

**MASTER OF SCIENCE IN TECHNICAL EDUCATION  
COMPUTER SCIENCE AND ENGINEERING**



**A STUDY TO IDENTIFY THE PROBLEMS FACED BY INFORMATION AND  
COMMUNICATION TECHNOLOGY (ICT) TEACHERS OF UNIVERSITIES IN  
SOMALIA**

**By**

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MSc. TE (CSE)

**DEPARTMENT OF TECHNICAL AND VOCATIONAL EDUCATION  
ISLAMIC UNIVERSITY OF TECHNOLOGY (IUT)  
THE ORGANIZATION OF ISLAMIC COOPERATION (OIC)  
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of Master of Science in Technical Education with Specialization in  
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This is to certify that the work presented in this thesis is the outcome of the investigation carried out by **Abdurrahman yusuf haydar** under the supervision of **Prof. Dr. Khushi Muhammad** in the department of Technical and Vocational Education (TVE), Islamic University of Technology (IUT), Gazipur, Bangladesh. It is hereby declared that this thesis/report or any part of it has not been submitted elsewhere for the award of any Degree or Diploma.

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# **DEDICATION**

**DEDICATED TO MY PARENTS**

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## LIST OF ACRONYMS

<b>TFG</b>	Transitional Federal government
<b>ICT</b>	Information and Communication Technology
<b>MoE</b>	Ministry of Education
<b>HIPS</b>	Heritage Institute of Policy Studies
<b>PDA</b>	Personal Digital Assistant
<b>UNICEF</b>	United Nations Children’s Fund
<b>UNESCO</b>	United Nations Educational, Scientific and Cultural Organization
<b>NGOs</b>	Non-Governmental Organizations
<b>UNDP</b>	United Nations Development Program
<b>SNU</b>	Somali National University
<b>GER</b>	Gross Enrollment Ratio
<b>CIA</b>	Central Intelligence Agency
<b>TVET</b>	Technical and Vocational Education and Training
<b>SRS</b>	Student Record System
<b>HRS</b>	Human Resource System
<b>MIS</b>	Management Information Systems
<b>JISC</b>	Joint Information System Committee
<b>VLE</b>	Virtual Learning Environment
<b>LMS</b>	Learning Management System
<b>OER</b>	Open Educational Resources
<b>ISP</b>	Internet Service Provider
<b>CETIS</b>	Center for Education, Technology, Interoperability and Standards
<b>HR</b>	Human Resource
<b>ARL</b>	Association of Research Libraries
<b>ITMF</b>	Information Technology Management Forum



## **ABSTRACT**

Teachers at the higher educational institutions face many problems, especially Information and Communication Technology (ICT) teachers at the university level in Somalia. There is no doubt that those ICT teachers in Somalia face many educational, financial, security, administrative problems and many others. The present study was aimed to identify various problems faced by ICT teachers of the universities in Somalia. The population of the study comprised of All ICT teachers at seven selected universities in Mogadishu, the capital of Somalia. A questionnaire was used for gathering information regarding the opinions of ICT teachers at the seven selected universities in Mogadishu regarding the problems they were facing. The main findings of this study indicated that ICT teachers face number of problems in different areas. They face educational problems such as lack of good teaching materials. Related to professional development there is no quality training program for them and they are also not provided opportunity for higher studies. The promotion policy is not followed properly and there is a need to change promotion policy as it is discriminatory. ICT teachers also face financial difficulties as they have indicated; especially they need improvement in salary scale and also other facilities that are poor or nonexistent. From the analysis of narrative data it was also found that ICT teachers were not satisfied with the fringe benefits, their pay scale and teaching load. At the end of the study recommendations were made to improve their working conditions, promotion policy, professional development program, and solve other problems mentioned above.

# CHAPTER I

## INTRODUCTION

### 1.1 Background of the Study

Information and Communication Technology (ICT) can be described as the integration of a variety of electronic tools that deliver and exchange information to enhance the quality of life, unconstrained by location, time and distance.

The delivery and/or information exchange mechanisms of ICTs include hardware: televisions, computers, cellular telephones (and related devices), radios, video-discs (both analogue and digital), the Internet, personal digital assistants (PDAs), CD-ROMs, etc.; and software: Internet browsers, word-processing, spreadsheets, desk-top publishing programs, simulation and presentation packages, etc.

According to Admire Kachepa (2008), ICT is now essential for the effective administration of businesses, colleges and universities. Information and communication Technology (ICT) has grown tremendously around the globe particularly in the developed nations of the world. This growth however appears to be relatively slower in the developing nations including African nations.

The Partnership for Higher Education in Africa in a recent workshop survey indicated that while some governments have produced national policies on ICT, many others are yet to do so (Aguale, 2012). ICT has been applied in many walks of life, including social, political, economical, and educational fields.

In fact it is hard to imagine life without ICT, and more importantly in the social welfare and pedagogical practices. ICT has found a great application and pedagogy in higher education institutions all over the world. Most universities nowadays have special departments and programs designed solely for sake of ICT.

This however is only the beginning and the application and integration of ICT in educational institutions, and particularly the Somali universities have a long way to go to apply ICT in their pedagogical and teacher training as well as administrative practices, as they face many physical, financial and human resource needs. ICT teachers in particular face many challenges in the use and integration of ICT in their teaching activities. These difficulties



stem from many issues, from lack of government support, financial constraints, lack of training and many other issues. Therefore ICT integration into universities and educational practices depends not only on the institution having financial resources, but also in its ability to train and equip their teachers to use the technology in their teaching learning practices.

## **1.2 ICT in Somalia**

According to wikipedia, Somalia now offers some of the most technologically advanced and competitively priced telecommunications and Internet services in the world.

After the start of the civil war, various new telecommunications companies began to spring up and compete to provide missing infrastructure.

Funded by Somali entrepreneurs and backed by expertise from China, Korea and Europe, these nascent telecommunications firms offer affordable mobile phone and Internet services that are not available in many other parts of the continent.

Customers can conduct money transfers (such as through the popular Dahabshiil) and other banking activities via mobile phones, as well as easily gain wireless Internet access.

Somalia is currently in the midst of a telecommunications boom driven by private investors, who have created a mass market with the cheapest calling rates in Africa.

Private investors have put an estimated \$194 million into Somalia's telecommunications sector over the last ten years (AMISOM, 2010). Osman (2012) Indicated that the following figures indicate how telecom sector has been recently growing rapidly in Somalia:

1. Somalia has the lowest international call rates in Africa and one of the cheapest in the world (CIA World factbook, 2012)
2. 34% of adults in Somalia use mobile money (World Bank, 2012)
3. \$1.6bn money remittances are handled annually (CIA World factbook, 2012). Table 1 provides a snapshot of the state of ICT infrastructure in the country (CIA, 2007).

**Table 1-1: ICT infrastructure and usage in Somalia**

<b>Indicator</b>	
Telephone lines	100,000 (2005)
Mobile phone subscribers	500,000 (2005)
Internet users	90,000 (2005)
Television stations	4 (2001)
Internet hosts	3 (2006)
Radio stations	11 FM;1 shortwave (2001)

The seemingly healthy ICT infrastructure is found mostly in the urban centers, especially the capital city, Mogadishu. This translates to limited use of ICT in the schools, most of which are located outside of Mogadishu. Policy efforts have been focused on reviving the education system, increasing enrolments, and reducing the school drop-out rate and not ICT.

There are some private schools that use ICT but more as an administrative tool than as something integrated into teaching and learning. Most of these schools are around the urban centers, especially Mogadishu and in the semi-autonomous province of Puntland (hare, 2007). The UNDP, together with other partners including the World Bank and the African Virtual University (AVU), are supporting the Somali Institutional and Capacity Development project (SICAD) whose outputs include capacity-building of key government bodies, civil service training, and tertiary institutions through increased use of ICTs (UNDP, 2007).

