examine the extent to which the schools have the required infrastructure to implement ICT effectively
- To identify whether the teaching learning processes in Jimma zone SS is well supported by ICT adequately
- To investigate how ICT supports improvement of access relevance quality of education in Jimma zone Secondary schools.
- Identify challenges that hinder effective implementation of ICT in secondary schools of Jimma zone.

1.5. Significance of the Study

The result of this study will have the following significances:

To a gradual improvement of the access, relevance and quality of education the learning environment, as well as to afford a remarkable opportunity for teachers' development of Jimma zone education office and districts education offices teachers should be get more insights about the proper utilizations of ICTs in the teaching-learning process. Since curriculum designing involves the provision of learning experience to achieve setting objectives, kind of learning experience were provide when proper utilizations with good quality of education by using ICT. Since teacher professional development includes training in the adaptation to the evolution of change of the profession of teachers and managers of education systems, the study may provided hint to equip school leader and teachers not just with basic ICT skills, but should encourage the evolution towards integrating technologies into teaching subjects and practices.

1.6. Limitation of the Study

The limitation of the study were cannot be generalized for all schools in the zone, because the study focused only on selected (grade 9-10) secondary schools excluding the preparatory and primary schools. Willingness of respondents on the questionnaires to be filled freely due to time constraints, appropriate infrastructure in the districts and schools and the scattered secondary schools in the zone and districts.

1.7. Scope of the Study

The study were conducted in secondary schools of Limu Seka,Mana,Kersa,Gumay,Tiro Afeta and Shabe Sombo districts of Jimma zone on the leadership challenges in the utilization of ICT in twenty two (22) Secondary Schools. The issues of ICT in education are multifaceted, this study were delimited to the leadership challenges utilization of ICT in terms of Plasma Television, the provisions of computer and other related service of technologies. Its components such as school net and as well as other related issues were beyond the scope of the study though they are important and indeed critical. Requirements for accountability in managing schools and meeting the needs of all students and teachers, coupled with demand of a digital society require a change in the way schools were managed. Some school leaders were committed to implementing needed changes. They understand the potential and role of ICT, when it is coupled with a focus on learning, for developing a capacity for relevance

change, while others do not. Therefore, lack the essential visions and knowledge to lead utilization of ICT in their schools. As well as providing the needed ICT infrastructure, School leaders should focus on how infrastructure affects teaching and learning in their school.

Utilizing ICT to support teaching and learning in school in order to achieve enhanced education outcomes, so it could be the answer to this problem, where the few teachers available could share information with thousands of students in schools. Concerning the time, the study is confining to school leadership challenges utilization in the ICT during the 2015-2016 academic year.

1.8. Operational Definition of Terms

The terms used in this study may convey a different interpretation in a different context. So, to avoid some possible confusion, the following were operational definitions of some of the terms used in this study.

Electronic learning (E-learning):- Is an electronically supported learning and teaching, which can be networked learning or not, and serve as specific media to implement the learning process.

Information Communication Technology (ICT) :- In this study was refers to the educational television (plasma TV), computer and others services of technologies used to handle and communicate information for learning purpose in the implementation of ICT in the secondary schools.

Information Communication Technology for Education: - ICT for Education is a subset of the ICTD that has a collaborative learning network linking humanitarian agencies to technology and the benefits it provides to achieve improvement of the educational situation.

1.9. Organization of the Study

This study was organized into five chapters. The first chapter deals with background of the study, statement of the problem, basic research question, objectives of the study, significance of the study, the limitations of the study, scope of the study, operation definition of the study and organization of the study. The second chapter contains a review of related literatures. Chapter three deals with research design and methodology including the sources of data, the study population, sample size and sampling technique, procedures of data collection, data gathering tools, methodology of data analyzing and ethical consideration. The fourth chapter

deals with data presentation, analysis and interpretation. The fifth chapter deals with discussion and recommendation.

CHAPTER TWO

2. REVIEW OF RELATED LITERATURE

2.1. The Concepts of Information Communication Technology

The acronym ICT is used to denote a new concept which is a combination of two previously unrelated concepts, (1) information technology and (2) communication technology. Information technology (IT) is the term used to describe the equipment and software elements that allow us to access, retrieve, store, organize, manipulate and present information by electronic means. Communication technology (CT) is the term used to describe equipment, infrastructure and software through which information can be received and accessed, for example phones, faxes, modems, digital networks, and digital Subscriber line (Colin and Hales). Concerns over educational relevance and quality coexist with the imperative of expanding educational opportunities to those made most vulnerable by globalization developing countries in general. Information and communication technologies (ICTs) which include plasma television, as well as newer digital technologies such as computers and the Internet have been touted as potentially powerful enabling tools for educational change and reform. When used appropriately, different ICTs are said to help expand access to education, strengthen the relevance of education to the increasingly digital workplace, and raise educational quality (Victoria, 2002).

Bluton (1999) defines ICT as shorthand for a computer, software, networks, satellites, links and related systems that allow people to access, analyze, create, exchange, and use data, information, and knowledge in ways that, until recently, were almost unimaginable. The term Information and Communication Technology (ICT) refers to forms of technology that are used to capture, store and communicate information. ICT is defined as encompassing all equipment and tools (inclusive of traditional technologies of radio, video and television to the newer technologies of computers, hardware, firmware etc,), as well as the methods, practices, processes, procedures, concepts and principles that come into play in the conduct of the information and communication activities. We are living in knowledge based society where knowledge becomes a vital resource to succeed in this fast changing society. Citizens become productive citizen for themselves as well as for their country if they can develop the capability to create, retrieve and use knowledge resources in the daily endeavors. Knowledge is growing

at a fastest rate and the knowledge that we have become quickly obsolete unless we develop a capability for continuous learning.

ICT is the main tools that realize this continuous learning (MOE, 2013). The general objective to begin ICT as a discipline in secondary schools is to meet up with the goal to train students who will be ICT literate. The Ethiopian government launched different ICT projects to increase ICT penetration in the schools and Universities. The National School Net initiative, for instance, is aimed at the deployment and the exploitation of ICTs to facilitate the teaching and learning process within primary, secondary, technical and vocational schools. ICT also introduced as a school subject or common course in high schools as well as in universities. All these initiatives will help students develop skills that will permit them to be salaried or self-employed and easily integrated into the working population for better performance in the economic development of the country. Teachers should have broad knowledge and skills to support their students to achieve the overall learning objectives in the ICT curriculum.

According to Birhanu (2014) Information and Communication Technologies (ICTs) are referred to as the varied collection of technological gear and resources which are made use of to communicate. They are also made use of to generate, distribute, collect and administer information. ICT is a force that has changed many aspects of the way we live. Information and Communication Technologies (ICTs) consist of the hardware, software, networks, and media for collection, storage, processing, transmission and presentation of information (voice, data, text, images), as well as related services. ICTs can be divided into two components, Information and Communication Infrastructure (ICI) which refers to physical telecommunications systems and networks (cellular, broadcast, cable, satellite, postal) and the services that utilize those (Internet, voice, mail, and television), and Information Technology (IT) that refers to the hardware and software of information collection, storage, processing and presentation. According this study the implementation ICT in secondary schools most of the educational television; computers; and others related technologies.

2.2. Information and Communication Technology and Education

Today's issues of most scholars are not whether the use of technology in education is an important factor or not, rather what types of technology are very useful compared with others that bring about change in the education sector. Most of the educators suggest the idea that focuses on ICT. The education sector is now extremely enforced to use ICT (Nombiar, 2005).

This is due to the reason that ICT can address the major problems of education that can be observed today. Those problems are many. Cairncros (2005) identifies some of the major constraints on delivering education to the right people at the time. And he underlines that in developing countries, there is frequently a shortage of qualified teacher, people may live in a scattered communities in rural area, money for books and teaching materials may be all these challenges have encouraged an interest in the use of ICT. ICT also creates challenges: by accelerating the expansion of information and increasing the value of knowledge, technology challenges schools to support learning that helps them build skills that they can use now and that will support their participation in civic and economic life in a dynamic future. So that, school leadership to know the use of ICT in secondary school, then to implementing with properly materials of technologies to supporting ICT of utilization in their school.

However, those issues of education are access, efficiency, quality and relevance of the education that can produce graduates that can hold back the problems of the communities under which the education sector serves. Therefore, the implementation of ICT in education possibly solves those problems outlined above. It can be possible to deliver education without the problem of space and time. In most developing countries, most of their societies live in the rural side so that large part of their population is far from education imparted in their more developed cities.

Even though education is provided in those areas, it is given with unqualified teachers so that by using ICT, it is possible to deliver quality education. The other issue is sharing resources. Resources are scares so that it is impossible to satisfy the entire education sector. However, it urges the education sector to use the available resources very wisely, so that to use resource with wisely it need school leaders in secondary school. It is possible in order to perform this successfully with the use of ICT. The use of ICT can help us share meager resources to as many schools as possible. As much as ICT has been instrumental in bringing fundamental changes to the teaching and learning process in other parts of the world, the curricula of most developing countries including Ethiopia is yet to consider understanding ICT and mastery of basic skills as part of the common core of education (Dessalegn and Dagmaw). So that, ICTs can contribute to achieving universal education worldwide, through delivery of education and training of teachers, and offering improved conditions for lifelong learning, encompassing people that are outside the formal education process, and improving professional skills. In

fact, school principals as change facilitators carry the responsibility of initiating and implementing school change through the use of ICT and can facilitate complex decisions to integrate it into learning, teaching, and school administration (Schiller, 2003). Many researches on technology best practices for teaching and learning indicate that principals are a key to sustained technology integration in any school building. And those principals express a strong interest in developing instructional leadership skills for the integration of technology into teaching and learning. In her research on principals' leadership and ICT integration, Yee (2000) found that the schools that integrated ICT in the most constructive way were those where the principals shared an unwavering vision that ICT had the potential to improve student learning. These principals also portrayed passionate commitment to providing professional development to enhance their teachers' ICT skills. Schiller (2000), talks about the key roles that the principals need to play such as highlighting supporting technology, and facilitating change and intervention strategies in the teaching and learning process.

2.2.1. The Implementations of ICT in Education

Today's education urges the use of ICT. This is because of the fact that the dispersed living condition of the societies creates many challenges to the education sector. Those challenges are lack of qualified teachers, scarce resources, scattered ways of living conditions of the societies and the needs of minimizing the educational wastes. In order for addressing all these issues of education, the situations impose the use of ICT in the sector. Information and Communication Technologies (ICT) have become central to education and training in Library and Information Science/Service (LIS) because of the great influence of these technologies on the professional world.

Challenges of ICT Implementation in General Education Quality Improvement Package Although ICT (plasma-TV) assisted instruction is old technology, it is recently emerged in our country. Our education system is struggling with this newly emerged change. From the very nature of change and the country's real condition it is expected to face different challenges. Ethiopia Telecommunication Corporation (ETC) was licensed by the regulator for implementation ICT in education, Ethiopia Telecommunications Agency (ETA) as the national operator to provide public switched telecommunication services, GSM 900 Mega Hertz mobile telecommunication service, Internet service, and digital data communication (ETA, 2007). As country's educational ICT technology infrastructure sits on top of the

national telecommunications and information infrastructure the adoption process faces real challenge.

Implementation of ICT in schools has remained elusive since most of them are not connected to electricity grid, has no capacity to buy the required infrastructure, and has school leaders and teachers who are either computer illiterate or technology ignorant, though the current global technology changes puts emphasis on digitalization and modernization of all sectors including schools (Laaria, 2013). All over the globe, there is a trend to use ICT in the teaching learning process. The teacher and learner must gain access to technology for improving learning outcomes. Educational reforms include successful designing and implementation of ICT in teaching learning process, which is the key to success (Shaik, 2013***).***

In doing this, Information and communication technology can make the school more efficient and productive, thereby engendering a variety of tools to enhance and facilitate teachers' professional activities, when properly implemented with necessary resources. Implementation of ICT in secondary schools spending is mostly on hardware, software, infrastructure and training. ICT integration in schools therefore requires investment in equipment, professional development and teacher training, technical support, connectivity and digital learning process. There for School leadership are chief accounting officers in their schools and therefore are concerned in allocating budgets to various school activities including to implementation of information and communication technology.

To realizing educational objectives of the "information age" requires integrating modern forms of information and communication technologies (ICT) into education. To do this effectively, education planners, principals, teachers, and technology specialists must make many decisions in the following areas: technical, training, financial, pedagogical and infrastructure requirements. Andoh, (2012) defines implementation as processes and decisions made by individuals every time they consider adopting innovation. Khan, Hassan & Clement, (2012) describes implementation of ICT in schools as the decision made by school leaders and teachers to make use of technology as the best course of action available. Andoh, (2012) observes that the process of implementation of ICT starts with initial hearing about the technology to final adoption and using it.

2.2.2. Types of ICT Implementation

As outlined above, the term ICTs includes all the technology that we use to create, store, exchange information in the form of data. According to those authors who provide the definitions of ICT confirm that ICT includes such technologies as television, video, DVD, telephone; satellite systems, computer and network hardware and software; as well as the equipment and services associated with these technologies, such as videoconferencing, e-mail and blogs.

On the basis of this definition, it becomes difficult to firmly categorize the dynamically emerging and developing ICT. However, Blurton, (1999) classifies it as "New" and "Old" ICT. According to his category, old ICT includes print, films, videos, tapes, telephone, television and radio. And the new one incorporates computer, internet, World Wide Web and so no.

Besides, even there is such a distinction which classifies ICT into single and digital. However, for the purpose of this study, the focus will be only on the implementation of ICT on educational television, computer and other technologies services that are the major types of ICT used in the education in secondary school. Thus, below are their descriptions:-

2.2.3. Implementation Educational Television

According to Vanaja and Rajasekar (2008), Educational Television is a system that presents learning content in various subjects produced by an agency. It is a means of providing direct instruction (formal) as well as continuing education (non formal). It has the capacity to bring the world into a classroom; Improves the quality of education; is used as a Catalyst; a means of extending students' experience and introduces affective education; and is applied as a means of equalizing educational opportunity as well as a means of improving efficiency and productivity and Television-based instructional system. They also explain further the roles of educational television Program. These are to introduce the content for the teacher to elaborate later and to provide drill and practice to the students; to provide background materials for the lesson the teacher will deliver; to reinforce and review ideas already covered in class; and to provide salient illustrations that will stimulate class discussion and discovery.

2.2.4. Implementation of Computer

Scholars define the term computer in different but in a much related ways. According to Mellar (2007) a computer is a device that accepts information (in the form of digitalized data) and manipulates it for some result based on a program or sequence of instructions on how the data is to be processed. Complex computers also include the means for storing data (including the program, which is also a form of data) for some necessary duration.

According to Makhonu, (2010) secondary school principals should lead the way by making comprehensive and concerted commitment in dealing with challenges that result to lack of effective implementation of technology in their schools. The successful implementation of ICT in schools is determined by principals who actively give timely support, encourage students, teachers and other school staff to appreciate technology implementation. They should device ways of meeting the challenges that their schools face in terms of implementation of ICTs. Principals should be innovative, competent and be focused in dealing with challenges that are encountered when implementing ICT in the schools.

Therefore, it can be argued that school principal behaviors are central to successful implementation of ICT. Makhanu & Kamper, (2012) observed that successful implementation of ICT in schools depends on principal leadership role in managing change in his/her school. Implementation of ICT is becoming more important to schools and the success of such implementation is often due to presence of effective school leadership. The principal plays a critical role in taking positive actions that facilitates the adequate resources of implementation of ICT and coping with technology change in the schools.

Some the above discussion the implementation of ICT in secondary schools principals has numerous leadership roles, including management and organization of school curriculum, motivation and management of human resources in school, control and management of school finances, maintenance and management of school facilities including ICT infrastructure. In other words, school principals are the chief accounting officers in their schools (Laaria, 2013).

2.2.5. Benefits of Implementation of ICT in Education

Technology in education is intended to improve education over what it would be without technology. According to Reeves (1998) technology in education have various positive impacts on the teaching-learning activities. Some of the claimed benefits are easy to access course materials, improve students' motivations writing, promote wide participation and make

subjects easier to learn. In addition, with proper structuring it can become easier to monitor and maintain student work while also quickly gauging modifications to the instruction necessary to enhance student learning.