The Online Distance Learning (E-learning) Initiative which was launched in 2005 enables students to attain internationally accredited university qualifications and build their research capacities through expanded access to global learning and knowledge through partnerships with institutions in other countries.

The six institutions being supported by UNDP under the World Bank Low Income Countries Under Stress (LICUS) Distance Learning and Connectivity Project are East Africa University (Bossaso), Puntland State University (Garowe), the Somali Institute of Management and Administration Development (SIMAD) (Mogadishu), Mogadishu University, University of Hargeisa and Amoud University (Borama). They are also part of the African Virtual University (AVU) network giving them access to digital resources and on-line short courses. Long courses in journalism and teacher education are underway (WorldBank, 2011).

ICT is mainly offered as a subject in most primary and secondary schools and as a department in most universities in Somalia. In primary and secondary schools, students are mainly taught the basic ICT skills and applications, but in the university level students specialize ICT as an academic field.

Even though Universities in Somalia are increasing in quantity year after year, the quality of ICT courses and teachers is very low. Similarly the teachers of ICT courses in these universities face a lot of problems mainly in the form of inadequate knowledge of the subject matter, lack of administrative support, government support, financial difficulties and many others.

There are also unique challenges that teachers face in terms of educational issues such as lack of teaching skills, lack of teaching aids, lack of adequate salary, lack of in-service training, etc. Although the challenges of teachers in Somalia as a whole are enormous this study will shed some light on those problems and challenges associated with ICT teachers in Somalia.

This thesis is intended to study the challenges facing Information and Communication Technology (ICT) teachers who are teaching in Somalia universities. The main aim is to find out their problems in terms of their educational and financial issues.

### **1.2.1 Challenges of Teaching in Somalia**

Contemporary education in Somalia is hindered by the scarcity of trained teachers. Many teachers from the pre-1990 era have retired, left the country, or changed occupations. To fill the gap, untrained people with different levels of education joined the teaching service.

Many secondary schools employed engineers and scientists without education backgrounds to teach mathematics and sciences, while graduates of Islamic schools often teach Arabic language and Islam (ABDI, 1998).

To remedy the teacher shortage, international agencies and NGOs started short term in-service training workshops. Although not always well coordinated, these workshops place an emphasis on teaching methodology to enable instructors to cope with the daily challenges of classroom management and delivering the knowledge from the often-inadequate textbooks that happen to be available. Other promising initiatives include the recent establishment of teacher training institutions in Mogadishu, Garowe, and Amoud, which aim to prepare

teachers beyond basic subject matter and to provide formally recognized academic certification, namely, a post-secondary diploma in teacher education (Cassanelli, 2006).

Low pay and a perceived lack of professional development opportunities have discouraged many potentially qualified individuals from enrolling in these institutions, and “head-hunting” for prospective candidates is often conducted in a random and unprofessional manner. Nonetheless, local educators have begun the serious debate about such issues as the criteria and eligibility for admission to teacher training programs.

For example, should such programs follow the model of the old Scuola Magistrale by taking in middle school graduates? Or should they be willing to accept candidates with primary schooling, as the Siyaad Barre regime did? Or should the programs set the strictest standards and admit only secondary school graduates? Should training consist of at least two years for primary teachers and four years for secondary? Practical issues like adequate compensation, working conditions, and opportunities for further professional development will naturally determine how these debates are resolved, and whether there will even be an adequate pool of qualified candidates from which to draw (Abdulkadir, 2006).

Challenges of teachers in Somalia in general vary from individual teacher incompetence to managerial and administrative as well as financial and security problems. ICT teacher in particular face the most challenging issues such as physical, financial, and lack of equipment. Working conditions are also very dire in most areas in Somalia due to insecurity. The present study aims at identifying problems faced by ICT teachers of universities in Somalia

### **1.2.2 ICT in Higher Education in Somalia**

ICT are now vital to support the business of educational institutions, and support the full academic lifecycle, in terms of learning and teaching from initial students enquiries through to accreditation and graduation and in terms of research from initial bid writing through to project delivery and dissemination on. It includes six main areas: pay roll and financial accounting, administration on of student data, inventory management, personnel records maintenance, library systems and learning management systems (UNESCO, POLICY BRIEF, 2012).

ICT has been greatly integrated in higher education in almost every country, and Somalia is no exception in this regard. In recent years most universities in Somalia began offering degree in fields such as computer science, computer engineering, computer science and information technology, electrical and telecommunication engineering and many other ICT fields. However, the substantial increase of ICT departments in quantity did not accompany in qualitative education and the country remains poor in terms of ICT workforce.

Although the situation of ICT integration in higher education institutions remains one of the poorest in the world, yet it is advancing rapidly. In recent years there have been great debates between the private sector who are the potential employers of the graduates of these institutions and university managements in all over the country to try and discuss the way forward. Some telecommunications companies even launched their own private ICT institutions to keep up with their employee requirements with purpose of enhancing the quality of the graduates. At the end of the day the degree of ICT integration into Somali higher education depends on the comprehensive approach by private sector, the government and institution managers.

### **1.2.3 ICT in Technical and Vocational Education in Somalia**

Information and Communication Technologies (ICTs) are keys in the provision of TVET. Around the world, gaining employment increasingly depends on a person's ability to effectively and efficiently use ICTs. ICTs facilitate the implementation of education and training, the provision of learning content, and communication between teachers and learners. ICTs need to be harnessed with the purpose of providing more widespread access to TVET. While the use of ICTs is expanding rapidly, major challenges are faced in terms of capacity development, access, connectivity, and localization, customization and content development in every country (UNESCO-UNIVOC, 2013).

But there are even further implications. Around the world, gaining employment increasingly depends on a person's ability to effectively and efficiently use ICTs. ICTs also simplify and accelerate information and knowledge sharing about TVET, so that best practices and lessons learned can easily be disseminated. ICTs facilitate the administration of education and

training, the provision of learning content, and communication between learners and between teachers and learners (unesco, 2012). In Somalia, before the collapse of the Siad Barre government, ICT was not one of the vocational course because before nineteen nineties technology was somewhat in its early days and was also very expensive.

Since at the time Somalia was a third world country and the technology was very expensive even in the developed nations, the government did not give so much attention to ICT rather other technical and vocational trades were given emphasis over ICT.

The collapse of the Somali state in 1991 coincided with the increase and massive reduction in cost of technological advancements. Many Somali businesses turned their attention to the new trend so that they can profit from it. Many vocational schools which are privately owned also began offering the ICT courses such computer skills, telecommunication and networking skills for the youth.

### **1.3 Statement of the Problem**

Ever since the collapse of the Somali Government in 1991, teachers at the higher educational institutions in Somalia have been suffering from variety of problems, especially those teaching ICT at the university level. The present study aimed at identifying the problems faced by Information and Communication Technology (ICT) teachers of universities in Somalia.

### **1.4 General Objective of the Study**

The general objective of this study was to identify the major problems of ICT teachers of universities in Somalia.

### **1.5 Specific Objectives of the Study**

The specific objectives of this study were to find out the following problems:

- Educational problems
- Financial problems
- The problems regarding professional development

- Administrative problems
- Security problems
- The problems regarding the fringe benefits

## **1.6 Significance of the Study**

It is expected that the findings of this study will make a significant contribution to the effective development of ICT integration in teaching learning in Somali universities in general and ICT departments in particular.

Results of this study will give the stakeholders such as the university administrators, educational boards and government officials a reliable data about the situation of ICT in Somali universities.

The results will enable the stakeholders to be aware of the problems and challenges that ICT teachers face so that they can take decisions accordingly.

The findings of the study will also enable the teachers themselves to be heard and it will provide them the opportunity to express themselves and make their complaints known to the public as well as the stakeholders.

The findings of this study will be useful to the government as well as the higher education institutions and boards.

## **1.7 Delimitation**

The study was delimited to:

1. Mogadishu, the capital of Somalia since the highest number of universities was in the capital.
2. The study was focused on only ICT teachers' problems.
3. The data was collected from only (7) seven out of (44) Forty four universities in Somalia.
4. The seven selected universities were: Somalia International University, Simad University, Banadir University, Jazeera University, Indian Ocean University, Plasma University of science and technology, and university of Somalia.

## 1.8 Assumptions

- The researcher assumed that all universities have got ICT departments.
- The researcher also assumed that different ICT teachers at the ICT departments of the different universities faced different problems.
- The researcher also assumed that the ICT teachers would give honest and unbiased responses to the research questions.

## 1.9 Definition of Terms

### Hardware

Computer hardware is the collection of physical elements that constitutes a computer system.

### Software

Computer software, or simply software, also known as computer programs, is the non-tangible component of computers.

### ICT infrastructure

ICT Infrastructure offers a range of technologies to assist organizations in running efficiently. These services are essential to the everyday mechanics of an organization and integral to effective service delivery.

### Internet

The Internet is a global system of interconnected computer networks that use the standard Internet protocol suite (TCP/IP) to serve several billion users worldwide.

### Telecommunications

Telecommunication is communication at a distance by technological means, particularly through electrical signals or electromagnetic waves.

### Computer Network

A computer network or data network is a telecommunications network that allows computers to exchange data.

### E-learning

E-learning (or eLearning) refers to the use of electronic media and information and communication technologies (ICT) in education.

### ICT in education



Information and communication technologies in education refer to teaching and learning the subject matter that enables understanding the functions and effective use of information and communication technologies (ICTs).

## **CHAPTER II**

### **THE REVIEW OF RELATED LITERATURE**

While it is recognized that the use of instructional technology in the higher education teaching and learning processes is still in its infancy in Somalia, ICT instructional use is vital to the progress and development of faculty and students alike. Higher education institutions, especially those in the Capital Mogadishu, have adopted ICT as a means to impart upon students the knowledge and skills demanded by 21st century educational advancement (UNESCO, 2002).

According to UNESCO (2002), ICT now permeates the education environment and underpins the very success of 21st century education. ICT also adds value to the processes of learning and to the organization and management of learning institutions. Technologies are a driving force behind much of the development and innovation in both developed and developing countries.

As such, all countries must seek to benefit from technological developments. To be able to do so, professionals (including faculty) have to be educated with sound ICT backgrounds, independent of specific computer platforms or software environments, to meet the required competencies of the ever-changing global environment.

When ICT in education does not achieve expected goals or when it introduces complicated educational reforms, students and teachers can lose focus on the essentials and become distracted by the rapidly changing technologies themselves. This result is likely when students and teachers have not been able to acquire a full understanding of the technologies, the role ICT plays and where, how and what technology to use. When the meaning of ICT and its unlimited potential in the educational arena are understood, rapidly changing technologies are not seen as overwhelming, but as enablers of greater critical thinking and problem solving in education (Osuagwu, 2009).

## **2.1 Introduction to ICT in Somalia**

Information and communication technologies (ICTs) are a diverse set of technological tools and resources used for creating, storing, managing and communicating information. For educational purposes, ICTs can be used to support teaching and learning as well as research activities including collaborative learning and inquiring. One of the main applications of the ICTs in higher education is teaching and learning based on these new technologies.

Despite instability in some parts of the country, Somali has a growing and competitive Information and Communication Technology (ICT) sector which is completely under the control of the private sector. The country has internet connectivity to almost 53% of the whole area of the country and the Internet business is mushrooming in the country and becoming one of the fastest growing services along with telephony. By the end of 2005 there were more than 0.5 million users of Internet services in the country with 22 established ISP and 234 cyber cafes with growth of 15.6% per year (SICTDA, 2012).

### **2.1.1 ICT Teaching at the School Level in Somalia**

The integration of ICT into education has developed in different ways in different countries and regions, at different times – sometimes starting at the upper secondary level and spreading downwards through the lower secondary to primary to early childhood education; sometimes at the primary level spreading both upwards and downwards; sometimes through the establishment of Computer Science or Informatics or ICT as a school subject, which then broadens out to affect other subjects and other teachers.

Somalia is not different in the sense that ICT is offered in both secondary and primary school level and it is taught both as a subject in itself and also as a teaching aid for other subjects that students are taking in secondary and primary education.

But there are many challenges facing this process even though the ministry of education (MOE) is trying its best to integrate ICT in the school level so that students can equip themselves to their quest for technological advancement of their country.

Since the introduction of the ICT in Schools Initiative the Somali Government has made a substantial investment in the integration of ICT in teaching and learning (Abdi, 2011).

### **2.1.2 ICT teaching at the University Level in Somalia**

In Somalia ICT was originally applied to serve as a means of improving efficiency in the educational process. Furthermore, it has been shown that the use of ICT in education especially in higher education can help improve memory retention, increase motivation and generally deepens understanding (Farah, 2006). ICT teaching in university level in Somalia is also necessary promote collaborative learning, including role playing, group problem solving activities and articulated projects. Generally, ICT is promoting new approaches to working and learning, and new ways of interacting (Abdulkadir, 2008). Majority of faculty members of the ICT departments in Somali universities are major catalyst to promote the necessary changes and to equip students with the skills they are expected to have upon graduation (Yahya, 2008).

In Somali higher education systems, there has been a significant shift in enterprise training policy in recent years. In the other words, ICT learning and utilization in Somali higher education institutions is one of the most concerns of educational issues in the country and for a number of years there has been evidence in the training and development area. It is essential that the pedagogy of ICT becomes the main focus of staff development in Somali universities and this will have to build upon in a constructive manner in order to allow instructors to achieve the full benefits of using ICT in their daily tasks. It is generally understood that university teaching and learning refers to both the contents (skills, understandings and values) and the processes of teaching in higher education. In the case of an institution's internationalization efforts, this may apply to both the 'what' and the 'how' of teaching and learning, usually with reference to educational borrowing or lending from international sources. Somali universities like other higher education institutes in the region are in the process of internationalizing their respective curricula (Yahya, 2008).

Decision on teaching and learning activities in higher education can be done in various levels, including academic members, departments, and faculties as well as university levels. The main focus of this research is exploring problems faced by Information and Communication Technology (ICT) teachers of universities in Somalia. There are important matters in relation with this subject, which the researcher is going to clear them.

## 2.2 Overview of ICT Policies in Somalia

Information and communication technologies are a key input for economic development and growth. They offer opportunities for global integration while retaining the identity of traditional societies. ICT can increase the economic and social well-being of poor people, and empower individuals and communities.

ICT can enhance the effectiveness, efficiency, and transparency of the public sector including the delivery of social services.

In Somalia, the national ICT policy development process was initiated in 2011 by the Somali Ministry of Information, Telecommunication, Post and Transportation (MITPT). Two years later in 2013 the ministry submitted a draft of national ICT policy framework to the cabinet which was approved.

The policy framework document recognized that Somalia would need to embrace the goal of lifelong education for all.

Secondly the policy addresses literacy improvement and human resource capacity-building with strategies that include:

- Integrating ICT into mainstream educational curricula as well as other literacy programs to provide for equitable access for all students regardless of level.
- Developing and managing ICT centers of excellence to provide basic and advanced ICT training.
- Setting up mechanisms that promote collaboration between industry and training institutions to build appropriate human resources capacity.
- Promoting the twinning of training institutions in Somalia with those elsewhere to enhance skills transfer.