According to Odera (2011) Information and communication technology has a direct role to play in education and if used in the right way can bring many benefits to the classroom as well as education and training processes in general. Its use will provide new opportunities for teaching and learning, including offering opportunities for more students centered teaching, opportunities to teach more learners, greater opportunity for teacher-teacher and student-students communication and collaboration, greater opportunities, greater opportunities for multiple technologies delivered by teachers, creating greater enthusiasm for learning amongst students, and offering access to a wide range of courses. So that, ICTs allow people, anywhere in the world, to access information and knowledge almost instantaneously individuals, organizations and communities should benefit from access to knowledge and information.

2.3. School Leadership's Vision and Strategic Planning in Implementation of ICT in Secondary Schools

For successful integration of ICT in teaching and learning there has to be proper planning at the school level. This is because the school is expected to provide the necessary ICT resources for the teachers and the students to use. An ICT integration plan provides a detailed blueprint of the steps and methods needed to translate the school ICT vision into reality (Afshari, 2009).A plan is a guide to action not a substitute for it; the existence of a written ICT plan and strategy does not guarantee the comprehensive use of ICT in schools, nor does the absence of an ICT plan necessarily equate to the lack of ICT integration in a given school (Bryderup and Kowalski 2002 cited by Mingaine).

In secondary schools leadership should have clear visions and strategic plans for implementing ICT in their schools. Without clear vision and strategic plan secondary schools leaders, in implementation of ICT, it is likely that there would be poor coordination of activities and only enthusiast teachers would battle to implement it to support learning (Laaria, 2013). In secondary schools leadership vision and strategic plans for ICT should be driven by pedagogical and not technological considerations. Researchers warn of dangers of technological considerations where features of ICT drive decisions about its implementation in schools without pedagogical considerations. Technological considerations without a clear

vision of how technology would affect learners have a danger of putting more effort on provision of ICT infrastructure rather than how ICT would help learners to learn. Technological thinking could be reduced through demonstrating clear visions, stranded with pedagogical understanding, and reflected in well constructed, short-term and long-term, strategic plans (Grono, 2010).

The essential aspect of being the school leader is about dedication to set visions, to work and cooperate with others in bringing these visions to realization. Schools try to implement ICT into their operations to improve students' learning by presenting flexible learning opportunities and improving secondary schools activities. Not only ICT improves student's learning but the whole school community requires being ICT competent. ICT in secondary schools is emerging as an essential factor for secondary schools to operate effectively and efficiently as organizations and as a teaching and learning tool within the school community. Further, secondary schools leader could use ICT as tool for monitoring the situation in his/her in the school. Thus, ICT could be used as a tool of management in the Secondary Schools.

2.4. School Leadership's Role Modeling in Implementation of ICT in Secondary School

In secondary schools leaders are essential to creating a vision that empowers school community in setting to work cooperatively toward achieving instructional goals. Gurr (2010) observed that school leaders who are visionary, imaginative and inspirational helps to develop same qualities to his/her staff in the school. School leader's visions of implementing ICT in secondary schools are realized through incorporating, developing and supporting visions of other secondary schools members. In order to effectively perform duties of secondary schools leadership, in secondary schools leader's roles should be geared in using ICT in secondary schools. They should demonstrate skills of using ICT in their day to day activities in secondary schools. They should be prepared to learn how to use ICT, but as learners, their understanding and competence in ICT need not be so complicated. Basic skills in using ICT are desirable.

However, Bishop (2012) found that some school leaders' were not competence in basic ICT skills, though Gurr (2010) insists that present school leader should demonstrate some basic understanding of ICT in order to perform their duties effectively and inspire the school

community to implement it. School leaders, and especially the principal, are important in setting the culture of the school.

School leadership that has a shared sense of purpose and is clearly supportive of ICT is required to foster, maintain and develop a school culture that enables the integration of ICT into teaching and learning. Implementation of ICT technology involves the application of knowledge, adequate resource materials, access of tools and skills in designing, producing and using products and also it is used to extend human capability to control and modify natural and human made environments (Raizen et al, 1995). In other words, technology offers new capabilities that lead to significant changes in the organization. It shows the new way of distributing information throughout the organization

By using ICT, in secondary schools leader demonstrates to school community that its implementation is important and he/she acts as a role model. Researchers have found that secondary schools leadership ICT role model for schools community is important in implementation of ICT programs in school (Gurr, 2010, Leach, 2011, Grono, 2010). Grono, (2010) argued that school leaders' who demonstrated high standards of profession modeled expectations of staff and students to perform their best. Though SS leader acts as a successful role model to school community during the process of implementing ICT in secondary schools, he/she should not be seen as the expert in ICT use.

In secondary schools leader acts as a link between staff who are ICT expect and the school. Schiller (2011) observed that school leader could act on advice from staff members competent in ICT during its implementation. The author asserts that it is sensible secondary schools leader to seek assistance from other members of staff when making plans on how to implement ICT. In secondary schools leaders demonstrating to be ICT experts while their ICT ability is not of high standards, would be unable to effectively implement ICT in their schools. They should model staff competent in ICT to take charge in its implementation, while they supervise the process. Leadership practice, as Spillane (2005) explained as an outcome of the interactions among the leaders to achieve their joint goals and visions, taking into account the context of the schools. Hence, a distributed leadership viewpoint seeks to understand the interactions between the leaders and their followers to implementing ICT.

Grono (2010) argues that school leader who delegate some responsibilities of leadership to

his/her subordinates helps create in secondary schools environment where all members participate in decision making. This way, in secondary schools leader empowers his/her staff to develop, create and own shared positive visions that are important in implementation of ICT. Therefore, it can be argued that encouraging others to lead imposes greater responsibility and initiatives on them.

2.5. School Leadership in the Provision of ICT in Secondary Schools

School leaders play an important role in providing an infrastructure that is conducive to the use of educational technologies. Technology infrastructure includes hardware, software, and resources. Hardware refers to physical structure and equipment like computer networks, computers, projectors, and printers; software refers to computer programs that can be used as generic tools to facilitate administration or learning, for example, learning management systems, spreadsheet or database; and resources which contain information that could facilitate learning, for example, a tutorial program or an online encyclopedia. It is important that the provision of infrastructure is equitable to all staff and students, rather than to a selected group of people (Yee, 2000).

Technology is a cross-cutting resource that should be seen as a sustainable, accessible, and valuable means of supporting efforts to improve teaching-learning, school operations, and the education sector as a whole. So that technology integration takes time; time to learn about the innovation, time to be adequately prepared to use it. In this respect, principals play an important role and apply different strategies such as change agent, lifelong learner, principal supporter, and resource provider to implement ICT in the schools (Han, 2002).

Lack of ICT infrastructure is a serious obstacle to implementation of ICT in secondary schools. Without these infrastructures would not be able to implement ICT to secondary schools to levels expected or required. ICT infrastructure planning and investments are therefore critical issue. Key in helping secondary schools implement ICT is careful construction of a sustainable infrastructure that could assist to turn the situation around. In secondary schools leaders are the custodians of in secondary schools infrastructure,including ICT infrastructure.ICT the change agent in education, so that school leader to implement effectively with access of adequate resources. In the developing world, ICTs are used largely to increase access to and improve the relevance, adequate resource and in the quality of education. ICTs have demonstrated potential to increase the options, access, participation, and

achievement for all students. The unprecedented speed and general availability of diverse and relevant information due to ICT, extends educational opportunities to the marginalized and vulnerable groups, among the other disadvantaged (Haddad, 2002).

In secondary schools leaders are concerned with providing adequate and relevant in secondary schools ICT infrastructure. It is the responsibility of in secondary schools leader to make provisions of acquiring up to-date ICT infrastructure. In secondary schools with up to-date ICT infrastructure encourage faster information sharing thereby creating less hierarchical and flexible organization, hence a more flexible learning environment within the in secondary schools. In secondary schools leaders, who recognize this, understand that, there in secondary schools could be more efficient and transformative (Grono, 2010).

On this regard, in secondary schools leaders should be in the forefront in championing implementation of ICT by involving all stakeholders in provision of ICT infrastructure in their in secondary schools. They should actively lobby development partners and government to support implementation of ICT in their secondary schools. It is the responsibility of secondary schools leaders to inform parents about expenses and importance of implementing ICT in secondary schools in order to encourage them to support the programs. Delegation of leadership, common decision making, provision of up to-date ICT infrastructure and professional development, motivates and empowers teachers. By empowering teachers to own the process, the school leader set educational goals for implementation of ICT in school by involving them in championing, promotion and development of ICT. This means that school leader leads the implementation of ICT in secondary schools without himself/herself being ICT expert.This way teachers' gets recognition for success, giving satisfaction and possession of directions and decisions arrived in secondary schools**.** The distribution of power develops a learning school that encourages people at all levels to learn from their work, the organization values learning so that it can transform itself through dealing with change.

By providing adequate resources and up to-date ICT infrastructure, there is likelihood of staff professional development where staff learns as they use them in the process of teaching in secondary schools. This creates a good working in secondary schools environment where staff and students feel valued and cared for (Hennessy, 2010).

Provision of up to-date ICT infrastructure in secondary schools would be a motivation for school staff not competent on ICT skills to train on them. Grono (2010) the same author, observed that, the method of providing ICT infrastructure before staff undergoes training is becoming a popular approach in implementation of ICT in secondary schools. More in secondary schools are increasing ICT infrastructure without sending their staff for in-service courses, such as supplying computers to classrooms so teachers are encouraged to try them. Through regular and consistent use of ICT, secondary schools leaders who are not competent in its use could develop the required skills. In secondary schools leaders should ensure that their offices have a computer and indeed they access it regularly, this way, they can learn more about the technology and therefore be able to encourage their secondary schools to adapt it.

The school with an ICT infrastructure allows for networked communities, promoting fast pace communication and information sharing. This allows for a less hierarchical and more flexible organization, creating a new pattern of learning in schools. Principals, who recognize this, know it can make the school more efficient and transformative (Haughey, 2006). In provision of quality of education, the use of information and communication technologies (ICT) in education is no longer optional. A substantial change in society and individuals has occurred thanks to development in ICT, its penetration into the structures of production, knowledge management, communication and culture, the demand for new skills and competencies. In addition, there has been a change in ways of approaching and understanding the world and development of new industries. For all these reasons, schools, regions and countries are compelled to develop new initiatives that incorporate ICT tools in teaching and learning, so that education systems can succeed in linking the new demands of the knowledge society with the new characteristics of learners (Kozma, 2005).

2.6. Studies on School Leadership Supporting Implementation of ICT in Secondary School

Researchers have argued that school leadership is a stronger predictor of teachers' use of ICT in teaching (Anderson & Dexter, 2010, Gurr, 2010, Bishop, 2012 cited by Mingaine).In secondary schools leader who implements ICT programs and shares a common vision with teachers stimulates them to use ICT in school (Yee, 2000). For effective implementation of ICT in secondary schools there should be a strong secondary schools leadership to drive a

well coordinated and designed ICT plans. Due to this, implementation of ICT in secondary schools to need supporting with access of adequate resources, Hence, a leader should facilitate conditions and events that create a positive environment for technology adoption such as training and education and organizational technical support. ICT related technologies are being deployed to support learning at different levels of the educational system (Getahun, 2006).

In secondary schools leader should share ideas with other staff while focusing on implementation of ICT in schools to access, relevance and quality of education. Ethiopia has witnessed the development of ICTs in various sectors over the last decade including education. Overcoming all constraints ICT is likely to penetrate all schools and colleges of the country. Hence, urgent attention should be given to train teachers and professionals to support ICT related teaching models (Sanjoy, 2013). A new technology such as ICT is developed as an aid to helping to solve certain types of problems that people seem to be important. Education was not the driving problem that led to the development of ICT. However, ICT has confirmed to be a powerful aid in addressing a wide range of problems in education and in many other fields (Moursund).

School leaders should recognize that implementation of ICT in schools, is a necessary transformation of how teaching and learning is done, and a chance to attract new students looking for new and better learning environment. School leaders should play a leading role in promoting teachers' attitudes towards implementation of ICT in school.

Based on research studies, a wide range of factors has been found to affect technology integration in the school. Of these, leadership role of principal is the single most important factor affecting the successful integration of technology (Byrom & Bingham, 2001). School principals have a major responsibility for initiating and implementing school change through the use of ICT and therefore facilitate complex decisions about integration of ICT into learning and teaching (Schiller, 2003).

Although the role of the principal in supporting ICT integration is critical, much of the ICT literature has tended to overlook the role of the principal (Michael, 1998) and the principal's current technology leadership capabilities and the necessary role the principal must play as technology leader. This gap in the research is rather strange because many studies relating to

school effectiveness, school improvement and change show that principals play an important role in creating successful change in schools (Schiller, 2003). However, little is known about the use of ICT by principals, their perceived computer competence, and their leadership style that they should play in the area of technology leadership. Therefore there is a need to investigate the role the principal should play in the area of technology leadership. Sweeney (2005) described the qualities of an effective leader as the ability to lead change, a clear vision and being ICT proficient.

A vision with an ICT focus on teaching and learning can create enthusiasm within the community it puts the students at the centre of learning. The ICT leader as the expert supplies the principal with advice on ICT. The principal, with the support of the ICT leader and school community, can develop an ICT vision and e-Learning plan, aimed at developing a sustainable direction for ICT in teaching and learning, administration and business of the school Organization (Mark, 2007).

To be able to implement ICT in school effectively secondary schools leader should be able to set goals, organize, manage, monitor and build relationships with other members of secondary schools community. He/she should be people centered who is able to model standards and practices consistent with culture of the secondary schools. Grono (2010) argued that transformational school leader should be a person having ideas for secondary schools that are allied to the school's standards. The same author notes that, these are collective ideas that uplift teachers' and students' excitements, aspirations, provides principles for the secondary schools and allows school community to work together. In secondary schools leader who is able to build and convey these ideas in form of an essential vision in his/her secondary schools displays an important leadership characteristic.

2.7. Situation of School Leadership Challenges in Implementation of ICT in Secondary Schools

Requirements for accountability in managing schools and meeting the needs of all students and teachers, coupled with demand of a digital society require a change in the way schools are managed. Some school leaders are committed to implementing needed changes.They understand the potential and role of ICT, when it is coupled with a focus on learning, for developing a capacity for relevance change, while others do not.

School leaders who are not ready for ICT leadership transformation put a lot of effort to acquire ICT infrastructure. But when they provide them, very few, if any, use them in meaningful way; therefore lack the essential visions and knowledge to lead implementation of ICT in their schools. As well as providing the needed ICT infrastructure, School leaders should focus on how infrastructure affects teaching and learning in their school. To achieve this, school leaders should recognize that, the idea to implement ICT in schools is not only for school use, but also a transformation of teaching and learning (Afshari, 2012). According to Langimia (2009), experiences many challenges in the implementation of ICT in schools due to the fact that it lags behind in information superhighway technology. In terms of telecommunication infrastructure expansion, development of fixed telephone network throughout has been expectations. Therefore many schools lack fixed telephone networks, which is important for connectivity.

Implementation aims at utilizing ICT to support teaching and learning in school in order to achieve enhanced education outcomes. ICT could be the answer to this problem, where the few teachers available could share information with thousands of students in schools. School leaders should be aware of the potential of ICT to bridge the gap of shortage of teachers and other supporting staff in their school. School leaders are either passive or actually against implementation of ICT, mainly due to cost. They perceive ICT as costly devices that would consume limit funds that they have, as well as distract teacher's time, without evident of short-term returns.

Being visionary and strategic planners, role models and custodian of school ICT infrastructure, school leaders should have interest, commit and champion implementation of ICT in their schools. To achieve this, school leaders should involve staff through distributive leadership style where some leadership responsibilities are delegating to others. They should lead transformation of the school through being active, passionate and enthusiastic. They should be concern and involved in the whole process of implementing ICT in school, through delegating responsibilities, sharing decision making with other teachers, promoting staff professional development and maintaining clear vision of the school. They should be people centered, creative thinkers, dedicated to performance, upholding professionalism and standards in the school (Laaria, 2013).