The policy is based on the premise that ICT use is a key skill required for a rapidly increasing range of jobs, and developing good ICT skills in young people can help them find employment.

Furthermore, the presence of a workforce with good ICT skills can help in attracting a growing industry and increasing employment.

However, the experience of introducing different ICTs in the classroom and other educational settings all over the world over the past several decades suggests that the full realization of the potential educational benefits of ICTs is not automatic.

## **2.3 Importance of ICT at the University Level in Somalia**

The recent century has been characterized with some new and outstanding technologies impacting human life, the most important of them is Information Technology. Researchers conducted in both developed and developing countries prove that the educational authorities in these countries among their other activities have given the priority of “ICT Literacy” through developing various educational programs (Tapscott, 1998). In the other words, ICT learning and utilization is one of the most concerns of educational authorities around the world and for a number of years there has been evidence that a training and development area, which may be labeled information literacy is being formed (Edwards, 2006).

There are reasons, today, necessitated the ICT teachers of universities in Somalia to be equipped with new technologies, especially ICT applications in higher education.

Increased number of students in ICT departments of Somali universities, greater demand for the use of the virtual materials within and outside of the university, an increase in the amount of educational activities being done by information and communication technology, changes in the nature of teaching and learning and becoming more and more web based (i.e. more use of CD-ROMs, electronic journals, on-line sources of materials, etc.), and the development of new and cheaper computers, are among the main reasons more attention is paid to ICT teachers of authorities in Somalia. The roles and responsibilities of ICT departments’ faculty members are closely tied to the central functions of higher education. Broadly defined, ICT faculty fulfils three primary functions at University: ICT teaching, ICT research, and ICT service. The teaching role of ICT faculty members reflects their centrality in addressing the primary educational mission among colleges and universities in Somalia. ICT faculty members of universities in Somalia are expected to provide instruction and student advising as assigned by the departmental chairman. In brief the main aspects of teaching responsibilities of ICT faculty members of universities in Somalia are ICT classroom teaching, ICT academic advisement, ICT course development, ICT academic program review and ICT course duplication review, all of them can be categorized as ICT curriculum development process. If ICT tools are to improve institutional effectiveness and efficiency, it is obvious that their application in support of teaching and learning should be seriously considered. However, investments in this area should always be carefully balanced against other ways in which teaching and learning may be improved and strengthened.

ICT enable new ways of producing, searching and sharing information and knowledge. As the amount of information is rapidly increasing, it has become even more important to manage complex entities and to recognize relevant and reliable information and knowledge.

A UNESCO report produced in 2005 lists seven ways in which technologies can be used in education. Firstly, it can improve administrative efficiency and provide a pan-instructional IT infrastructure for managing the different aspects of learning, teaching and research.

Secondly, ICT can be used to disseminate teaching and learning materials to teachers and students, usually through an institutionally supported VLE/LMS. In addition, many universities now have Learning Object or Open Educational Resource repositories. Similarly, most institutions have an open access research repository and increasingly academics are required to deposit their research outputs in the research repository.

These are also increasingly being used in terms of research accountability, both for internal promotion and in terms of returns for national research assessment exercises. For example, in the UK, there is an assessment exercise every four years and academics are expected to identify their four main research outputs.

Thirdly, they can be used to improve the ICT skills of teachers and students and their digital literacies and competences. Most institutions have a range of online resources to help teachers and students to develop their digital literacy skills and for students to develop good practices in terms of study skills.

Resources are also usually available to help teachers make effective use of technologies in the design of courses.

Fourthly, they allow teachers and students access to sources of information from around the world. Increasingly, teachers and students are augmenting institutional IT systems and resources, with tools and resources freely available on the web. Increasing use is being made of cloud computing technologies for example.

## **2.4 Importance of ICT in Classroom Teaching-Learning Process**

For most countries, the use of ICT in education and training has become a priority during the last decade. However, very few have achieved progress. Indeed, a small percentage of schools in some countries achieved high levels of effective use of ICT to support and change

the teaching and learning process in many subject areas. Others are still in the early phase of Information and Communication Technologies adoption.

The benefits of ICT in classroom teaching learning process include that ICT has positive impact on students' performances in primary schools particularly in English language and in science.

In addition, schools with sufficient ICT resources achieve better results than those that are not well-equipped. There is a significant improvement on learners' performances. Finally, teachers become more convinced that educational achievements of pupils are due to good ICT use.

Many students consider ICT tools very helpful in that it helps them to do assignments teachers see that ICT enables students with special needs or difficulties. It also helps to reduce the social disparities between students, since they work in teams in order to achieve a given task. Students also assume responsibilities when they use ICT to organize their work through digital portfolios or projects.

The ICT Test Bed evaluation (Underwood 2006) provides evidence that many teachers use ICT to support innovative pedagogy. It states: "New technologies that provide a good fit with existing practices, such as interactive whiteboards are first to be embedded, but others like video conferencing, digital video and virtual learning environments are now being incorporated, providing evidence of ongoing learning by the workforce. Training needs to continue to support innovative pedagogy." Both examples show that ICT is being integrated in a continuous process.

Therefore, ICT can improve teaching by enhancing an already practiced knowledge and introducing new ways of teaching and learning. Transforming teaching is more difficult to achieve. "Changes that take full advantage of ICT will only happen slowly over time, and only if teachers continue to experiment with new approaches." (Underwood, 2006). This evaluation came from a teacher training seminar in IT during the ITMF project. It showed that teachers have not fully changed their use of ICT in education; however, most of them changed their way of thinking about the application of ICT in education. Teachers have increased their use of ICT in lessons where students look for information on the net and use it



afterwards for subject specific areas, but hardly any use of ICT for class presentations. Nonetheless, teachers do not make use of ICT to engage students more actively to produce knowledge. Similarly, the e-learning Nordic study shows an increase in the use of ICT to teach but not to innovate teaching methods: “ICT generally has a positive impact on teaching and learning situations, but compared with the ideal expectations; the impact of ICT on teaching and learning must still be considered to be limited” (Ramboll, 2006).

Many teachers use ICT to support traditional learning methods, for example, information retrieval in which students are ‘passive learners of knowledge instead of ‘active producers able to take part in the learning process.

In a document entitled teaching and learning with ICT, G. Galea (2002) explains how ICT can promote teaching and learning. According to her there are two main reasons behind increasing the use of ICT in education.

Firstly, ICT can change the lessons’ pace: she stated that children in modern society need to develop sufficient potentials and skills that enable them to take full advantage from the new opportunities that ICT offer. Second, there are groundswells of interest of academic researchers in how technological tools can enhance the quality of teaching and learning in schools, and so help learners to achieve better outcomes.

Furthermore, it has been proved that new technologies have lots of benefits on the students. ICT allow for a higher quality lessons through collaboration with teachers in planning and preparing resources. Students learn new skills: analytical, including improvements in reading comprehension. ICT also develop some writing skills: spelling, grammar, punctuation, editing and re-drafting. Still new technologies encourage independent and active learning, and students’ responsibility for their own learning.

ICT proves that students who used educational technology felt more successful in school they are more motivated to learn more and have increased self- confidence and self-esteem. It is also confirmed that many students found learning in a technology-enhanced setting more stimulating and much better than in a traditional classroom environment.

## **2.5 Factors influencing Effective ICT teaching in Somali Universities**

It can be noted that there are several factors pertaining to effective ICT teaching in Somali universities such as lack of effective National Policy for using ICT in Higher Education, lack of adequate investments, cultural obstacles, financial challenges, lack of continuity in ICT use, and lack of systematic training and development programs.