In secondary schools leader's vision sets goals to be attained during implementation of ICT. Sweeney (2012) outlines the qualities of a successful secondary schools leader as the capability to lead change with clear vision and ICT skills. A vision that focuses in the implementation of ICT in secondary schools creates interest within the secondary schools that it cares about students learning. A vision for implementation of ICT in secondary schools should focus on:- Planning, organizing and funding, Staff development and ICT infrastructure implementation, improving access and equity, Maintenance and sustainability of ICT infrastructure in secondary schools, Legal and moral issues of ICT in secondary schools, Education theory, pedagogy and curriculum improvement and General schools administration. Implementing ICT focuses on four key themes relating to the effectiveness of ICT in schools leadership and coordination, teaching and learning, managing infrastructure and measuring success. Key to implementing ICT will be the leadership provided by school senior managers in defining a strategy that will achieve the school's vision for ICT. The effective management of the schools' ICT strategy and its coordination underpins the importance of the role of the ICT Coordinator in secondary schools. To be able to lead implementation of ICT in school, school leaders should be able to apply basic ICT skills in their day to day management of their school. To this end, it can be that all school leaders consider using ICT in their day-to-day activities of running their schools. ICT teachers and managerial skills should be incorporated to training of school leaders. Implementation of technology is becoming more important to schools and success of such implementation is often due to presence of effective school leadership.

CHAPTER THREE

3. THE RESEARCH DESIGN AND METHODOLGY

3.1. The Research Design

Research designs were plans and procedures for research that span the decisions from broad assumptions to detailing methods of data collection and analysis (Creswell, 2009). In this study a descriptive survey was employed with the intention to getting the general picture of the current challenges of school leaders "in the implementing information communication technology" in the SSs of Jimma zone. In supporting this idea, Abiy et al., (2009) suggested that descriptive survey was used to gathering data at a particular point in time with the intention of describing the nature of existing conditions or identifying standards against which existing conditions were comparing or determining the relationships that existing between specific events.

Moreover, the descriptive survey was more effective in assessing the leadership challenges in the implementation ICT in secondary schools current practices in its implementation of ICT in secondary schools of Jimma zone. The questionnaires, interviews and observation were used to collected both quantitative and qualitative data. Given the time constraints and the financial resources available, the researcher was decided to use the descriptive survey research design with cross sectional descriptive survey.

3.2. Research Methodology

The methods employed in this research were both quantitative and qualitative methods. Since the research design was descriptive survey method, it more emphasizing quantitative research approach. Using multistage approaches could capitalizing on the strengths of each approach and counterbalance their different weaknesses and providing a better understanding of research problems than either approach alone. It were also provided more comprehensive answering to research questions going beyond the limitations of a single approach (Creed, et al., 2004). It was also practical in the sense that the researcher was free to use all methods possible to address a research problem (Creswell, 2006). The study were conducted in Jimma zone, six districts (Limu Seka,Mana, Gumay,Kersa,Tiro Afeta and Shabe Sombo) and from each existing secondary schools were selecting. The study was carried out through random sample techniques selection used lottery methods each district.

3.3. Data Sources, Population and Study Area

3.3.1. Source of Data

In this study, primary data sources were employed to obtained reliable information about leadership challenges implementing information communication technology secondary schools in Jimma zone.The major sources of primary data were from information communication technology teachers, principals, external supervisors and teachers in sample secondary schools. Moreover, observation was used as a primary data.

3.3.2. The Study Population

A study population was the entire group of people to which a researcher intends the results of a study to apply (Aron & Coups, 2008). Therefore, the population of the study were all 62 secondary schools (9th- 10th) in the Jimma zone specifically, secondary schools teachers (1176), principals (62),secondary schools external supervisors (18), secondary schools vice principals (46).

The target populations of the study were the availability of secondary schools ICT teachers, principals, supervisors, and teachers in existing secondary schools. In this study the researcher believes they were the right source of information on the implementation of information communication technology program in Jimma zone south western, Ethiopia.

3.3.3. The Study Area Description

3.3.3.1. Location and Demographic Feature

The study were conducted Limu Seka,Mana,Kersa,Gumay,Tiro Afeta and Shabe Sombo districts of Jimma zone south western Ethiopia. They were 109km north, 20km west and 18km east, 102km west, 90km east 60km south of Jimma zonal administration town respectively. The zone has been encompasses 62 secondary schools, 15 preparatory and 1063 primary schools. The teachers in secondary schools male 994 female 182 total 1176 and preparatory teachers male 184 female 17 total 201.The districts were encompasses 22 secondary schools and 6 preparatory. The total estimated populations of six districts are male 848,465 female 829,856 total 1,678,321(CSA, 2007).

3.4. Sample and Sampling Techniques

To obtain the necessary sample units, multistage sampling technique were employed. According to Abiyi *et al*., (2009:63) multistage sampling technique was used when a single appropriate sampling technique did not exist or couldn't be obtained and it uses a collection of preexisting units or clusters to stand in for a sampling frame. Accordingly, first from the total of 62 secondary schools in the zone 22 (35%) were taken by taking into account the manageability within the given time and resources. The pre- identified clusters were Agaro cluster, Sokoru cluster, Limu cluster and Seka cluster this classification has doing in agreement of Zone administrative and Education Offices to make the monitoring and controlling system of activities easy in the zone.

Concerning the location and distribution of the 62 secondary schools, 18 secondary schools in Agaro cluster, 20 secondary schools in the Sokoru cluster 07 secondary schools Seka cluster and 17 secondary schools in Limu cluster. To have been a representative sample school from each cluster,08 secondary schools from Agaro cluster, 04 schools from Limu cluster and 03 secondary schools from Seka cluster and 07 secondary schools from sokoru cluster was selected by stratifying random sampling techniques.Finally,schools were selected from the districts by available sampling technique. Accordingly, Mana, Goma, Agaro Town,Gera, Gumay, Sigmo and Santama from Agaro cluster, Kersa, Dedo, Tiro Afeta, Nada and Sokoru from Sokoru cluster Nono Benja ,Limu Seka,Limu Kosa and Chora Botor from Limu cluster Seka Chokorsa and Shabe Sombo from Seka cluster were selected.

In this Zone there were be 17 districts and 01 administrative town, with total of 62 general secondary schools. For study 6 districts were selecting from cluster representative, namely, from Limu cluster Limu Seka from Agaro cluster Gumay and Mana,from Sokoru cluster Kersa and Tiro Afeta, and from Seka cluster Shabe Sombo were selected by used simple random sampling techniques which was the best way to getting representative samples and to have been every subject equal chance to be Selected. In the selected districts there were be 22 secondary schools.

Therefore, the total sample SSs selected from the each four clusters was being 22. The total number of teachers in the 22 sample schools were be 492 and from this, 285(58%) were taken as a sample by Daniel (1999) formula considering that it were be enough to be representative.

By using this formula to determined the sample required, see appendix C-1

The number of teachers in each school varying due to differences in the number of students. Thus making proportional allocation of teachers in each school, equalize the representativeness of the schools have been larger as well as the smaller number of teachers. Therefore, to determined the sample size of teachers to be drawn from each selected school, the student researcher used the stratified formula of William (1977:75), see appendix C-2

By using the above stratifyied formula 41 teachers from Limu Seka, 59 teachers from Manna, 32 teachers from Gumay, 55 teachers from Kersa, 54 teachers from Tiro Afeta, 44 teachers from Shabe Sombo, and totally 285 teachers were taken as sample size.

After determined the proportional allocation of teachers to each school, the student researcher employed a simple random sampling technique to given equal chances for every sample elements selected from each school. Moreover, 22 school principals, 12 vice principals 6 external supervisors were be selected by available sampling techniques. Supporting this idea Abiyi et al., (2009:64) suggested that the purposive sampling technique was typically using when focusing on a limiting number of informants and who selecting strategically have been in-depth information to given optimal insight into an issued. In general, 265 teachers, 22 school principals, 12 vice principals, 6 external supervisors, and total 305 respondents were be included in the sample respondents.

Table 1.Population and sample size of respondents

Schools	Teachers			Principals and vice principals			External supervisor		
	population	sample	%	population	sample	%	population	sample	%
Yebu	54	32	59	03	03	100	01	01	100
Haro	10	06	60	01	01	100			
Doyo	13	08	61	01	01	100			
Belida	24	13	54	02	02	100			
Serbo	56	32	57	03	03	100	1	1	100

Dibubijit	10	06	60	01	1	100			
Bulbul	18	10	55	01	01	100			
keragora	11	7	63	01	01	100			
Toba	31	18	58	02	02	100	1	1	100
Yach	17	07	41	01	01	100			
Chando	10	07	70	01	01	100			
Dimitu	31	18	58	02	02	100	1	1	100
Ako	30	18	60	01	01	100			
Chora	15	9	60	01	01				
Gebara	17	9	52	01	01				
H/Shebe	49	28	57	03	03	100	1	1	100
Angecha	17	10	58	01	01	100			
Chokorsa	10	06	60	01	01	100			
Atinago	21	12	57	02	02	100	1	1	100
Koma	23	13	56	01	01	100			
Seka	13	08	61	01	01	100			
Dame	14	08	57	01	01	100			
Total	492	285	100	34	34	100			
Sample techniques	Multi Stage			Available			Available		

3.5. Data Collection Instruments

An instrument was a test or tool used for data collection. Three instruments were be used in the process of gathering the necessary data for the study. These were questionnaire, interview and observation. According to Cresswell (2003, p.62), these instruments were be used because of the need to collected adequate data and for triangulation purpose. Triangular technique is an attempt to map out, or explain more fully, the richness and complexity of human behavior by studying it from more than one standpoint and, in so doing, by making use of both quantitative and qualitative data. Therefore, employed multiple data collection instruments help the researcher to combined, strengthen and amend some of the inadequacies of the data and for triangulating it.

3.5.1. Questionnaires

Questionnaires were being the main instruments to collected information from different groups (teachers, school principals, vice principals and supervisor's).The questionnaires mainly consisting of close-ended and open-ended items. Separate questionnaires were being preparing for school principals, curriculum expert, teachers development program and school teachers. The close-ended part of the questionnaire used in this study was being a Likert Scale questionnaire. Likert scale requires an individual to respond to a series of statements by

indicating whether the standards are apply , strongly agree (5), agree (4), undecided (3) disagree(2) and strongly disagree(1). Each response was being assigned a point value, and an individual's scoring were be determined by adding the point values of all the statements. The questionnaires were being developed bases on this type of scale, which is a type of scale that was used to measure attitudes. An attitude scale is an instrument that measures what an individual believes, perceives, or feels about self, others, activities, institutions, or situations (Anderson, 1980).

The questionnaire fill by the participants contains four parts. The questionnaires were designed to obtain information on the leadership challenges of implementation information communication technology in secondary school depending on the constraints of ICT, the problems on the leadership challenges implementation of ICT in SS and open-ended questionnaires at the ended. The first part of the questionnaires prepared for the school teachers, ICT teachers, principals and vice principals were be used to collected information about the commitment of school leadership in the implementation of ICT, use of by school leadership, access of ICT, and adequate resources of ICT in secondary schools in sampling schools.

The first part of the questionnaire prepared for the school teachers were used to collect information about commitment of school leadership implementation of ICT in school and school leadership with stakeholder support ICT program in school, for lead and manage school operations and adequate resources on ICT, leadership in school sampling schools. This part of the questionnaire was comprised of 20 items. The items were prepared in four points Likert scale ranging from strongly agree (5) to strongly disagree (1) and all the items were be positively state.

The second part of the questionnaire contains problems on the interest use of ICT leadership challenges in the implementation of IC. This part of the questionnaire were prepared in five points Likert ranking scale type ranged from always (5) and never (0) and it was comprised of 11 items which were be positively state. And also properly implementation computers in the school 07 questionnaire in five points Likert scale from strongly agree (5) and strongly disagree(1),plasma television implementation in the school ten questionnaire the by the Likert scale, ICT facilitators in the school 5questionnair and resources of budget 3 questionnaire by yes or no stated. The third part of the questionnaire contains open-ended questions with items

7 which were used to identify additional problems facing by the school leadership that influence the implementation of ICT in the secondary schools interest and commitment of school leadership in the implementation in school the ranking of the problems.

The forth part of questionnaire interview that identify the additional information were got from principals and external supervisors 7 item. Finally, the researchers were used observation checklist the item 06 on properly implementation of ICT in the school and challenges to school leaders.

3.5.2. Interviews

Interview was used to generating additional information from the participants on issues relating to the study. To obtain standardizing and comparable data from each subject, interview questionnaire, with items for each participant, were developed by the researcher and interview was held to collect information about the leadership challenges implementation information communication technology in secondary schools. This was target to acquiring information from the school principals (one from each school), vice principals' and external supervisors.

The major issues that was raised in the interview with the external supervisor and school principals were: about their conception on the implementation of ICT in secondary school, general support given on fulfill infrastructure, adequate resource on ICT the implementation of high quality standards base on teaching learning process, stakeholders in students learning and decision making, staff professional development activities organizing and conducting, how resources were allocating and managing, and about what major challenges they have been facing to implement ICT and what solutions they suggest for the effectiveness of the implementation ICT of the school.

3.5.3. Observation

These were defining as a research technique for the objective, systematic, and quantitative description of manifest content of communications. It is a technique for making inferences by objectively and systematically identifying specifying characteristics of messages. It could be a useful technique for allowing one to discover and describing the focus of individual, group, institutional or social attention to the access, infrastructure of ICT in the schools and adequate resources in the sampling SSs. For triangulation purpose the school vision and goals on ICT

implementation in school; adequate resources allocation in different departments; reports analysis ICT implementation; documents on rules and regulations to staff, students and parents; materials on instructional practices on ICT implementation. According to Best and Kehan, (2005) this could provide primary evidence that enable to discover the prevailing practices.

Accordingly, observation check list with six (6) items were prepared to collect the data on the given variables. It was designed to analyze whether the school principals work according to the leadership challenges in the implementation of ICT in secondary school to apply them in infrastructure of ICT, access of adequate resource, data analysis administration of school, student's achievement and to ensure quality education in the school. The check list was mainly used as inventory format only to check the availability of the above documents or materials in the school. The observation check list was totally carried out by the researcher himself.

3.6. Method of Data Analysis and Interpretation

The analyzed of the data in this study were conducted just at the beginning of data collection and were finalizing after data collection. The data were collected and organized basis on the research questions. Besides, discussions and interpretations were made, focusing on the obtaining data. Documents were referring in the analyzing. Depending on the nature of the basic questions and variables treating, different statistical techniques were employed on the basis of the nature of the data collected. Consequently, the data collect from the respondents were analyzing quantitatively and qualitatively.In analyzing the quantitative data,mean scores, standard deviations and rank was used for analyzing the questionnaires with five point Likert scales to examine the leadership challenges implementation of information communication technology in Jimma zone in secondary school. The scale was interpreted as strongly agree (5) to strongly disagree (1). This system for the purpose of easy analyzing and interpretation data collected. After data collected, the researcher clean and code all the data obtains used the questionnaires and enter it in the computer for analyzing. This was used the (SPSS) Statistical Package for the Social Sciences version 20 software. Data obtains were analyzed, used both qualitative and quantitative techniques. Quantitative data were analyzing used descriptive statistics, e.g. frequency counts and percentages. Qualitative data was analyzing thematically

in line with the objective of the study. The results were reported in summary form used frequency tables.

Quantitative Data: - With regard to the quantitative data, responses were categorized and frequencies were tallied. Percentage and frequency counts were used to analyze the characteristics of the population as they help to determine the relative standing of the respondents. The items in the questionnaires were presented in tables according to their conceptual similarities. The scores of each item were organized, statistically compiled and imported into SPSS 20 to obtain the mean value of each item. Likert Scale was employed to identify to what extent the respondents agree or disagree.