Regarding this challenges, it should be considered that the higher education system of Somalia was centralized and, all general decisions used to be made at central level during the rule of former military government. Among different programs taught in Somali universities, ICT teaching is an essential and important one. However, the scope and the rate of teaching ICT in Somali universities are determined by different parties, which play major roles in this regard.

This situation reflects the limited authority of universities in providing the financial and physical supports for ICT teachers. However, there are problems related to unfamiliarity of teachers with software, which can be used in their teaching, lack of culture of working in web environment, and faculty and student disability in using ICT in teaching and learning which refer to an important concept of "ICT competency" of faculty members in the university.

In the same way some important facilitating factors such as providing training programs, keeping academics informed on new developments in ICT, improving faculty members' belief on effectiveness of ICT and other factors imply on "ICT literacy" of teachers in higher education community in Somalia.

Regardless of the low rate of participation of faculty members in ICT workshops and training and development events, consequently most important prerequisites of ICT application in the universities are providing a basic set of ICT competencies that allow development of meaningful faculty members' development programs in order to integrate ICT into academics' teaching and learning to advance student learning and to improve other professional duties.

Under such circumstances, with respect to importance of IT Literacy training in promoting internationalization of campus and doing different duties of university faculty members, assessing ICT literacy of teachers and designing an specific program based on this assessment will be a real need for higher education community in Somalia.

The factors are divided into major and minor factors and it is explained in detail below:

### **2.5.1 Major Factors**

The major factors include the following:

- Educational factors such as lack of sufficient background knowledge and qualifications as well as sufficient competency.
- Financial factors such as lack of adequate resources allocation to ICT teachers
- Factors related with security and political issues since Somalia continues to face serious political problems that have disrupted the education system. This instability does not provide an enabling platform for effective ICT teaching in Somalia.
- Factors related to cultural issues as many intellectuals and teachers consider ICT as means that opens doors of obscenity and other cultural misconceptions since one of the biggest challenges for education experts in Somalia is the nomadic nature of communities. It has been difficult to retain children in school due to this lifestyle and by extension a challenge to teach ICT effectively.
- Factors related with administration such as lack of coordination between the university administrators and the ICT teaching staff. Furthermore ICT teachers do not have good relationships with higher authority so that the teaching-learning process can be completed successfully.
- Factor related to infrastructure and bandwidth cost since the war destroyed most of the basic telecommunications infrastructure. New wireless networks are coming into place and providing the much-needed connectivity, albeit in the commercially viable places. Most of these wireless technologies are based on costly satellite networks.

### **2.5.2 Minor Factors**

The minor factors that stand in the way of effective teaching of ICT in Somali universities include but not limited to the following:

- Lack of computers: Desktop and Lap-top are still very expensive in Somalia such that ICT teachers are unable to acquire one for their academic utilization. It is unfortunate to note that government agencies, non-governmental agencies (NGO) corporate organizations and individuals have not in any way been able to assist ICT teachers

with donations. There are still large percentages of ICT teachers in Somali universities who are still unable to purchase computers for use.

- Lack of electricity since Somalia is a developing nation it cannot boast of twenty four hours electricity supply to its citizens. The institutions are directly connected to Privately Owned and fragmented companies; therefore no adequate electricity of power is supplied to the universities. It is on a sad note that some of the ICT faculties and departments of the Somali universities cannot afford a generating set that can power the entire computer for teaching and learning. Consequently, both the teachers and students are handicapped and may not be able to offer the lesson.
- Lack of internet and slow connectivity since some of the Somali universities are not able to connect to the World Wide Web, even if the universities are connected, ICT departments where students are to be taught information and communication technology is not connected due to the high costs involved in the connection.
- Obsolete computers: since Somalia is a developing nation with high rate of poverty it has become a dumping ground for all sorts of old and dead computers.
- Lack of gender inequity since war, poverty, and community disparity are among the factors that have worked against education for girls. UNICEF and other UN organizations, NGOs, and local communities are making deliberate efforts to encourage enrolment for girls and even teacher-training for women in ICT.
- Arrival of new technologies since wireless technologies has started to come into Somalia. With these technologies, there are possibilities that deployment into the education sector can come fast if the policies are put in place.

## **2.6 Main Problems of ICT at the University Level in Somalia**

### **2.6.1 Absence of Learning Management Systems**

In terms of managing the delivery of courses the Somali universities have to use Virtual Learning Environments (VLEs)/Learning Management Systems (LMSs).

Three of the most popular LMSs are Blackboard, Moodle and Sakai. LMSs provide a hub for learning materials and course delivery and often also cover the management of course registration, course scheduling, discussion forums, blog sites, student scores, and student transcripts.

LMSs contain a number of tools for presenting learning materials, for communication and collaboration and for managing assignments. These include tools such as blogs, wikis and e-portfolios. For most institutions the LMS is the most significant enterprise application for learning and teaching.

JISC provide a list of the main functionality associated with an LMS.<sup>7</sup> these include: controlled access, via a password to the courses that the student is taking. Also student tracking in terms of what materials they are accessing and how long they are spending on them. Learning analytics has emerged as a new research field in recent years.

Tools and dashboards are being developed to harvest the data available from LMSs in terms of what the students are doing. These tools can be used by academics to monitor student progress and identify students who are having difficulties and also by students themselves in terms of monitoring their progress. The LMS records system has basic information about students, such as: registration details, course details, course prerequisites, qualification aims, study time and tracking information. LMSs are also used as repositories for learning resources and materials. These might be produced by the course designer, may be commercial materials or alternatively may be freely available Open Educational Resources (OER) or commercial materials. Materials can be presented in a variety of formats from simple text to interactive multimedia. There are also a number of tools to support the students in their learning, these include: assessment tools (both e-submission systems for assignments as well as e-assessment tools), and tools for communication and collaboration.

A range of tools are provided to support interactions between students and between students and their tutors. There are three basic methods of communication tools common in LMSs: email, discussion forums and chat rooms. Tools may also be included to enable students to publish materials either via an uploading facility, through a blog or a wiki. Within the LMS it is possible to link to other web-based resources, such as other sites of relevance in the institutions, for example library resources and links, as well as external links. Most LMSs integrate with core administrative/management systems that are IMS standards compliant.

Data can be seamlessly shared between the VLE and the MIS system.

A JISC CETIS report provides a good overview of Learning Management Systems. The report describes the current status of LMSs and their relationship to cloud computing.

All these LMS facilities are nonexistent in Somalia universities.

## **2.6.2 Lack of Human Resource Systems**

A human resource information system is a system used to acquire, store, analyze and distribute information. Human Resource systems cover the management of the entire working life cycle of an employee from the planning of the recruiting phase all the way to the end of employment. IT systems are now common for payroll, basic employee records and recruitment.

The payroll system automates the pay process by gathering data on employee time and attendance, calculating various deductions and taxes, and generating periodic pay cheques and employee tax reports. Data is generally fed from the human resources and time keeping modules to calculate automatic deposit and manual cheque writing capabilities. The time and attendance system gathers standardized time and work related efforts. The benefits of an administration system are that it allows an institution to administer and track employee participation in benefits programs. The HR management component records basic demographic and address data, selection, training and development, capabilities and skills management, compensation planning records and other related activities. Online recruiting tools have become one of the primary methods used by HR departments to garner potential candidates for available positions within an organization.

### **2.6.3 Lack of Open Educational Repositories**

ICT departments of universities in Somalia lack OER repository, which provides free access to learning materials. Systems they are lacking include: repurposing the institutional VLE (for example the Openlearn repository developed by the Open University UK is hosted on Moodle), using a blogging tool (such as wordpress for example), or simply as a series of static web pages.

In addition, they do not have a research repository where academics can deposit their research outputs. Two popular systems are the ePrints system developed by the University of Southampton and DSpace.