Qualitative Data:-The data collected from interviews, open ended question of the questionnaire and observation were analyzed and interpreted qualitatively. The handwritten notes were transcribed; categorized and compiled together into themes. The result of open-ended questions, and observation were also summarized and organized by related category. Finally, the overall course of the study was summarized with findings, conclusions, and some possible recommendations.

3.7. Procedures of Data Collection

To answer the research questions raised, to confirm, cross-validate or corroborate findings within a study student researcher passed through a series of data gathering procedures. The expected relevant data were gathered by using questionnaires, interview and observation analysis. Having letters of authorization from Jimma University, Jimma Zone education office and districts education office the researcher was directly lead to each sampled school according to the schedule outlined. Then, the student researcher in every step followed all important ethical procedures until all required data collected and completed from intended sampled schools through.

3.8. Validity and Reliability

Checking the validity and reliability of data collected instruments before provided for the actual study subject is the core to assure the quality of the data (Yalew, 1998). To ensure validity of instruments, the instruments were developed under close guidance of the advisors and, also a pilot study was carried out on 20 teachers of Atinago secondary school to pre-test the instrument. The pilot test were provided an advance opportunity for the investigator to

check the questionnaires and to minimize errors due to improper design of instruments, such as problem of wording or sequence (Adams et al., 2007).After the dispatched questionnaires "were returned, the necessary modification on items and complete removal and replacement of unclear questions were done. Additionally the reliability of the instrument were be measured by using a Cronbach alpha test. A reliability test is performed to check the consistency and accuracy of the measurement scales. As explained by Drost (2004), if the result of Cronbachs coefficient alpha is 0.7 and above it is considered to be satisfactory, indicating questions in each construct are measuring a similar concept.

Table 2. Reliability test results with cronbach's alpha

No	Variables	No of Items	Cranach Alpha
1	Commitment of leadership in the implementation of ICT	20	0.765
2	Leadership uses ICT in the school for teaching-learning promote	11	0.678
3	School leaders properly implementation of computers in the school	07	0.784
4	Concerning for implementation of plasma television in the school	10	0.689
5	Concerning ICT facilitators in the school	04	0.705
6	On budget for ICT implementation in the school	03	0.687
	Average of reliability of result		0.718

3.9. Ethical Consideration

Research ethics refers to the type of agreement that the researcher enters into with his or her research participants. Ethical considerations play a role in all research studies and all researchers must be aware of and attend to the ethical considerations related to their studies. Therefore the student researcher has communicated all secondary schools legally and smoothly. The purpose of the study was clear and understandable for all participants. Any communication with the concern bodies were accomplished at their voluntarily agreement without harming and threatening the personal and institutional wellbeing. The identities of the respondent were keeping confidential

CHAPTER FOUR

4. PRESENTATIONS, ANALYSIS AND INTERPRETATION OF DATA

The purpose of this research was to investigate the "leadership challenging utilizing of ICT in secondary school program" in government secondary schools of Jimma Zone of the Oromia Regional State.

The response rate of the respondents was importance as it reflects the in-depth of the data gathered. Data required for the study was collected through the use of questionnaires, interview and observation. A total of 285 questionnaires were distributed to the ICT teachers, teachers, and school leaders. Out of the 285 questionnaires distributed, 265 (92.3%) were appropriately filled and returned. The rest 20 (7.7 %) were not returned. According to Mugenda (2003), a return of 50% and above is acceptable .Therefore, a return of 265 (92.3%) of the questionnaires was considered acceptable for this research.

To this end, a total of 285of questionnaires were distributed to 285 teachers. The returned questionnaires were 265 (92.29%). Moreover, 22 school principals, 6 external supervisors' representatives were interviewed. The data were analyzed in terms of the frequency and percentage, Mean scores.

Item scores for each category were arranged under five rating scales. The range of rating scales was strongly disagree (1) to strongly agree (5). For the purpose of analysis, the above 5 rank responses of the questionnaire were grouped and labeled into three categories i.e. disagree, undecided and agree. In categorizing the rating scales, the frequency and percentage results of strongly disagree and disagree were combined into disagree and the results of agree and strongly agree combined into agree.

Mean scores and standard deviation were calculated from the responses. For the purpose of easy analysis and interpretation, the mean values of each item and dimension were interpreted as follows. The extent of school leaders‟ role in implementing ICT programs with a mean value of 1.50- 2.49 as strongly disagree, 2.50-3.49 as disagree, 3.50-4.49 as agree and ≥4.50 a strongly agree level of performance. Finally, the data obtained from the open ended items of the questionnaire, interview, and observation were presented and analyzed qualitatively to

substantiate the data collected through the questionnaires. Thus, this chapter presents the analysis and interpretation of data.

4.1. Characteristics of Respondents

Overall, the chapter comprises of two major parts. The first part presents the characteristics of respondents in terms of sex, age, academic qualifications and service year. The second part deals with the results of findings from the data which were gathered through the questionnaire, interview and observation

Table 3. Characteristics of Respondents

No	Item	Respondents	
		No	%
1	Sex		
	Male	192	72.5
	Female	73	27.5
2	Age		
	20-30	88	33.2
	31-40	139	52.5
	41-50	34	12.8
	Above 50	04	1.5
3	Qualification		
	Certificate	01	**0**.4
	Level	16	**0**6
	Diploma	01	**0**.4
	First degree	243	91.5
	Second degree	4	1.5

As indicated on table 3 above, out of the 265 teachers' respondents 72.5% were males and 27.5% were females.This indicates that it needed work sex 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' teachers in the sector.Similarly all the interviewees participants22 (100%) principals, 6(100%) external supervisors and 12(54) vice principals of Jimma zone secondary schools were

males.Therefore,it is possible to conclude that females were under represented in the secondary schools leadership position in the secondary schools of Jimma zone. Hence there is a need to encourage females to the position of leadership position.

Moreover, as table 3 was evidence for their age, out of the total number of teachers, both 33.2% and 52.5% of teachers belonged to an age group of less than 40. This proves that the young generation has participated in the education sector. And the rest of the teachers were grouped above 40 years. This is important for experience sharing among the different ages.
Introduction of ICT in Ethiopia schools is relatively new phenomena; therefore the age of respondents is interest to understanding the challenges in its implementation of ICT. Age group 30 and below were 88(33.2%), 31-40 group were 139 (52.5%), and 41-50 were 34 (12.8%) while over 50 years were 04 (1.5%). Further analysis of age of the respondents revealed that the majority of ICT teachers were below the age of 30 years. This indicated that the teachers who had knowledge of ICT were relatively young meaning that the introduction of ICT studies to Ethiopia Tertiary/Universities was relatively recent and to extension in schools. The data implied that majority of the respondents had attained University education and had undergone some basic teaching skills that were necessary for management of schools and in extension implementation of ICT in education.

It was revealed that most of school leaders in were more than 30 years old; this was attributed to the fact that school leaders were appointed from the serving teachers who had shown desirable leadership qualities and had served the schools for some time. This indicated that most of them, without in-serve, had no considerable ICT knowledge that was necessary in the process of implementation of ICT programs in schools. Virtually all they were retired civil servants or business people who had been appointed to manage in the implementation of ICT in the school. Apart from these, the table also demonstrates that the education level of 0.4% level of certificate 0.4 level of diploma 06% of the teacher is level and 93.2% of the teachers is first degree and above. This illustrates that almost teachers with necessary qualification in the secondary school of the sample in Jimma zone.

Table 4.Experience and educational background of sample schools of teachers

No	Item	Respondents	
		No	%
1	Teaching experience (Years)		
	1-4	31	11.7
	5-8	60	22.6
	9-12	84	31.7
	13-16	77	29.1
	Above 16	13	4.9
2	Teachers Subject Area		
	Mathematics	35	13.2
	English	37	14
	ICT	21	7.9
	Physics	30	11.3
	Biology	35	12.8
	Chemistry	20	7.5
	History	20	7.5
	Amharic	13	4.9
	Civics and Ethical Education	16	06
	Geography	17	6.4
	Afan Oromo	14	5.3
	Sport Science	07	2.6

As table 4 above, shows that teaching experience is also another indicator 31.70% and 29.1% of the total had less than 15 years of experience. As outlined above, almost more than half of the teachers were young in the field of teaching. And the rest of the teachers had more than 15 years of experience. This shows that still a lot has to be done in order to make the teachers technology oriented. This is due to the fact that teachers with more years of experience may not use and encourage their students to exploit the benefits of ICTs. The number of years an individual as worked in any station is of importance in explaining the experience gained in working in that station. Many respondents had been in the same school for a long period of time. Those who had worked for less than 4 years were 33 (11.7%) while the rest had served the school for more than three years,232 (88.3%). This indicates that most of the respondents

had witnessed the major developments that had occurred in the school and therefore, one way or the other had experienced challenges in the implementation of ICT in their schools.

A survey conducted by the US Department of Education (1999) as cited in Caircros (2005), revealed that 47 percent of those who had been teaching for between four and nine years reported that they used computers or the internet a lot to get information and create instructional materials, compared with 35 percent of those who had been teaching for 15 or more years. And, of teachers with three or fewer years of experience (the newest of all), 31 percent reported feeling well prepared to use computers and the internet, compared with only 19 percent of those who had been teaching for 10 years or more.

According to the data gathered through interviews made with respondents held on April 11, 2010 also showed that nowadays having long years of experience in teaching becomes a drawback for using ICT. This is due to the fact that most teachers having more experiences are with a heavy background of unfriendliness to technology and assume that the technology would replace them. Thus, there were a big challenged in the implementations of ICT in the school of the sample in Jimma zone.

In addition to this, as it is indicated in the above table 4, teachers of both grade (i.e. Grade 9 and 10) have been involved in the study. And the subject matter of the teachers also illustrates that almost appropriate proportion of the teachers across their subject area were made to participate in the study. This allows the researcher to have the perceptions of the teachers concerning the implementation of information and communication technology in both grades leadership challenge in secondary school.

4.2. Concerning Commitment of School Leaders in the Implementation of ICT in the Secondary School

Table 5.Teachers' perception on commitment of leadership in the implementing of ICT in their school

No	Indicators	SD		DIA		UD		DA		SA	
		f	%	f	%	f	%	f	%	f	%
1	Are there external bodies that support implementing school ICT	54	20.4	50	18.9	34	12.8	64	24.2	63	23.8
2	School leaders implementing ICT in secondary school are realize through in corporate development and support	90	33.4	54	20.3	19	7.1	52	19.6	50	18.9
3	School leaders have communicate with school vision and share for students and staff implementing ICT in the school	85	32.1	45	16.9	16	06	64	24.1	55	20.8
4	School leaders have a major responsibility for implementing ICT in the school	74	27.9	30	11.3	21	8.1	83	31.1	57	21.5
5	School leaders have possess the necessary skills to ICT implementing in the school	60	22.6	51	19.2	28	10.5	73	27.5	53	20.0
6	School leaders provide the necessary adequate resource for implementing ICT	51	19.2	44	16.6	18	6.7	78	29.4	74	27.9
7	School leaders clear vision and strategic plan for implementation of ICT in the school	33	12.4	27	10.1	39	14.7	85	32.1	81	30.6
8	School leaders there was giving responsibility to staff that handle the implementation of ICT	47	17.7	40	15.1	22	8.3	81	33.2	75	28.3
9	School leaders has play a leading role in promoting teachers' attitudes towards implementation of ICT in the school	71	26.8	64	24.2	26	9.8	55	20.7	49	18.4
10	School leaders play an important role in providing necessary ICT provision for implementation ICT in the school	34	12.8	24	9.1	19	7.1	96	36.2	92	34.7
11	School leaders Involves leadership tasks in their school communally implementation of ICT in the school	43	12.2	50	18.8	27	10.1	71	26.8	74	27.9
12	School leaders Inspire the school community for implementing ICT in the school	36	13.8	54	20.3	24	9	78	29.4	73	27.5
13	School leaders are important for setting the culture of the school implementation of ICT in the school	40	15.1	34	12.8	27	10.1	87	32.8	77	29.0
14	School leaders have delegate some responsibility of leadership to his/her subordinates for implementation ICT in their school	57	23.3	51	19.2	20	7.5	58	21.9	79	29.8
15	School leaders Set educational goal for implementation ICT in the school	53	20	47	17.7	26	9.8	67	25.2	72	27.1
16	School leaders Facilitate, conditions and events create positive environment for implementation of ICT in the school	39	14.7	41	15.4	31	11.6	75	28.3	78	29.4
17	School leaders aware the potential gap of teachers in the implementation of ICT in the school	80	30	57	21.5	44	16.5	53	20	31	11.6

18	School leaders are committed to implementing changes of capacity in the implementation ICT in the school	49	18.5	58	21.8	24	9	84	31.6	50	18.8
19	School leaders develops leadership skills to others staff in implementation of ICT in the school	62	23.3	51	19.2	28	10.5	51	19.2	74	27.9
20	School leaders must develops positive attitudes for implementation of ICT in the school	38	14.3	53	20.0	19	7.1	65	24.5	90	34.0

SDI =strongly disagree UD=Undecided, DIS=disagree, AG=Agree and SA=strongly agree and f=frequency

With regard to item 1 of Table 5, teachers were asked to reflect their agreement on the extent to which school leaders support by external bodies to implementing ICT in the school effectively accordingly the majority 138(52.1%) of teachers did not accepted that the extent of external bodies to support the implementation of ICT in the school by rating 54 (20.4%), 50(18.9%) and 34(12.8%) strongly disagree, disagree and undecided respectively, and the rest of 64(24.2%) and 63(23.8%) of teachers agreed that school leaders supporting by external bodies agree and strongly agree respectively. This show that the external bodies to support the implementation of ICT by external bodies by moderate level. The interview with external supervisor in most of schools to support by external bodies like CAMARA PLC of education support school computers 81% of secondary school in sample size their computers got from this external body with minimum cost for per computers1080 ET birr. Therefore, one concludes that secondary school of Jimma zone support by external bodies.

As depicted in item 2 of Table 5 above, the majority 163(61.5%) of teachers were agreed that school leaders did not shared vision of implementing ICT by rating 90(34%),54(20.4%)and 19(7.1%) strongly disagree, disagree and undecided respectively, and the rest rating by 52(19.6%) and 50(18.8%) agree and strongly agree respectively in the school were realized through incorporating ,developing skills and supporting of the others ideas and inspirational can develop the qualities in others(Gurr, Drysdale and Mulford, 2006).To realize the vision principals needed to be competent users of ICT, but as learners of ICT the principal's ICT competencies and understanding not be as sophisticated as their vision Gurr (2000) and the rest 61(23.0) and 54(20.3) strongly disagree and disagree respectively rejected. Therefore, as result indicated school leaders in Jimma zone secondary school were not realize school vision in the implementation of ICT in the school and this might to challenges to school leaders in the implementation.

As revealed in item 3Table 5 above, the majority 146(55.1%) of teachers were agreed that school leaders communicated with school vision and shared in the implementation of ICT in the school. This show that above 55.0% of teachers agreed that on rejected at school level to implementing ICT in the school agreed on strongly disagree, disagree and undecided respectively and rest of 119(44.9%) of teachers agreed that school leaders communicating the vision and shared vision. The result of interview from 22 principal's, seven vice principals and six external supervisors of sample school revealed that almost none. Regarding to this idea literature revealed that school leaders communicate with the school leaders' vision for staff and students to implementing ICT a set of goals, and a vision for how education systems might be with the introduction of ICT and how students, teachers, parents, and the general population might benefit from its use in schools. Knowledge is growing at a fastest rate and the knowledge that we have become quickly obsolete unless we develop a capability for continuous learning. ICT was the main tools that realize this continuous learning (MOE, 2013).Therefore, from the result, it is possible to conclude that school leaders were not sufficiently communicating school vision and shared vision to implementing ICT in the school. But, the idea only on written materials and the idea not for all school community.The idea only by school leaders may confront a lot of challenges when put practice in the implementing ICT in the school.

As depicted in item 04 Table 05 above the majority 140 (52.8%) of teachers agreed that of school leaders were active responsibility implementing ICT in the school and the rest 125(47.2%) that means 74(27.9%),30(11.3%) and 21(8.1%) strongly disagree, disagree and undecided in the responsibility of school leaders in the school rejected respectively .Regarding to this idea the literature, Implementing ICT into schools is the responsibility of the school principal, they need to ensure that the best interests of the students are served through effective ICT infrastructure and staff professional development. The principals' responsible that the investment, financial and otherwise of ICT in the school is beneficial to the whole community of school. The principal's knowledge of ICT essential so that systems can be in place to make organizational processes more efficient (Gurr, 2000).

As indicated in item 5Table 5 above the majority 139(52.5%) of teachers agreed that school leaders did not able to clear idea to possess the necessary skills to plan ICT implementation

and basic skills in using ICT are desirable in the school strongly disagree, disagree and undecided rating by 60(22.6%), 51(19.2%) and 28(10.5%) school leaders did not capable of skill of implementation ICT in the school respectively and rest of 126(47.5%) of teachers agreed that school leaders of believed that school leaders were able to give necessary skills to plan and desirable skills at agree and strongly agree in the school by rating 73(27.5%)and 53(20.0%) respectively . Regarding to literature, in secondary school leader's vision sets goals to be attained during implementation of ICT. Sweeney (2012) outlines the qualities of a successful SS leader as the capability to lead change with clear vision and ICT skills. Therefore, it is possible to conclude that school leaders of secondary school of Jimma zone needed ICT skills and plan implementation of ICT program in the school.

As shown in item 6 Table 5 above, the majority 152(57.4%) of teachers agreed that school leaders were providing well in arranging adequate resource needed for school ICT implementation accepted by rating 78(29.4%) and 74(28%) strongly agree and agree respectively and the rest of 113(42.6) of teachers agreed that rating by 51(19.2%), 44 (16.6%) 18 (6.7%)strongly disagree, disagree and undecided that in regarded of arranging adequate resource, school leaders strongly disagree, disagree and undecided respectively. The result from open ended questions and interview also indicated that there was a few increment in financial resources in the secondary school. Supporting this idea one school principal informed that "currently there is an increment of the school budget than the previous few years because of school grant per student and result based aid budget (RBA)". Most of school external supervisor also explained that even though problems are still remaining with block grant budget of the school, currently there is a slight increase in financial resource due to an increment in school grant better than in few previous few years and the new budget depends on grade 10 students consecutive result achievement to increment in the school. Regarding resource, literature revealed that school ICT program can only lead to genuine and profound change ,if school have at least a minimum level of resources to work with and without such resources the school ICT program could become demotivating (MoE,2010). According to Betz (2011), implementation of ICT in schools would be successful when school leader supports, provide up- to-date provision, adequate professional development and support staff during its implementation. School leaders have responsibility of supervising implementation of ICT programs in the schools.

According to the data item 7Table 5 above, the majority 166(62.6%) of teachers believed that of school leaders were capable clear vision and strategic plan on implementing of ICT in the school, to achieving educational vision accepted by rating of agree by 85(32.1%) and 81 (30.5%) respectively agree. Whereas 33(12.4%) and 27(10.1%) and 39(14.7%) of teachers believed that school leaders did not perform clear vision and strategic plan on ICT implementation in the school by rating of strongly disagree, disagree and undecided respectively. Supporting this idea Cheng (2005) explained that an effective leaders is highly expected to have ability to create and communicate his/her organizational vision and the success of any organization depends on having a clear vision which is accepted by staff and others stakeholders. An ICT integration plan provides a detailed blueprint of the steps and methods needed to translate the school ICT vision into reality (Afshari, 2009). In secondary school leadership should have clear visions and strategic plans for implementing ICT in their schools. Without clear vision and strategic plan secondary school leaders, in implementation of ICT, it is likely that there would be poor coordination of activities and only enthusiast teachers would battle to implement it to support learning (Laaria, 2013).

As depicted in item 8Table 5 above, the majority 156(58.9%) of teachers agreed that school leaders were giving responsibility to staff that handle the implementation of ICT rating by agree and strongly agree by 81(30.6%)and 75(28.3%) respectively. Whereas 47(17.7%), 40(15.1%) and 22(8.3%) of teachers agreed that were school leaders were not giving responsibility how to handle ICT in the school rating by 19.6% and 13.2%and 8.3 strongly disagree, disagree and undecided respectively.Therefore, one conclude from the result school leaders in Jimma zone secondary school giving the responsibility to the staff how to handle ICT implementation in the school.

As shown in table 9 item 5 above, the majority 159(60%) of teachers agreed that school leaders play leading role in the promoting teachers' attitudes towards implementation of ICT by rating 71(26.8%),64(24.2%) and 26(9.8%)strongly disagree, disagree and undecided respectively, did not developing attitudes towards of teachers'. On other hand 55(20.7%) and 49(18.4%) of teachers agreed that school leaders rating by agree and strongly agree respectively promoting teachers' attitudes towards of ICT implementation in the school. This show that in the utilization of ICT in the school leaders was to play leaders role to develop

teachers' attitudes towards promoting for ICT implementation in the schools.Regarding this idea, based on research studies, a wide range of factors has been found to affect technology integration in the school.Leadership role of principal is the single most important factor affecting the successful integration of technology (Byrom & Bingham, 2001).Therefore, from the result, it is possible to conclude that secondary school leaders of Jimma zone were not play leading role in promoting teachers attitudes towards in the implementation of ICT in the secondary school and this may be leadership challenging to realize ICT implementation program in the school.

As indicated item 10 Table 5 above, the majority 188(70.9%) of teachers agreed that school leaders playing an important role in providing necessary ICT provision for implementation of ICT rating by 96(36.2%) and 92(34.7%) agree and strongly agree respectively. Whereas 34(12.8%) and 24(9.1%) and 19(7.1%) of teachers agreed that school leaders rating by strongly disagree and disagree and undecided on the playing the leading role in the implementation of ICT in the school. Regarding to literature, technology is a cross-cutting resource that should be seen as a sustainable, accessible, and valuable means of supporting efforts to improve teaching-learning, school operations, and the education sector as a whole. So that technology integration takes time; time to learn about the innovation, time to be adequately prepared to use it. In this respect, principals play an important role and apply different strategies such as change agent, lifelong learner, principal supporter, and resource provider to implement ICT in the schools (Han, 2002).Therefore, one could conclude that secondary school leaders in the Jimma zone were not sufficiently supported provision of ICT by higher administrative bodies such as regional education bureau, zonal education office and districts education office this might be challenging of school leadership.

With regard to item 11 on Table 5 above, the majority of teachers 145 (54.7%) of teachers agreed that school leaders involves leadership tasks in the school communally in the implementation of encourage teachers use of ICT at moderate rating by 71(26.8%) and 74(27.9%) respectively agreed and the rest 43(16.2%), 50(18.9%) and 27(10.1) of teachers agree that school leaders distributive leadership strongly disagree, disagree and undecided respectively. Leadership practice, as Spillane (2005) explained, is seen as an outcome of the interactions among the leaders to achieve their joint goals and visions, taking into account the

context of the schools. Hence, a distributed leadership viewpoint seeks to understand the interactions between the leaders and their followers to implementing ICT.

As can observed from item 12 Table 5 above, the majority 151(56.9%) of teachers agreed that school leaders were inspire the community for implementing ICT in the school rating by 78(29.4%) and73 (27.5%) agree and strongly agree respectively and the rest of 36(13.8%), 54(20.3%) and 24(9.1) of teachers agreed that school leaders strongly disagree, disagree and undecided respectively, did not inspire the school community in the school. A vision with an ICT focus on teaching and learning can create enthusiasm within the community it puts the students at the centre of learning. The ICT leader as the expert supplies the principal with advice on ICT. The principal, with the support of the ICT leader and school community, can develop an ICT vision and plan, aimed at developing a sustainable direction for ICT in teaching and learning, administration and business of the school Organization (Mark, 2007).
With regard to item 13 Table 5 above, the majority 164(61.9%) of teachers agreed that school leaders were important for setting the culture of the school implementation of ICT rating by 87(32.8%) and 77(29.0%) agree and strongly agree respectively and the rest 40(15.1%), 34(12.8%) and 27(10.1) of teachers agreed that of teachers for implementation of ICT by rating by strongly disagree, disagree and undecided respectively. Therefore, as the result revealed, secondary school leaders of Jimma zone were not sufficiently setting culture of ICT implementation in the school. School leadership that has a shared sense of purpose and is clearly supportive of ICT is required to foster, maintain and develop a school culture that enables the integration of ICT into teaching and learning. Implementation of ICT technology involves the application of knowledge, adequate resource materials, access of tools and skills in designing, producing and using products and also it is used to extend human capability to control and modify natural and human made environments (Raizen et al, 1995).

As can witnessed from item 14 Table 5 above, the majority137(51.6%) of teachers agreed that school leaders delegate some responsibility of leadership to his/her subordinates for implementation of ICT coordinate the staff to share their experiences were accepted . Whereas 57(21.5%), 51(19.2%) and 20(7.5) of teachers agreed that school leaders delegate responsibility their staff by coordination strongly disagree, disagree and undecided respectively were rejected rating by strongly disagree and agree and undecided. Therefore,

from the result one conclude that secondary school leaders of Jimma zone were not sufficiently delegating responsibility to implementation of ICT in the school and this might be challenging to the implementation of ICT. Regard to literature on delegate of leaders Grono (2010) argues that school leader who delegate some responsibilities of leadership to his/her subordinates helps create in secondary school environment where all members participate in decision making. This way, in secondary school leader empowers his/her staff to develop, create and own shared positive visions that are important in implementation of ICT. Therefore, it could argue that encouraging others to lead imposes greater responsibility and initiatives on them.

In item 15 of Table 5 above, the majority 139(52.5%) of teachers agreed that school leaders revealed that rating by 67(25.2%)and72(27.1%) agree and strongly agree respectively the setting educational goal of ICT implementation in the secondary school were capable in setting directions towards achieving the expected educational goal.Whereas, 53(20%),47(17.7%)and 26(9.8%) of teachers agreed that school leaders by rating strongly disagree and disagree and undecided on setting of educational goal on ICT implementation such tasks are given to school leaders were not nowadays the success of the school to accomplish its goal depends largely on the ability of the leaders.

As indicated in the item 16 Table 5 above, the majority of 153(57.7%) of teachers agreed that school leaders create the positive environment to motivated stakeholders to implementing ICT in the school rating by 75(28.3%) and 78(29.4%)agree and strongly agree, respectively agreed. Whereas 39(14.7%),41(15.4%) and31(11.6%) of teachers agreed that school leaders create positive environment to implementing ICT in the school rating by strongly disagree, disagree and undecided respectively did not agreed. Due to this, implementation of ICT in Secondary school to need supporting with access of adequate resources,Hence,a leader should facilitate conditions and events that create a positive environment for technology adoption such as training and education and organizational technical support. ICT related technologies are being deployed to support learning at different levels of the educational system (Getahun, 2006).

As illustrated in item 17 on Table 5 above, the majority 181(68.3%) of teachers agreed that school leaders aware the potential gap of teachers rating by 67(25.3%), 70(26.4%) and 44

(16.5%) strongly disagree, disagree and undecided respectively. This show that leaders were not work on the potential gap of teachers in the school and the rest 53(20%) and 31(11.6%) of teachers agreed that school leaders were aware the potential gap of teachers. Although the role of the principal in supporting ICT integration is critical, much of the ICT literature has tended to overlook the role of the principal (Michael, 1998) and the principal's current technology leadership capabilities and the necessary role the principal must play as technology leader. This gap in the research is rather strange because many studies relating to school effectiveness, school improvement and change show that principals play an important role in creating successful change in schools (Schiller, 2003). Therefore, as one understanding from the result, school leaders of secondary school of Jimma zone at low level providing training that fill the potential gap. Thus, as the finding of the study agreed, school leaders' accomplishment seems to be fair, but it might not be enough, since success in the implementation of ICT in teaching and learning process might not be reached.

With regard to item 18 of the Table 5 above, the majority 194(73.2%) of teachers agreed that school leaders implement of ICT were not committed by changing of capacity in the implementation of ICT through which teachers acquire rating by87(32.8%),83(31.3%) and 24(9%)strongly disagree, disagree and undecided respectively and the rest of 36(13.6%) and 35(13.2%) of teachers agreed that school leaders rating by agree and strongly agree on committed changing capacity of teachers in the implementation ICT respectively. Therefore, one could conclude that school leaders in secondary school of Jimma zone were not committed implementation of ICT in their school. As interview indicated from principals' and external supervisors did not given training for ICT teachers, for principals', external supervisors' and in the zone education office combined.

As shown in item 19 of the Table 5 above, the majority 141(53.2%) of teachers agreed that school leaders develop leadership skill to others staff in implementing ICT rating by62 (23.3%), 51(19.2%) and 28(10.5%) strongly disagree, disagree and undecided respectively and the rest of 50(18.8%) and 74(27.9%) of teachers agreed that school leaders in the leadership skill develop in other staff rating by strongly agree and agree respectively. Therefore, as result indicated school leaders in secondary school of Jimma zone did not develop leadership skill to others staff in the implementation of ICT in the school. Regarding

to this idea, literature however, little is known about the use of ICT by principals, their perceived computer competence, and their leadership style that they should play in the area of technology leadership.Therefore there was a need to investigate the role the principal should play in the area of technology leadership. Sweeney (2005) described the qualities of an effective leader as the ability to lead change, a clear vision and being ICT proficient.

As can be observed from item 20 Table 5 above, the majority 155(58.4%) of teachers agreed that school leaders must develop positive attitude on the implementation rating by 34.0%and 24.5% strongly agree and agree respectively ICT in the school and the rest of 38(14.4%), 53(20.0%) and 19(7.1%) of teachers agreed that school leaders ensure positive agreed that school leaders attitude on implementation of ICT in the school rating by strongly disagree, disagree and undecided respectively. Therefore, one concludes that on school leaders develop positive attitudes on the implementation of ICT in the school in secondary school of Jimma zone. In general, as the finding revealed, secondary school leaders of Jimma zone were challenging in implementation of ICT the school and the weighted low commitment of implementation ICT in the secondary school leadership.

4.3. Concerning the use of School Leaders in Implementing School ICT Program

Table 6. The responses of teachers' on school leaders' use of ICT

No	Indicators	Never		Rarely		Undecided		Sometimes		Always	
		f	%	f	%	f	%	f	%	f	%
1	ICT for student result analysis	54	20.3	34	12.8	54	20.3	68	25.6	55	20.7
2	ICT for students result recording	44	16.6	48	18.1	38	14.3	70	26.4	65	24.5
3	to promote the use ICT in the school	67	25.2	45	16.9	33	12.4	55	20.7	65	24.5
4	ICT for budget analysis	61	23.0	51	19.2	43	16.2	50	18.8	60	22.6
5	ICT for communication in the school	53	20.0	58	21.8	41	15.4	46	17.3	67	25.2
6	Use of ICT in education promote quality of education	33	12.4	35	13.2	22	8.3	58	21.8	117	44.1
7	ICT for minimedia services	56	21.1	39	14.7	49	18.4	76	28.6	45	16.9
8	ICT for communication services with stakeholders	36	13.5	41	15.4	60	22.6	81	30.5	47	17.7
9	Avoid misconception about the use of ICT in education	01	0.4	17	6.4	196	74.0	43	16.2	8	3.0
10	promoting use of ICT in the school	10	3.8	41	15.5	201	75.8	08	03	05	1.9
11	is relationship with stakeholders like ETC,EELPA and ICTDA	31	11.7	49	18.5	136	51.3	42	15.8	07	2.6

As indicated in item 1 Table 6 above, the majority 142(53.5%) of teachers agreed that school leaders did not accepted to use to analysis students result use ICT. The data gathered from respondents show that 53.5% rating by never and rarely respectively and the rest of 68(25.6%) and 55(20.7%) of teachers that agreed that school leaders did accepted to use ICT as students result analysis in the schools the respondents agreed on 25.6% and 20.7% rating by some times and always uses to analysis respectively in relation to school leadership's interest in ICT as evidenced by their use of computers for result analysis.