Furthermore Somali universities do not have institutional research data management systems, which allow the users to store information on their publications, professional activities and working relationships.

A JISC CETIS report describes the challenges and opportunities of OER. It positions OER in the context of the wider notion of openness and in particular lists the following as important initiatives and programs: the Open Source Initiative, the Open Content Initiative, the Open Access Initiative, and Creative Commons.

### **2.6.4 Absence of Timetabling and Resources Allocation**

The Somali Universities do not have means to use technologies to support timetabling and resource allocation. There are three main areas they are lacking behind in terms of using ICT for timetabling and resources allocation: requirements identification (identifying all requirements for teaching and learning activities), scheduling (identifying date and time of activities) and location allocation (allocation of rooms and other resources to activities).

### **2.6.5 Inappropriate Students Record Systems**

Student Record Systems (SRS) manage student data and are a central part of the core administration function for every institution. SRS support the maintenance of personal and study information relating to:

- Handling inquiries from prospective students

- Handling the admissions process
- Enrolling new students and storing teaching option choices
- Automatically creating class & teacher schedules
- Handling records of examinations, assessments, marks, grades and academic progression
- Maintaining records of absences and attendance
- Recording communications with students
- Maintaining discipline records
- Providing statistical reports
- Maintenance boarding house details
- Communicating student details to parents through a parent portal
- Special Education / Individual Education Plan (IEP) services
- Human resources services
- Accounting and budgeting services
- Student health records

All these facilities are not there in ICT departments of universities and higher educational institutions in Somalia.

## **2.6.6 Inefficient Library Management Systems**

Library systems cover all aspects of the management of library materials both physical and digital. This includes the following areas:

- acquisitions (ordering, receiving, and invoicing materials)
- cataloguing (classifying and indexing materials)
- circulation (lending materials to patrons and receiving them back)
- serials (tracking magazine and newspaper holdings)
- The public interface for users.

The JISC briefing paper provides a user overview of library management systems. The report states that the UK HE LMS market is mature and four main vendors (ExLibris, Innovative, SirsiDynix and Talis) have almost 90% of the market. It also lists five areas for future



development: i) Open Source Software, ii) Open data and platforms, iii) Clickstreams and context data, iv) vertical search and v) Universal Resource Management.

The helibtech site provides more detailed information; covering vendors and a range of upcoming issues and technologies. Further details of vendors are available online. The development of Mobile applications for libraries is a growing area. A recent ARL report provides a good overview of the current state of the field.

Managing identities is essential infrastructure for libraries to assign loan privileges, etc. as well as critical for many other areas, e.g. registration, payroll. EDUCAUSE defines this as: Identity management refers to the policies, processes, and technologies that establish user identities and enforce rules about access to digital resources.

Many information systems in educational institutions (such as e-mail, learning management systems, library databases, and grid computing applications) require users to authenticate themselves. An authorization process then determines which systems an authenticated user is permitted to access.

With an enterprise identity management system, rather than having separate credentials for each system, a user can employ a single digital identity to access all resources to which the user is entitled.

A JISC report argues that simple, secure access to digital resources allows institutions to manage their business systems efficiently and make more resources available to a wider range of internal and external users.

However, few institutions have identity management systems optimized to achieve these benefits.

Ther library management systems in Somali universities are in efficient in this regard and they do not have the sufficient manpower and competent professionals to do all the tasks required to be performed for developing effective nad efficein library mangement sytems using the ICT facilities that are availabel in the country.

## **2.6.7 Insufficient Institutional Repositories**

A digital repository is a mechanism for managing and storing digital content. Repositories can be subject or institutional in their focus. Putting content in an institutional repository enables staff and institutions to manage and preserve it, and therefore derive maximum value from it. A repository can support research, learning and administrative processes. Repositories typically use open standards to ensure that the content they contain is accessible in that it can be searched and retrieved for later use. The use of these agreed international standards allows mechanisms to be set up which import, export, identify, store and retrieve the digital content within the repository. There are a number of benefits of Open Access Repositories. Firstly, the content they house is more visible than the paper or commercially available digital version of the same content. Repositories can store a variety of different forms of content – sometimes new forms, as is the case with primary data. The ability to cross-search multiple formats in one search is helpful to the researcher and can encourage new forms of research based on published evidence and data. Secondly, materials such as PhD theses can get many more consultations in a repository than the paper equivalent. A paper thesis will often exist in a single copy, usually on closed access in a book stack. By comparison, an electronic copy in an Open Access repository may receive dozens of downloads each month. This is good for the author because it gives them, as a young scholar, greater visibility in their subject area. Thirdly, at a subject level, repositories have the potential to pull together content from a variety of different sources and so to become an important reference source which underpins future research in the subject. Fourthly, at an institutional level, university strategy documents are beginning to cite the institutional repository alongside the institutional publications database as core pieces of their research infrastructure. Fifthly, the emergence of new world and university rankings for repositories can only raise awareness at an institutional level of the importance of making research content generally available. Finally, in a world of social computing and social networking sites, repositories have the potential to be more sustainable and long term, given that they are managed by institutions or scholarly bodies with a mission to undertake and disseminate research.

## **2.6.8 Lack of Open Access Payment Management Systems**

A new, but fast moving area of importance is open access payment management systems. One of the implications of open access publishing is that we are moving from a wholesale model for supporting journal costs (publishers collect a single subscription payment from a relatively small number of institutions worldwide) to a retail model where authors 'pay' upfront for open access publication on an article by-article basis. This could mean hundreds of invoices per publisher per institution.

The Research Support Office at the University of Leicester is trialing a product from ingentaconnect, which brokers between the university, the research funder and the publisher. Research4life is an interesting program. All these systems are not used by the ICT teachers and administrators of universities in Somalia and they face many problems in this regard.

## **2.6.9 Challenging Finance systems**

In terms of Finance Systems there are a number of challenges that Somali universities are facing, such as: providing basic ledgers for purchasing, sales, fixed assets, and a general ledger to bring all transactions together for reporting purposes.

Payroll systems are also important and need to be linked to the HR functionality of systems. There are some areas where systems are more bespoke to higher education, for example systems to account for capital funding from funding bodies and for accounting for research grants and contracts. Many institutions use SAP and Agresso, who have a number of clients internationally.

One of the key challenges is how the financial system interacts with the student records system.

The Universities in Somalia face these challenges and they do not have the competent personnel to develop these facilities for them so that they can solve their financial information systems such the university accounting systems.

They do not use effective automated systems and most of their transactional are still paper based and not efficient in the sense they are error prone and vulnerable to theft.

## **2.6.10 Other Miscellaneous Problems**

### **Shortage of qualified and competent ICT workforce**

The biggest problem facing the employers in Somalia is the shortage and sometimes lack of skilled ICT workers to be employed that is, they argue, is the reason forced them to bring foreign experts to work for their companies and also they argue that the quality of the locally trained ICT graduates are not up to the international standards.

### **Quality of ICT Equipment is low**

Another problem which forces the companies to seek employees from abroad is that the quality of the equipment at the disposal of local students which are used in the different schools and universities is very low.

### **Lack of ICT regulations**

Since there is no effective government in the country, there is no regulation for ICT. Since ICT is relatively new the previous governments also did not anticipate the rules which are necessary. Newly-formed federal government did make one controversial media law but it does not say much about the ICT.

### **Lack of public-private partnership**

Also there is no good partnership between the weak government and the private sector so that their partnership can yield improvement in the quality of the ICT staff as well as the job opportunities for the local graduates.

### **Lack of Private-to-Private partnership**

The private sector themselves do not have good working relationship. Had there been good relationship the quality of ICT learning as well as the job opportunities would have been improved and that would have prevented the quality going downwards.