In reaction to item 2 Table 6 above, the majority 130(49.1%) of teachers agreed on that school leaders in the school leaders uses as recording the results of students never, rarely and undecided 16.6%, 18.1% and 14.3% rating by respectively rejected in item 02 and the rest of majority 70(26.4%) and 65(24.5%) of teachers agreed that school leaders uses ICT as technology to recording students result in their school. Therefore, one could conclude that from results that rating by respondents school leaders in secondary school of Jimma zone ICT use student result recording using computers in their school.

According to item 3 Table 6 above, the majority 145(54.7%) of teachers agreed that school leaders did not accepted the promote ICT uses in education rejected by respondents 67(25.2%), 45(16.9%) and 33(12.4%) rating by never, rarely and undecided respectively on promote ICT in the schools promote in their school and the rest of 55(20.7%) and 65(24.5%) of teachers agreed that school leaders to promote the ICT in the school the use of ICT in the school rating by sometimes and always respectively. Therefore, one conclude that school leaders in secondary school of Jimma zone did not promote the use of ICT in the school and this might the challenge of leaders in the school. Due to this, to implementation of ICT in secondary schools and the preparation and utilization of ICT is an important component here. It was important to understand that educational technologies provide students with some readiness to learn, where by using ICT tools is one of the methods or materials used to bridge the existing gap and promote independent and active learning.

As indicated in item 4 Table 6 above, the majority 145(54.7%) of teachers agreed that school leaders did not use computers for budget analysis in their school rating by 23.0%, 19.2% and16.2% respectively rejected the ideas and the rest of 50(18.8%) and 60(20.6%) of teachers agreed that school leaders to analysis their budget to uses computers in the school rating by some times and always respectively. As interview indicated from principals and external

supervisors informed that did not open the ledger on school computers annually, quarterly and monthly school budget. Therefore, one concludes that school leaders in secondary schools of Jimma zone did not use to analysis their budget by using computers.

As depicted in item 5 Table 6 above, the majority 154(58.1%) of teachers agreed that school leaders agreed that rating by never, rarely and undecided 53(20.3%), 58(21.8%) and 41(15.4%) for communication in the school respectively and the rest of 46(17.3%) and 67(25.2%) of teachers agreed that school leaders rating by some times and always use for communication ICT in the school respectively.

According to item 6 Table 6 above, the majority 175(66%) of teachers agreed that school leaders use of ICT in education as means of education promote quality of education rating by 21.8% and 44.1% some times and always respectively and the rest of 33(12.4%) and 35(13.2%) of teachers agreed that the use of ICT to promote education the quality of education rating by never, rarely and undecided respectively. Therefore, one could conclude that school leaders in secondary school of Jimma zone use of ICT used as promote of quality of education in the school.

As indicated item 7 Table 6 the majority 144(54.3%) of teachers agreed that school leaders ICT use for minimedia services in the school rating by never 56(21.1%), rarely 39(14.7%) and undecided 49(18.4%) respectively and the rest of 76(28.6%) and 45(16.95) of the teachers that agreed that school leaders use ICT in minimedia services agreed that rating by sometimes and always respectively. Therefore, one could conclude that school leaders in secondary school in Jimma zone did not use computers as mini-media services in the school and this might challenges skill of practice technologies.

With regard to item 8 Table 6 above, the majority 137 (51.6%) of teachers agreed that school leaders for communication services with stakeholders in the school rating by never 36 (13.9%), rarely 41(15.4%) and 60(22.6%) respectively and the rest of 81(30.5%) and 47(17.7%) of teachers agreed that on communication services in the school with school stakeholders rating by sometimes and always respectively in the implementation of ICT in the school. Therefore, one concludes that school leaders in secondary school in Jimma zone did not communication with stake holders in the school.

As indicated in item 9 Table 6 above, the majority 214 (80.7%) of teachers agreed that school leaders avoid misconception on the use of ICT in the school must develop rating by some times and always and the rest of never, rarely and undecided respectively and the rest of 43(16.2%) and 8(3.0%) of teachers agreed that school leaders did not avoid misconception in uses of ICT in the school.

With regard to item 10 Table 6 above, the majority 216(81.5%) of teachers agreed that the relationship stakeholders like ETC,EELPA and ICTDA with school communicate rating by never, rarely and undecided respectively and the rest of 42(15.8%) and 7(2.6%) of teachers agreed that school leaders on the relationship with stakeholders very weak .Therefore, from the result that indicated school leaders that in secondary school in Jimma zone one of the problems when breaks did not communicate in the school. In general, as the finding revealed, secondary school leaders of Jimma zone were challenging in implementation of ICT the school and use weighted low performance of implementation ICT in the secondary school.

4.4 Concerning for Computer in the school properly implementation

Table 7. Teachers perception on school computers properly implementation

No	Indicators	SDA		DIA		UD		AG		SA	
		f	%	f	%	f	%	f	%	f	%
1	Adequate computer in the classroom	59	22.3	43	16.2	20	7.5	82	30.9	61	23.0
2	Adequate computer in the school	46	17.4	63	23.7	23	8.8	60	22.6	73	27.5
3	Computer lab open in schedule hours	84	31.6	59	22.2	29	10.4	49	18.4	44	16.6
4	Availability of practices for students	40	15.1	44	16.6	34	12.8	90	33.9	57	21.5
5	Enough classroom for computers implementation	45	16.9	35	13.2	21	7.9	76	28.6	88	33.2
6	Is there accessories for implementation computers	87	32.8	57	21.5	39	14.7	43	16.2	39	14.7
7	To solve problems of computers	62	23.3	87	32.8	33	12.4	46	17.3	37	13.9

SDI =strongly disagree UD=Undecided, DIS=disagree, AG=Agree and SA=strongly agree and f=frequency

As indicated in item 1 Table 7 above, the majority 156(58.8%) of teachers agreed that school leaders that fulfill by some % of adequate computers in the class room with stakeholders like CAMARA PLC EDUCATION Rating by agree and strongly agree respectively and the rest of

66(24.9%) and 43(16.3%) of teachers agreed that school leaders did not accepted adequate computer in the class room rating by strongly disagree and disagree respectively. Therefore, from the result that indicated school leaders in secondary school in Jimma zone did not provided adequate computers in the school.

With regard to item 2 Table 6 above, the majority 133(50.1%) of teachers agreed that school leaders agreed on the adequate computers in their schools rating by agree and strongly agree respectively and the rest of 69(26.0%) and 63(23.7%) of teachers agreed that school leaders did not fulfill adequate computers in the school strongly disagree and disagree respectively. As interview from principals to carry the computers with adequate room was not possible in the school. Therefore, one conclude that almost 81% secondary school sample with computers but with wrong handle in all school as observe by researcher. Proper use of ICT is not possible without knowledge, skills and experience to use the available infrastructure in the schools. ICT knowledge and experience depend of teachers' pre-service and in-service training and the research revealed that teachers have varied academic and ICT professional training.

According to item 3 Table 7 above, the majority 172(64.9%) of teachers agreed that ICT practice room /ICT laboratory did not open in schedule time to practice for students in the school rating this item by strongly disagree and disagree respectively and rest of 49(18.4%) and 44(16.6%) of teachers agreed that in the school computer laboratory open in the schedule time for practice rating by agree and strongly agree respectively. Therefore, one conclude that ICT computers laboratory in secondary school in Jimma zone did not open in schedule time for the school students to practice and this might leadership challenges for ICT implementation in the secondary school.

As indicated item 4 Table 7 above, the majority of 155(58.5%) of teachers agreed that there were availability of computers for practice in the school 98(36.9%) and 57(21.1%) of teachers agreed that in the sample school the availability of computers in the school the respondents rating this item by strongly disagree and disagree respectively.

With regard to item 5 Table 7 above, the majority 185(69.8%) of teachers agreed that in the case of ICT implementation have class room to adjust the computers room by school leaders, due to this 86(32.4%) and 99(37.3%) of teachers agreed that enough for implementation

rating by agree and strongly agree respectively and the rest of 45(16.9%) and 35(13.2%) of teachers agreed that rejected enough class room for computers implementation in the school strongly disagree and disagree respectively.

As indicated in item 6 Table 7 above, the majority 144(54.3%) of teachers agreed that there was insufficiently accessories of computers in the implementation of ICT in the school most of respondents rejected this item rating by above 54.3% strongly disagree, disagree and undecided respectively and the rest of 82(30.9%) and 39(14.7%) of teachers agreed that there was sufficiently accessories in the school agree and strongly agree respectively. The result indicated that 54.3% of in secondary school in Jimma zone did not ICT accessories in the school this one of leadership challenge in the implementation of ICT in the school.

According to item 7 Table 7 above, the majority 182(68.6%) of teachers agreed that there was no enough personnel efficiency in the school most of respondents rating by strongly disagree and disagree respectively and the rest of 46(17.3%) and 37(13.9%) of teachers agreed that there is sufficiently enough personnel efficiency in the school rating by agree and strongly agree respectively. Therefore, one conclude in secondary school of Jimma zone out of work did not got maintenance at the time and this might challenges of ICT implementation in the school. In general, as the finding revealed, secondary school leaders of Jimma zone were challenging in implementation of ICT the school and the weighted did not properly implementation of ICT in the secondary school.

4.5. Concerning for Implementation of ICT plasma television in the school

Table 8.The response of respondents on implementation of plasma television

No	Indicators	SDA		DIA		UD		AG		SA	
		f	%	f	%	f	%	f	%	f	%
1	The use of plasma television enables to provide quality education	21	7.9	30	11.3	26	9.8	90	33.9	98	36.9
2	Problems in using the television faced by the teachers	89	33.5	51	19.2	23	8.6	46	17.3	56	21.1
3	An assigned staff that is responsible to solve the problem concerning the plasma television	73	27.7	69	26.0	19	7.1	52	19.6	52	19.6
4	Is there qualified teachers to implement plasma in the school	101	38.1	73	27.5	30	11.3	42	15.8	19	7.1
5	In the classroom enables the teachers to get teaching aids that may not be accessed very easily in the school	66	24.9	88	33.2	21	7.9	56	21.1	34	12.8

6	Is there advantages of the use plasma television in the school	19	7.1	21	7.9	26	9.8	87	32.8	112	42.2
7	To get all of the plasma television lesson on CD/DVD outside the classroom and connected with computer	60	22.6	70	26.4	34	12.8	51	19.2	50	18.8
8	Is there misconception concerning the use of plasma television by teachers	41	15.4	38	14.3	31	11.7	97	36.6	59	22.2
9	Is there improvement have been made on the plasma television in the school	23	8.6	34	12.8	12	4.5	96	36.2	100	37.7
10	Electric break, network or inability to operate while lessons are being given through plasma television	16	06	21	7.9	17	6.4	106	40	105	39.6

SDI =strongly disagree, UD=Undecided, DIS=disagree, AG=Agree and SA=strongly agree and f=frequency

As indicated in item 1 Table 8 above, the majority 188(70.9%) of the agreed that the use of plasma television enables to provide the quality of education rating by 33.9% and 36.9% agree and strongly agree respectively. This means that most of respondents highly take that the use of plasma television enables the school to provide quality and also believed that the existence of conducive environment in the school that initiate the teachers to use plasma television. On the other hand 21(7.9%), 30(11.3%) and 26(9.8) of teachers agreed that rating by strongly disagree, disagree and undecided rejected item 1 respectively to provide implementation quality of education. Therefore, one conclude that secondary school in Jimma zone accepted plasma television provided for students quality education but now all plasma in the class disconnected from central and this challenges to school leaders to got the material.

According to item 2 Table 8 above, the majority145 (54.7%) of teachers agreed that was the problems in using plasma television faced by teachers did accepted there was a problem because the program disconnected and also the problem of break of power in the school rating by and the rest 46(17.4%), 51(19.2%) and23 (8.6) of teachers agreed that teachers in uses of plasma television agree and strongly agree respectively. Therefore, one could conclude that in Jimma zone secondary school the problems of plasma face in the school. This might be leadership challenges in the implementation of ICT in the secondary school.

With regard to item 3 Table 8 above, the majority of 161(60.7%) of teachers agreed that rating by 27.7%, 26.0% and 7.1% strongly disagree, disagree and undecided respectively rejected the item 3 most of school in a problem. This implied that the school had an assigned staff that was responsible to solve various problems regarding plasma television .On the other hand 52(19.6%) and 52(19.6%) of teachers agreed that school leaders an assigned staff was responsible to solve the problem concerning the plasma television .Therefore, one conclude

that in secondary school in Jimma zone did not assigned staff to solve problems concerning the plasma television in the school and this might to challenges of school leaders in the school.

As indicated in item 4 Table 8 above, the majority 204(76.9%) of teachers agreed that there was not qualified teachers in the schools,the respondents 101 (38.1%), 73(27.5%) and 30(11.3%) rating by strongly disagree, disagree and undecided respectively and the rest of 42(15.0%) and 19(7.1%) of teachers agreed that there was not qualified teachers in the school for implementation ICT. Most of ICT teachers in secondary school of Jimma zone from TVET graduated by level. Therefore, one conclude that in secondary school of Jimma zone were not qualified teachers in the implementation ICT in the school this might be the challenges of ICT implementation in the school.

As indicated in item 5 Table 8 above, the majority 175(66%) of teachers agreed that the shortage of teaching aids in class room is not easily accesses rating by 66(24.9%), 88(33.2%) and 21(7.9%) strongly disagree, disagree and undecided respectively. So that school leaders to challenges to fulfill teaching aids in the school and the rest of 56(21.1%) and 34(12.4%) of teachers agreed that there is teaching aid easily access in the schools rating by strongly agree and agree respectively. Therefore, one concludes that in secondary school of Jimma zone did not have enough ICT teaching aids in class room. This challenges to school leadership for ICT implementation in the school.

With regard to item 6 Table 8 above the majority 199(75.1%) of teachers agreed that the advantage of plasma in the school teaching-learning process rating by 87(32.8%) and 112(42.2%) agreed that rating by agree and strongly agree respectively on the advantages of plasma but school leaders did not give to attention for plasma maintenance when disconnected and problems of accessories, so that if the materials of got from market the advantage more, and the rest of 19(7.9%), 21(7.9%) and 21(9.8%)of teachers agreed that did not accepted rating by strongly disagree, disagree and undecided respectively .The advantages of plasma in the teaching learning process rating by strongly disagree, disagree and undecided respectively. On the other hand the school cannot easily get skilled manpower to maintain the plasma in time; when plasma break or disconnected the skilled manpower got form Metu because cluster two zone secondary schools Jimma and Ilu Ababor for ICT maintenance. Therefore, one could concludes that in secondary schools of Jimma zone were not gives

attention for plasma maintenance and handle in the school and this might the challenges of school leaders in the school.

As indicated in item 7 Table 8 above, the majority164 (61.8%) of teachers agreed that manual get from outside of plasma rating by strongly disagree, disagree and undecided respectively and the rest 51(19.2%) and 50(18.8%) of teachers agreed that manual got out side in the library and market strongly agreed and agree respectively. Therefore, one could conclude that secondary school in Jimma zone plasma manual operating by using flash in class room for teaching -learning process.

With regard to item 8 Table 8 above, the majority 156(58.9%) of teachers agreed that the misconception of plasma rating by teachers agree and strongly agree did not accepted respectively and rest of 41(15.5%),38(14.3%) and31(11.7%) of teachers agreed that the misconception of teachers on plasma television rating by strongly disagree, disagree and undecided respectively. Therefore, one concludes that in secondary schools of Jimma zone now it plasma needed understood the uses of plasma in the schools.

As indicated in item 9 Table 8 above, the majority 196(73.6%) of teachers agreed that it needed improvement of plasma television rating by36.2%and 37.7 strongly agree and agree and the rest of 23(8.6%), 34(12.8%) and12 (4.5%) of teachers agreed that by rating strongly disagree, disagree and undecided on improvement of plasma television. Most plasma TVs in the school are out of function due to missing of some spare parts. Zone and districts Education offices are obligating and forcing the schools to buy the spare parts and also to maintain the plasmas. But, the school can't buy the spare parts as they are very expensive and also not easily found on the market. On the other hand the school cannot easily get skilled manpower to maintain the plasma in time. So, with these defects, students in the school may not be competent enough. This is one of leadership challenges in the implementation of ICT in the school. Therefore, one could conclude that secondary school in Jimma zone it needed improvement of plasma television on the disconnected of program in the schools.

With regard to item 10 Table 8 above, the majority 211(79.6%) of teachers agreed that school leaders rating by 40% and 37.7% agree and strongly agree respectively on the break of the electricity in grid and the disconnected of plasma lesson the class room and also inability of plasma operating. On the other hand 16(6%), 21(7.9%) and 17(6.4%) of teachers agreed that

school leaders rating by strongly disagree, disagree and undecided respectively. Therefore, one could conclude that in Jimma zone secondary school break of electricity while plasma lesson and disconnected of network and inability of operating. This might challenges of leadership to implementing ICT in secondary school. In general, on plasma television the challenges of school leaders to implement, as the finding revealed, secondary school leaders of Jimma zone were challenging in implementation of ICT the school and the weighted did not properly implementation of ICT in the secondary school.

4.6. **Concerning ICT facilitator in the secondary school**

Table 9.The respondents' response on ICT facilitators

No	Indicators	Yes		No	
		Respondents	%	Respondents	%
1	ICT facilitator in the school	128	48.3	137	51.7
2	ICT skilled teachers in the school	98	36.9	167	63.1
3	ICT training for teachers in the school	78	29.4	187	70.6
4	ICT technician in the school for maintenance support	82	31	183	69

With regard to item 1Table 9 above the majority 137(51.7%) of teachers agreed that school ICT facilitator in the school rating by No and the rest 128(48.3%) of teachers agreed on no ICT facilitators in the school. Therefore, one could conclude that in Jimma zone secondary school there is no ICT facilitators in the school.

As indicated to item 2 Table 9 above the majority167 (63%) of teachers agreed on that no ICT skilled teachers in the school and rest of 98(37%) of teachers on yes that ICT skilled teachers in the school. Therefore, one could conclude that in Jimma zone secondary school there were not skilled teachers for ICT implementation.

According to item 3 Table 9 above the majority 187(70.5%) of teachers agreed that on No ICT training in the school and the rest of 78(29.5%) of teachers agreed on yes on the training of ICT in the school. As indicated from the result could conclude that in Jimma zone secondary school did not ICT training in secondary school. This might be leadership challenges in ICT implementing in secondary school.

With regard to item 4 on Table 9 the majority 183 (69%) of teachers that agreed on No ICT technician in the school and the rest of 82 (31%) of teachers agreed on yes that ICT technician

in the school. Therefore, one could conclude that in Jimma zone secondary school was not ICT technician in the ICT implementing in secondary school.

4.7. **Budget for ICT implementation in secondary school**

Table 10. The teachers' response on budget

No	Indicators	Yes		No	
		Respondents	%	Respondents	%
1	From government	238	89.8	27	10.2
2	From non government	81	30.5	184	69.5
3	From community participation	28	10.6	237	89.4

With regard to item 1 Table 10 the majority 238 (89.8%) of teachers that agreed on most the budget from government for ICT implementation in the secondary school, especially by ministry of education supports the materials ICT like plasma, computers and others materials and the rest 27(10.1%) of teachers agreed that on government did not support the implementation of ICT in the secondary school.

According to item 2 Table 10 above the majority184 (69.5%) of teachers agreed that on did not support ICT non-government on the implementation of in the secondary school and the rest 81(30.5%) of teachers agreed on the implementation of support by non-government in secondary school. Therefore, one could conclude that in Jimma zone secondary school the implementation ICT did not support by non-government.

As indicated in item 3 Table 10 above the majority 237 (89.4%) of teachers that did not agreed the community participation by no, on ICT implementation in the secondary school and the rest 28(10.6) of teachers that agreed by yes on the community participation in the implementation of ICT in the secondary school .As indicated the result from response one could conclude that in Jimma zone secondary school did not support by community in the implementation of ICT.

Not only principals and vice principals who involve in running school budget, but PTA representatives are responsible and has taken part in controlling and monitoring budget of

school especially school grant. But, at the same time secondary schools has scarce of resource because, parents and community are not supporting the schools financially.

School principals of majority of sample schools also explained that secondary schools were not getting the block grant budget properly. For instance, one school principal explained that: Even though our school is getting faire budget of school grant from government, the block grant budget is not properly availed to the school as it is specifically allocated per each pupil and which is clearly indicated in the blue print of MoE (2002). Therefore, this problem hinders our school to fulfill important educational materials and facilities in the implementation ICT School. In general budget in secondary school of Jimma zone most form government but did not have fair from stakeholders.

CHAPTER FIVE

5. SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 Summary

The research has attempted to scrutinize the attitudes of school leadership and teachers and different professional from ICT towards the educational benefits of integrated ICT implementation education in general, and towards the importance of ICT program implementation to improve in secondary school of leadership challenge in particular. The study also tried to identify perception of the leadership on the implementations of ICT in the sampled secondary schools; opinion of the ICT teachers and on the use of plasma television, computer and their appropriateness that they have for providing quality education. And the infrastructure development level to create ICT enabled teaching and learning environment and the major challenges that were hinder the implementation of ICT in secondary school in Jimma zone.

To sum up, the study was designed by the researcher to have a general view of the current leadership challenge of ICT implementation in secondary school in Jimma zone from 285 selected sample teachers, 22 principals, and 12 vice principals and in Jimma zone. Thus, a look in to the analysis and discussions conducted in this paper based on the data secured secondary school teachers, principals', vice principals' and external supervisor, and observation indicated the following summary.

On the basis of the objective set in the package along with the findings of this study, the implementations of ICT in education can successfully bring change in the education sector and enable the schools to provide quality education and reduced challenge of ICT implementation.

The perception of the respondents for the advantage plasma television and computer using ability has and for the potential integrated ICT use has to secure their competency, to extend new education opportunities and widen their knowledge and skills for future career is beyond expected

Regarding to the educational quality development, the ICT program seem to have relatively better importance in light of providing critical learning and make the classroom interactive in which the students are the dominating the classrooms. In this case, attitude of the principals,

vice principals, supervisor and teachers reveal that the program enabled access to various information and talents of qualified teachers and adequate teaching materials that may not be accessed otherwise.

The major challenges extracted from the analysis of the findings, however, were the insufficient provisions of educational inputs that determine the achievements of the technology. These include shortages of ICT equipments and accessories such as number of plasma television and computers, manpower, low commitment of school leadership, qualified teachers, budget and so on.

5.2. Conclusion

There have been a lot of attempts made to implement the package of ICT in education by providing plasma television, computer and secondary schools of the country. That means innovation of the technology into the countries education system has been tried to address the objectives for which it was established. However, the implementation of the package has not been yet addressed and faced a lot of challenges that may turn the promising attempts into chaos unless it is given the necessary attentions to manage it properly. Hence, from the findings, the following could be concluded

The utilization and use of ICT in education enabled both the school leadership and school community to get the benefits of the technology. That is ensuring the provision of quality education by providing qualified teachers, teaching materials and information needed for their lessons. And also, the basic part of the implementation that has not been yet addressed is upgrading the necessary knowledge and skills of both the teachers and the students who are the main agents of the implementations in using computer and plasma. Utilization of technology is becoming more important to schools and success of such implementation is often due to presence of effective school leadership. In addition to these, what could be concluded is that school leadership and teachers lack sufficient ability of using computer. Thus, it may not be difficult to understand that most of the factors pointed as mostly hindering implementation of ICT in secondary school/education were related to inadequate supply of infrastructures and lack of necessary human resource development. Therefore, this could lead to incurring high opportunity cost of the investment made on the technology if its potential is not harnessed to the maximum by providing the above basic factors to mitigate such problems.

5.3 Recommendations

The utilization of ICT in education and set in the package is intended to improve quality of education provided in the schools which have no adequate number of qualified teachers, scarce resources of teaching materials and information that are needed for their subject matters. Besides, the implementation and use of ICT in education enables those in the remote to access to education. Practically also different research studies show that, school leaders, teachers and school communities believe that the potential and effective use of ICT improve quality of education. However, some educational technologies could be sensitive to inadequacy of other complementary equipments including lack of technical support, manpower, lack of infrastructure development and budget supplies. Thus, unless sound and urgent measures are taken on such issues, the negative impact far weighs the benefit expected. Therefore, recommended possible solutions for the challenges of the implementations of ICT identified are:

- The utilization and use of ICT in education has a lot of benefits such as it prepares current generation for the work place as ICTs using is becoming more and more expanding; creates conducive situation for the long term objective of the secondary schools to enable new ways of teaching and learning through plasma and computer. However, this could be realized slowly when there is adequate and sufficient amount of developed human resources, provision of ICT and infrastructures. Thus, to alleviate the current existing problems related to these issues of implementation ICT in secondary schools, the government must provide adequate number of computers and plasma display televisions. In such away, the government of Ethiopia must address this problem through initiative of the community, NGOs and external bodies' donors.

  To utilization and use ICT effectively in the education sector, all the communities of the schools such as especially school leadership, teachers and students' knowledge and skills should be developed. Otherwise, it becomes difficult for them to utilize ICT in the schools and advantages ICT could offer to increase their current performances and for their future career. Therefore, the Ethiopian government has to take short term and log-term measures. As temporary solution in developing the necessary basic skills of using ICT for both the students and teachers training and retraining should be given

for the teachers and staff members that manage the implementation of the package in the school.

- And also, in order to utilize ICT in the school of the Jimma zone secondary schools successfully, the government and the concerned body should give great attentions for the necessary budget allocations for the secondary schools.
- As the result of the finding revealed, secondary schools leaders of Jimma zone were fairly and economically using the available resources. But, the result from interview revealed that still many schools had a scarcity of financial resources. The result from observation also revealed that some sampled schools had a scarcity of school facilities. Therefore, school leaders in collaboration with Woreda and Zonal Educational Offices need to identify problems in the school and should allocate available budgets for the school so that the schools can fulfill important facilities for ICT utilization.
- At the end, to alleviate the challenges encountered school leaders in utilizing ICT, it is advisable that principal, external supervisor, Woreda and zonal Education Offices in collaboration with the Regional Education Bureau need to give sustainable training to fill the skill gaps of school leaders. They also need to avail secondary schools with important financial, material and human resources. Beside, Woreda and Zonal Education Offices in collaboration with REB should timely supervise and support the school leaders.

Finally, to make sustainable and institutionalized the utilization of ICT in education, the school leadership should also be empowered both financially and administratively so that they manage the utilization of ICT successfully and the researcher recommends a more detailed and comprehensive study in the area to strengthen the result of the findings.

REFERENCES

Abiy Zegeye,AlemayehuWorku, Daniel Tefera, Melese Getu and Yilma Silashi (2009). *Introduction to research methods*.*Graduate studies and research office*: Addis Ababa University.

Afshari,M.(2012).Transformational Leadership Role of Principals in implementing Information

Anderson, P. (2007). What is web 2.0? Ideas, Technologies and Implications for Education [Online]availablefrom:http:/www.jisc.ac.uk/media/documents/techwatch/tsw0701b.pdfaccessed: 11/01/10

Andoh, B. (2012) Anexploration of teachers' skills, perceptions and practices of ICT in teaching and learning in the Ghanaian second-cycle schools, *Contemporary Educational Technology* 3(1), 36-49

Aron, A., Aron, E. N. & Coups, E. J. (2008).Statistics for the behavioral and social sciences. (4th ed). USA: Pearson Education, Inc.

Belay Ejigu. (2015).The Status and Utilization of ICT in Sebeta College of Teachers Education and its Challenges. Addis Ababa, Ethiopia.

Betz, M.(2011).Information Technology and school the Principal's role.Educational Technology & Society 3(4), 4.

Bishop, P. (2012).Information Communication Technology and School Leaders. *Hand book of Educational Leadership and Management.* Edinburgh gate: Pearson Education Limited.

Byrom, E., Bingham, M. (2001). *Factors influencing the effective use of technology for teaching and learning: Lessons learned from the SEIR*TEC intensive site schools.* (2nd ed.). Greensboro, N.C.: University of North Carolina at Greensboro.

Caircros, F.et al. (2005).Visions of the Information Society: ICT for Education and Building Human Capital.

Chang, I. H. (2012).The effect of principals' technological leadership on teachers' technological literacy and teaching effectiveness in Taiwanese elementary schools. Educational Technology & Society, 15(2), 328–340.

Colin F.Hales.The Millennium Development Goals and Information and Communication Technologies, 301-311.

Creed, C., Freeman, R., Robinson, B. & Woodley, A. (2004).*Mixed research methods*: Prest Practitioner Research and Evaluation Skills Training in Open and Distance Learning.Common wealth of Learning (COL). Retrieved From: www.col.org/prest

Creswell, J. W. (2006). *Research design, quantitative and mixed approaches* (2ndEd): London, Sage Publication Inc.

Creswell, J.W. (2009). *Qualitative, Quantitative, and Mixed method Approach*. Los Angeles: SAGE publication, Inc.

Daniel WW (1999). *Biostatistics: A Foundation for Analysis in the Health Sciences*. 7th Ed. New York: John Wiley and Sons.

Daniels J.S. (2002).Foreword in Information and Communication Technology in Education *A Curriculum for Schools and Program for Teacher Development.* Paris: UNESCO.

David Moursund.(2005).Introduction to Information and Communication Technology in Education. Teacher Education, University of Oregon

Day,C.(2012).Challenges of the Orthodoxy of effective school leadership. International Journal Leadership in Education, 4, 39-56.

Dessalegn, M. Dagmawi, L.The Promises and Challenges of ICT-Pedagogy Integration in Developing Countries: the Case of Ethiopia.College of Natural Sciences.Department of Computer Science. Addis Ababa University, 1-7.

Dinham,S. (2005).Principal leadership for outstanding educational Outcomes. Journal of Educational Administration, 43 (4), 338-356.

Drost, A. Ellen (2004).Validity and Reliability in Social Science Research: *Educational Research and Perspectives*.Vol.38.No.1.California State University.

Dzidonu, J. (2010). The role of ICTs to achieving the MDGs in education: An Analysis of the Case of African Countries, Accra Ghana. Retrieved from http://www.ait.edu.gh

ETA(2007).EthiopianTelecommunicationsAgencyLicences.http://www.eta.gov.et/Button/Licenses.htm retrieved on Nov15 2012.

Ethiopian Information and Communication Development Agency (EICTDA).The National Information and Communication Technology Policy and Strategy, (2009). Unpublished document

Fooi, F. Afshari, M.Baker, K., Luan, W. & Sumah, B. (2009).Factors affecting teacher's use of Information and Communication Technology. International Journal of Instruction, 2(1), 78-98.

Getahun, A. (2006).ICT is Ethiopia's Number One Priority, Developing Telecoms.com.

Grono,W. (2010).ICT leadership in school education. A paper presented to the Australian Catholic University Conference 2010, Sydney Australia.

Gurr, D.(2010).The impact of Information Communication Technology on the work of school Principals. *Learning & Managing, 6*(1), 63-67.

Gurr, D., (2000). The impact of Information and Communication Technology on the Work of School Principals. *Leading & Managing* 6(1) 63 – 67.

Gurr, D.,Drysdale, L., & Mulford, B.(2006).Models of successful principal leadership. *School Leadership and Management*, 26(4) 371 – 395.

Haddad.(2010).ICT in School Education (Primary and Secondary) Government of India, Ministry of Human Resource Development. New Delhi.

Han, C. (2002).Leadership Roles of a Pre-school Principal in the Use of ICT.*Contemporary issues in Early childhood*, 3 (2), 293-297.

Hare, H. (2007).Survey of ICT and Education in Africa: Ethiopia Country Report, ICT in Ethiopia, InfoDev/World Bank.

Haughey, M.,(2006).The impact of computers on the work of the principal: changing discourses on talk, leadership and professionalism.School Leadership and Management. 26(1) 23 – 36.

Hennessy, S. (2010). Developing the use of Information and Communication Technology to enhance teaching and learning in East African schools. Review of the Literature Aga Khan University Nairobi Kenya.