## CHAPTER III

### METHOD AND PROCEDURE

The chapter includes the method and the procedure used for the study.

#### 2.7 Design of the study

The study was quantitative and qualitative in nature.

##### 2.7.2 Population

The population of the study consisted of all ICT teachers of seven selected universities in Mogadishu.

**Table 3-1: Population Distribution from the seven Universities**

<b>University</b>	<b>Total Population</b>
Somalia International university	19
Simad University	9
Banadir University	8
Jazeera University	8
Indian Ocean university	13
Plasma university of science and technology	8
University of Somalia	11
<b>Total Population</b>	<b>76</b>

### 2.7.3 Sampling

Stratified random sampling method was used to select the ICT teachers in selected universities. Sixty ICT teachers were selected from the 7 Universities and the following formula was used to select the sample:  $SZ = [(NV * NS)] / NP$ .

Where SZ represented the size of the estimated population

NV= Number of the observation in stratum of the population

NS=Number of sample size considered

NP=Number of the true population in stratum

**Table 3-2: Showing the Sample of sixty ICT teachers from the Population of seventy six**

SI.NO.	Institution	Sample
1	Somalia International University (SIU)	$19 * 60 / 76 = 16$
2	Simad University (SU)	$9 * 60 / 76 = 7$
3	Banadir University (BU)	$8 * 60 / 76 = 6$
4	Jazeera University (JU)	$8 * 60 / 76 = 6$
5	Indian Ocean University (IOU)	$13 * 60 / 76 = 10$
6	Plasma University of Science and Technology (PUST)	$8 * 60 / 76 = 6$
7	University of Somalia (UNISO)	$11 * 60 / 76 = 9$
	<b>TOTAL</b>	<b>60</b>

### 2.7.4 Tools of Research

The researcher used 5-point likert-type questionnaire for gathering information regarding the opinions of ICT teachers, about the different problems that they faced in their universities. The questionnaire consisted of both structured and unstructured questions. The questionnaire was developed by the researcher under close guidance of the supervisor. The questionnaire was validated with expert's opinions. The experts were requested to provide their views and opinions on the different aspects of the questionnaire. In light of the expert opinion, the questionnaire was finalized. The scale values used were: SA= Strongly Agree (5), A= Agree (4), UD= Undecided (3), DA= Disagree (2), SD= Strongly Disagree (1).

### 2.7.5 Data Collection Procedure

Data was collected mainly through volunteers whom the researcher knew very well and who were ready to help in carrying the questionnaire to the respondents of various universities. Questionnaires were also mailed directly to the respondents whom the researcher had a contact with and the respondents mailed back the questionnaires. Out of sixty, fifty questionnaires were received. The rate of response is 83%.

### 2.7.6 Techniques of Data Analysis

The data from the questionnaires were tabulated in the form of the frequencies and percentages. Weighted average and chi-square test were calculated.

The chi-square value was compared with the critical value at 0.05 level of confidence.

**Table 3 -3: Interpretation of the Weighted Average**

<b>Weighted Average</b>	<b>Weighted Average Interpretation</b>
$4.5 \leq \text{Weight Average}$	Strongly Agree
$3.5 \leq 4.5 \text{ WA}$	Agree
$2.5 \leq 3.5 \text{ W.A}$	Undecided
$1.5 \leq 2.5 \text{ W.A}$	Disagree
$0 \leq 1.5 \text{ W.A}$	Strongly Disagree

## **CHAPTER IV**

### **DATA ANALYSIS AND INTERPRETATION**

This chapter presents the analysis and interpretation of data. The data from the questionnaires were tabulated in the form of frequencies and percentages. Separate tables were prepared for different parts of the questionnaires. Each table was followed by its interpretation.

A quantitative approach using different statistical methods was used for analyzing the data. Weighted average and chi-square values were calculated from the raw data gathered from the ICT teachers of selected universities. The significance level of confidence was 0.05 for chi-square analysis. The chi-square value and asymptotic sig. values were calculated for the interpretation of data.

The responses of the ICT teachers of the seven selected universities on the open ended questions were analyzed in narrative form at the end of the qualitative analysis.



**Table 4-1: Opinion of the ICT teachers regarding the educational problems**

No	Statement	SA	A	UD	DA	SD	WA	(N=50)	
								$\chi^2$	Asymp.Sig
1.	The standard of classroom is very good.	19	17	2	9	3	3.80	24.40	0.000
2.	24/7 electricity is available for all classrooms and labs.	8	7	9	4	22	2.50	19.40	0.001
3.	There are not enough teaching materials at your disposal.	5	23	6	9	7	3.20	22.00	0.000
4.	You are satisfied with size of the classroom.	4	25	10	5	6	3.32	30.20	0.000
5.	You are pleased with time duration of the class.	6	27	7	7	3	3.52	37.20	0.000
6.	You have not enough text and reference books for your course(s).	6	22	10	6	6	3.32	19.20	0.001
7.	The standard of the books and other teaching materials is good.	7	16	17	7	3	3.34	15.20	0.004
8.	The library of the university is well-equipped.	4	14	21	6	5	3.12	21.40	0.000
9.	The course content is updated regularly.	4	11	21	11	3	3.04	20.80	0.000
10.	Teachers are consulted about the curriculum matters.	5	9	22	13	1	3.08	26.00	0.000
11.	You have not free access to library resources.	0	8	23	9	10	2.58	11.92	0.008
12.	All computers in the labs have internet connection.	3	2	14	31	0	2.54	43.60	0.000
13.	There are enough technical staff in the laboratories.	0	4	8	27	11	2.10	24.40	0.000
14.	The labs are well-equipped with all the equipment and software packages you need.	2	5	22	11	10	2.56	23.40	0.000
15.	The technical staffs are competent and cooperative.	10	0	4	29	7	2.54	30.48	0.000

SA= Strongly Agree (5), A=Agree (4), UD=Undecided (3), DA=Disagree (2), SD=Strongly Disagree (1), WA= Weighted average

Table 4.1 shows that majority of the ICT teachers strongly agreed or agreed that:

- The standard of classroom is very good
- There are not enough teaching materials at their disposal.
- They are satisfied with size of the classroom.
- They are pleased with time duration of the class.
- They have not enough text and reference books for their course(s).

Majority of the ICT teachers strongly disagreed or disagreed that:

- 24/7 electricity is available for all classrooms and labs.
- All computers in the labs have internet connection.
- The technical staffs are competent and cooperative
- There are enough technical staff in the laboratory

When asked, the majority of the ICT teachers had divided opinions on:

- The standard of the books and other teaching materials is good.
- The library of the university is well-equipped.
- The course content is updated regularly
- Teachers are consulted about the curriculum matters.
- The labs are well-equipped with all the equipment and software packages they need.
- They have not free access to library resources

The values of chi square and weighted average were found to be significant at 0.05 level of confidence.