Ibukun, W.O .(2004). Educational Management Theory and Practice, NIEPA Printing press,

Kahn, H. Hasan, M. & Clement, K. (2012) Barriers to the introduction of ICT into education in developing countries: the example of Bangladesh *International Journal of Instruction,* 5 (2) 61-80

Kearsley, G. (1998), "Educational technology: a critique", Educational Technology, 38(2), 47-51.

Kozma, R.B, (2005).National policies that connect ICT-based education reform to economic and social development. *An interdisciplinary journal of humans in ICT environment 1(2) 117-156*

Laaria M.(2013).Leadership Challenges in the Implementation of ICT in Public Secondary School Kenya. *Journal of Education and Learning, 2* (1), 32-432.

Langmia, K. (2006). The role of ICT in the economic development of Africa: The case of South Africa. *International Journal of Education and Development, 2*(4).

Leach, J. (2011). Do new Information and Communication Technology have a role to play in achieving quality professional development for teachers in the global south? *The Curriculum Journal, 18,* 293-329.

Leoulseged W/Hanna.(2010).Achievements, Challenges and Prospects in Implementing Information and Communication Technology Expansion Program: The Case of Selected Preparatory Schools in Addis Ababa.

Linda Flanagan.(2003).Technology leadership for the twenty-first century principal Calgary Board of Education, Calgary, Alberta, Canada Michele Jacobsen University of Calgary, Calgary, Alberta, Canada,41(2) 124-142.

Makhanu, E (2010) Principals' literacy in ICT: towards improving secondary school performance in Kenya. PhD thesis, University of South Africa.

Mark, G. (2007). ICT Leadership in School Education. A paper presented to the Australian Catholic University Conference "Directions for Catholic Education Leadership in the 21st Century" The Sofitel Wentworth . Sydney, Australia,1-15.

Mellar, H. et al.(2007).*Effective Teaching and Learning Using ICT.* London: NRDC Publications.

Michael, S. (1998). Best practices in information technology (IT) management: insights from K-12 schools' technology audits. *International Journal of Educational Management*.12 (6), 277-88.

Mo. A. Bakar. Luan. Bahaman Abu Samah, and Foo Say Fooi. (2008). School Leadership and Information Communication Technology.Faculty of Educational Studies. University Putra Malaysia 7(4),82-91.

MOE (1994).*The Education and Training policy*, Addis Ababa.

MOE. (2013). Content and pedagogic Standard for ICT Teachers in Ethiop High schools .Federal Democratic Republic of Ethiopia, Ministry of Education (MOE) .Addis Ababa.

Mojgan Afshari. (2012).Factors affecting the Transformational Leadership Role of Principals in Implementing ICT in Schools. Department of Educational Management, Planning and Policy, Faculty of Education, University of Malaya, 11(4) 164-175.

Mudasiru Olalere Yusuf. (2005). Information and communication technology and education: Analyzing the Nigerian national policy for information technology. Department of Science Education, University of Ilorin, Nigeria, 6(3), 316-321.

Niamh Brannigan.(2010).Enhancing Leadership Capacity in ICTs in Education through technology enabled collaboration. CS7035 Pedagogy for Technology Enhanced Learning, 2-9.

Nina Abdul Razzak. (2013). Challenges of Facing School leadership in Promoting ICT Integration in Instruction in the Public Schools of Bahrain. Education and Information Technologies Bahrain Teachers College, University of Bahrain.

Nombiar, M. (2005). ICT for Education: the Experiences of India. In Bracey, B. and Culver, J. (eds.), *Harnessing the Potential of ICT for Education.*A multi-stakeholder Approach Proceedings from the Durlin Global Forum of the United Nations ICT Task Force. New York: United States Information and Communication Technologies Task Force One UNs Plaza.

Odera F., Y.(2011).Computer Education Policy and its Implementation in Kenyan Secondary Schools. International Journal of Information and Communication Technology Research, 1(5),221-229.

Olowoselu Abdulrasheed and Aishatu SalihuBello.(2015).Challenges to Secondary School Principals' Leadership in Northern Region of Nigeria.Department of Science Education Modibbo Adama University of Technology Yola, Nigeria. Ondo- Nigeria.

Papoioannon, P & Charalambous, K (2011) Principals' attitudes towards ICT and their perceptions about the factors that facilitate or inhibit ICT integration in primary schools of Cyprus, *journal of Information Technology Education* 10(1) 349-369

Pont, B., Nusche, D. & Moorman,H. (2008). *Improving School Leadership Volume 1: Policy and Practice***,** Paris: Organization for Economic Cooperation and Development *(*OECD).

Popper, M. & Zakkai, E. (1994).Transactional, Charismatic and Transformational Leadership: Conditions Conducive to their Predominance. *Journal of Leadership & Organization Development*, 15(6), 3-7.

Raizen, S.A., Sellwood, P., Todd, R.D. and Vickers, M., (1995).Technology Education in the Classroom, Jossey-Bass, San Francisco, CA.

Reeves, J, C.(1998). *The Impact of Media and Technology in School.* A Research Report for the Bertelsmann Foundation: University of Georgia.

Sanjoy Kumar,P.(2013).Open Educational Resources with Special Reference to Biology Teaching and Research aid in Ethiopia. School of Animal & Range Sciences Haramaya University, Dire Dawa, ETHIOPIA, 3(3),86-93.

Schepers, J. & Wetzels, M. (2005). Leadership Styles in Technology Acceptance. *Journal of Managing Service Quality*, 15 (6), 496-508.

Schiller, J. (2003).Working with ICT Perceptions of Australian principals. Journal of Educational Administration, 41(2), 171-185.

Schiller, J. (2011).Working with ICT: Perceptions of Australian Principals.*Journal of Educational Administration, 41*(2).

Schiller, J. (2011b).Surfers or Spectators? Principals and ICT: *Principal Matters Journal, 5,* 30-41.

Schillewaert, N., Ahearne, M.J., Frambach, R.T. and Moenaert, R.K., (2005). The adoption of information technology in the sales force. *Industrial Marketing Management*.34:323-36.

Seng-Chee Tan.(*2010).*School technology leadership: Lessons from empirical research National Institute of Education Nan yang Technological University, Singapore, 896-904.

Seng-CheeTan,Ong Kian-KeongAloysius.(2011).Distributed leadership for integration of Information and Communication Technology (ICT) in school.National Institute of Education Nan yang Technological University, Singapore, 1204-1214.

Sweeney,B.(2005).Management and Leadership in Schools. *Teacher* August 48 – 50

Sweeney,B.(2012).Management and Leadership in school. Educational Leadership Journal, 56, 48-60.

Vanaja,M. and Rajasakar,S. (2008).*Educational Technology and Computer Education.* New Delhi: Neelkamal Publication PVT.LTD.

Victoria, L. Tinio (2002). ICT in Education: United Nations Development Programmers, Bureau for Development Policy; 304E .45th street, New York, NY10017.

William, G. C. (1977).Sampling techniques (3rd Ed). Canada: John Inc.

Yee,D.(2000).Images of school principals Information and Communication Technology Leadership. Technology, Pedagogy and Education, 9(3).

Yusuf, M.O.(1998).An Investigation into teachers' competence in implementing computer education in Nigeria secondary schools. Journal of Science Teaching and Learning, 3 (1 and 2), 54-63.

APPENDICES

Appendix A-1

JIMMA UNIVERSITY

COLLEGE OF EDUCATION AND BEHAVIOURAL SCIENCE

DEPARTMENT OF EDUCATIONAL PLANNING AND MANAGEMENT

QUESTIONNAIRE TO BE FILLED BY TEACHERS

This questionnaire is designed *to assess the school leadership challenges in the Utilization of ICT program in secondary schools* of Jimma Zone of Oromia Regional State. The study focuses on government secondary schools (9-10) in the zone. This research would conducting for academic purposes and were no way affecting your personally and your identity remaining confidential. Evidently, the success of this study depends on your honest response to all parts of the questionnaire. Therefore, I kindly request you to fill this questionnaire openly.

N. B.

- No need of writing your name
- Please, reply to questions by putting "X" in the space provided
- **School leaders = principal/director and vice principal /vice directo**

1, Background Information

1. Region *Oromia* Zone *Jimma* Woreda _____

Name of the school: _____

2. Sex: Male □ Female □

3. Age: 20-30 □ 31-40 □ 41-50 □ 51and above □

4. Level of Education: Certificate □ Diploma Holder □ 1st Degree □ 2nd Degree □ others □

5.Professional and educational background_____

6. Work Experience in year: 1-4 □ 5- 8 □ 9- 12 □ 13-16 □ above 16 □

2. Concerning Commitment of School leaders in the Implementation of ICT in the School

Please, put " x" in the space provided for each item under the rating.

(1= strongly disagree, 2=undecided 3=disagree 4=agree and strongly agree=5)

No	Indicators	Rating scale				
		1	2	3	4	5
1	There are external bodies that support the school to implementing ICT effectively in the school					
2	School leader's visions of implementing ICT in Secondary School are realized through incorporating, developing and supporting visions of other to staff members of secondary school					
3	School leaders Communicates with school vision for staff and students to implementing ICT in the school					
4	School leaders have a major responsibility for implementing ICT in the school					
5	School Leaders possess the necessary skills to plan ICT implementation and Basic skills in using ICT are desirable in the school					
6	School leaders to provide the necessary adequate resources for the implementation of ICT in the school					
7	School leaders clear vision and strategic plan for implementation of ICT in the school					
8	School leaders there is giving responsibility to staff that handles the implementations of ICT in the school					
9	School leaders should play a leading role in promoting teachers' attitudes towards implementation of ICT in the school					
10	School leaders play an important role in providing necessary ICT provision for implementation of ICT in the school					
11	School leaders involves leadership tasks in their school being doing communally for implementation of ICT in the school					
12	School leaders inspire the school community for implementation of ICT in the school					
13	School leaders are important for setting the culture of the school for ICT implementation in the school					
14	School leaders delegate some responsibilities of leadership to his/her subordinates for implementation of ICT in the school					

15	School leader set educational goals for implementation of ICT in the school					
16	A school leader should facilitate, conditions and events that create a positive environment for implementation of ICT in the school					
17	School leaders should be aware of the potential of ICT to bridge the gap of teachers in the implementation ICT in the school					
18	School leaders are committed to implementing ICT needed to changes the capacity of staff in the school					
19	School leaders develops leadership skills to other staff members in their school in the implementation of ICT in the school					
20	School leaders must develops positive attitudes for implementation of ICT in the school					

3. Concerning the use of School Leaders in Implementing School ICT Programs

How often do you use any of the following ICT tools in your implementing ICT program in your school? **4 = Always 3 = Sometimes 2 = Undecided 1 = Rarely 0 = Never**

No	Indicators	Rating scale				
		4	3	2	1	0
1	There have been ICT for students result analysis in the school					
2	The use of ICT for students result storing/recording in the school					
3	There have been attempts to promote the use of ICT in the school					
4	There have been ICT for budget analysis in the school					
5	There have been use for communication in the school					
6	The use of ICT in education promotes quality education in the school					
7	The use of ICT for mini media services in your school					
8	There have been ICT for communication services with stakeholders					
9	Attempts have been made in order to avoid misconceptions about the use of ICT in education among teachers					
10	There are attempts made by the school community to promote the use of ICT in the school (forming ICT club and so on)					
11	In the implementation of ICT there is relationship with stakeholders such as ETC,EELPA and ICTDA that are assumed to support the schools to implement ICT in the school					

4. Concerning for Computer in the school properly implementation

Direction: - Please check all that apply and indicate your answers using "□ " mark
(1=strongly disagree, 2=undecided 3=disagree, 4=agree and strongly agree =5)

No	Indicators	Rating scale				
		1	2	3	4	5
1	Is there adequate computer class room in the school					
2	Is there adequate computer in the school					
3	Computer labs are opened in the scheduled hours.					
4	For implementation of ICT Computer classrooms are available for students to practice in their free time in the school					
5	Is there enough classrooms for implementation of ICT reserved only for computer lesson in the school					
6	Is there personnel efficiency to solve computer problems in the school					
8	Is there enough accessories to implemented computer in the school(like cable,mouth,and etc)					
9	Is there computer in the office to use for management purposes in the school to implementing					
10	Is there computer for teachers for management of students results					

5. Concerning ICT facilitator in the school

Direction: - Please check all that apply and indicate your answers using "□ " mark

No	Indicators	Rating scale	
		yes	no
1	There have been ICT facilitator in the school		
2	There have been ICT skilled teachers in the school		
3	There have been ICT training for teachers in the school		
4	Does your school have an ICT coordinator		
5	There have been ICT technician in the school for maintenance ICT		

6. Budget for ICT implementation

Direction: - Please check all that apply and indicate your answers using "□ " mark

No	**Indicators**	**Rating scale**	
		Yes	No
1	From government		
2	From non government		
3	From community participation		

7. **Overall Comments**

(Please write your answer briefly)

1. Do you have anything to say concerning the implementation of ICT in the school?

_____
_____

2. What major activities have been performed by the school to implement ICT in the school?

_____
_____

3. What are the major challenges to implement ICT in your school?

_____
_____

4. Is there the adequate resource to implement ICT in the school?

_____
_____

5. Is there stakeholder to partner implement ICT in the school?

_____
_____

APPENDIX A-1

Interview questions for school principals, vice principals and secondary school external supervisors.

The objective of this interview is to collect necessary information for the study of Leadership challenges in the implementing ICT in the secondary schools of Jimma zone. Therefore, your contribution of this study is highly valued and you are kindly requested to respond to the questions. Finally, the student researcher would like to assure that your identity is strictly confidential.

1. Region *Oromia* Zone *Jimma* Woreda _____

Name of the school: _____

2. Sex: Male □ Female □

3. Age: 20-30 □ 31-40 □ 41-50 □ 51and above □

4. Level of Education: Certificate □ Diploma Holder □ 1st Degree □ 2nd Degree □ others □

5.Professional and educational background_____

6. Work Experience in year: 1-4 □ 5- 8 □ 9- 12 □ 13-16 □ above 16 □

1. How frequently you use computer for administrative and personal tasks?
2. When did you start working for ICT skill development and clear vision on implementation of ICT?
3. In your opinion, what should be the role of a leader in ICT implementation in the school?
4. What should be the vision of a school principal for ICT implementation?
5. Is there any ICT professional development program for teachers? Kindly share the objectives of those trainings?
6. What ICT resources are available in your school?
7. Identify key players who introduce and support ICT in your school and what exactly are their roles in the implementation?
8. Is there any specific strategy you have regarding ICT?
9. Is ICT implementation a part of school development plan?
10. In your opinion, is it easy to incorporate ICT in the teaching and learning process?
11. What are the barriers for ICT implementation with teaching and learning?
12. Is there necessary budget allocate for implementation of ICT?

APPENDIX -B

Checklist Observation

Availability of Adequate Resources in the School

No	Item	Facilities		
		Availability		Not availability
		Adequate	Inadequate	
1	Computer in laboratories			
2	Access of Plasma television			
3	Computers in the office			
4	Access of classroom for computers			
5	Services of plasma television			
6	Services of maintainance of computers in the school			

APPENDIX C-1

Daniel (1999) sampling formula.

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

Where;

S = required sample size.

X2 = the table value of chi-square for 1 degree of freedom at the desired confidence level or level of confidence (3.841).

Were, X=1. 96 then X2 = 3.841 N = the population size.

P = the population proportion or expected proportion (assumed to be.50 since this would provide the maximum sample size).

d= the degree of accuracy expressed as a proportion (. 05).

Therefore, to determine the sample size of teachers,

$S = \frac{x^2 NP(1-p)}{d^2(N-1)+x^2 P(1-P)}$, Where N=492

S=3.84x492x0.5x (1-0.5)/ (0.05)2 (492-1) +3.84x0.5 (1-0.5), S=285

APPENDIX C-2

William stratified Formula (1977:75):

$$Ps = \frac{n}{N} * No$$

No=Number of teacher in each school Where,

Ps = Proportional allocation to size

n = Total teachers' sample size

N = Total number of teachers in the eight selected sample school=492