**Table 4-2: Opinion of the ICT teachers regarding the financial problems**

(N=50)

No.	Statement	SA	A	UD	DA	SD	WA	$\chi^2$	Asymp.Sig.
1.	You are satisfied with the salary you are getting at this university.	12	8	6	19	5	3.06	13.00	0.011
2.	You do not get any allowances	18	4	17	11	0	3.58	10.00	0.019
3.	The salary and other benefits are not provided equally to all the teachers.	2	13	20	12	3	2.98	22.60	0.000
4.	You work as part time in other university.	10	26	2	12	0	3.68	23.92	0.000
5.	Since your salary is low you do other business other than teaching.	6	26	2	13	3	3.38	39.40	0.000
6.	You get your salary and other allowances on time.	9	12	4	16	9	2.92	7.80	0.099
7.	The university covers some of your expenses such as bus fair.	13	8	20	9	0	3.50	7.12	0.068
8.	The university has to overload some teachers with more courses than they should because they cannot afford to recruit new teachers.	10	28	3	4	5	3.68	43.40	0.000
9.	The sources of income of the university are only from the fees taken from the students.	25	16	5	2	2	4.20	41.40	0.000
10.	Your university has a government's budgetary support.	3	14	6	2	25	2.36	37.00	0.000

SA= Strongly Agree (5), A=Agree (4), UD=Undecided (3), DA=Disagree (2), SD=Strongly Disagree (1), WA= Weighted average

In table 4.2 the majority of the ICT teachers strongly agreed or agreed that:

- They work as part time in other university.
- Since their salary is low they do other business other than teaching.
- The university has to overload some teachers with more courses than they should take because they cannot afford to recruit new teachers.
- The sources of income of the university are only from the fees taken from the students.

Majority of the ICT teachers strongly disagreed or disagreed that:

- They get their salary and other allowances on time.
- Their university has a government's budgetary support.

When asked, the majority of the ICT teachers had divided opinions on whether:

- They are satisfied with the salary they are getting at this university.
- They also get some allowances.
- The salary and other benefits are not provided equally to all the teachers.
- The university covers some of their expenses such as bus fair

The values of chi square and weighted average were found to be significant at 0.05 level of confidence.

**Table 4-3: Opinion of the ICT teachers regarding the professional development**

(N=50)

No.	Statement	SA	A	UD	DA	SD	WA	$\chi^2$	Asymp.Sig.
1.	The university does not conduct seminars and workshops for ICT teachers.	9	25	2	10	4	3.50	32.60	0.000
2.	You sometimes have opportunity to go abroad for training and seminars.	2	7	9	20	12	2.34	17.80	0.001
3.	The university does not undertake an assessment and evaluation of teachers' performances on regular basis.	9	25	3	9	4	3.52	31.20	0.000
4.	Students are not given evaluation sheets to assess teachers' teaching skills and performances at the end of each academic year.	9	21	6	4	10	3.30	17.40	0.002
5.	The university does not conduct short courses to improve the competency of ICT teachers.	7	27	4	8	4	3.50	37.40	0.000
6.	As a result of the in-service training your teaching skills have improved.	9	29	8	2	2	3.82	49.40	0.000
7.	As a result of improvement of your teaching skills the performance of your students has improved.	9	25	12	2	2	3.74	35.80	0.000
8.	You undertake steps to improve your teaching skills and methods.	17	31	2	0	0	4.30	25.24	0.000
9.	ICT teachers require more professional development.	23	27	0	0	0	4.46	0.32	0.572
10.	You have had no training before becoming a teacher.	18	30	2	0	0	4.32	23.68	0.000

SA= Strongly Agree (5), A=Agree (4), UD=Undecided (3), DA=Disagree (2), SD=Strongly Disagree (1), WA= Weighted average

In table 4.3 the majority of the ICT teachers strongly agreed or agreed that:

- The university does not conduct seminars and workshops for ICT teachers.
- The university does not undertake an assessment and evaluation of teachers' performances on regular basis.
- Students are not given evaluation sheets to assess teachers' teaching skills and performances at the end of each academic year.

- The university does not conduct short courses to improve the competency of ICT teachers.
- As a result of the in-service training their teaching skills have improved.
- As a result of improvement of their teaching skills the performance of their students has improved.
- They undertake steps to improve their teaching skills and methods.
- ICT teachers require more professional development.
- They have had no training before becoming teachers.

When asked, the majority of the ICT teachers had divided opinions on whether they sometimes have opportunity to go abroad for training and seminars.

The values of chi square and weighted average were found to be significant at 0.05 level of confidence.

**Table 4-4: Opinion of the ICT teachers regarding the security problems****(N=50)**

No.	Statement	SA	A	UD	DA	SD	WA	$\chi^2$	Asymp.Sig.
1.	The authority and the government do not provide protection for teachers.	21	22	2	3	2	<b>4.14</b>	<b>44.20</b>	<b>0.000</b>
2.	ICT teachers are subjected to security threats from some other actors.	12	14	9	7	8	<b>3.30</b>	<b>3.40</b>	<b>0.493</b>
3.	You are very much worried of your security.	22	11	4	7	6	<b>3.72</b>	<b>20.60</b>	<b>0.000</b>
4.	ICT teacher's personal computers are password protected.	14	23	2	6	5	<b>3.70</b>	<b>29.00</b>	<b>0.000</b>
5.	ICT teacher's data and resources are vulnerable to theft.	14	14	7	9	6	<b>3.42</b>	<b>5.80</b>	<b>0.215</b>
6.	The university employs security guards to protect its facilities.	18	22	4	4	2	<b>4.00</b>	<b>34.40</b>	<b>0.000</b>
7.	Your university is in very insecure area.	15	18	6	7	4	<b>3.66</b>	<b>15.00</b>	<b>0.005</b>
8.	Some teachers are housed at the university hostel because of security concerns.	6	17	5	8	14	<b>2.86</b>	<b>11.00</b>	<b>0.027</b>
9.	Laboratories are not well equipped and also not well protected.	11	15	11	11	2	<b>3.44</b>	<b>9.20</b>	<b>0.050</b>
10.	You experience some security dangers every day.	10	12	15	7	6	<b>3.26</b>	<b>5.40</b>	<b>0.249</b>
11.	The risk of personal security does not deter you of doing your job.	21	9	14	3	3	<b>3.84</b>	<b>23.60</b>	<b>0.000</b>
12.	Some ICT teachers have quitted their jobs because of security threats.	10	13	9	6	12	<b>3.06</b>	<b>3.00</b>	<b>0.558</b>
13.	Physical security is much more serious in Somalia than electronic security.	21	17	8	1	3	<b>4.00</b>	<b>30.40</b>	<b>0.000</b>

SA= Strongly Agree (5), A=Agree (4), UD=Undecided (3), DA=Disagree (2), SD=Strongly Disagree (1), WA= Weighted average

Table 4.4 shows that majority of the ICT teachers strongly agreed or agreed that:

- The authority and the government do not provide protection for teachers.
- ICT teachers are subjected to security threats from some other actors.
- They are very much worried of their security.
- ICT teacher's personal computers are password protected.

- ICT teacher's data and resources are vulnerable to theft.
- The university employs security guards to protect its facilities.
- Their university is in very insecure area.
- Laboratories are not well equipped and also not well protected.
- The risk of personal security does not deter them of doing their job.
- Physical security is much more serious in Somalia than electronic security.

When asked, the majority of the ICT teachers had divided opinions on whether:

- Some teachers are housed at the university hostel because of security concerns.
- They experience some security dangers every day.
- Some ICT teachers have quitted their jobs because of security threats

The values of chi square and weighted average were found to be significant at 0.05 level of confidence.



**Table 4-5: Opinion of the ICT teachers regarding the administrative problems**

(N=50)

No.	Statement	SA	A	UD	DA	SD	WA	$\chi^2$	Asymp.Sig.
1.	There is no coordination and cooperation between university and ministry of higher education.	24	17	3	3	3	4.12	39.20	0.000
2.	There is no monitoring or supervision on the curriculum content and evaluation procedures by the government.	22	21	1	2	4	4.10	44.60	0.000
3.	Every university has its own policy.	28	19	2	1	0	4.48	42.00	0.000
4.	The role of the ministry in higher education of the country is absent.	25	21	3	1	0	4.40	36.08	0.000
5.	University authority put heavy workload on the ICT teachers	17	26	4	2	1	4.12	48.60	0.000
6.	The ICT teachers have no role on curriculum design and development	14	21	3	7	5	3.64	22.00	0.000
7.	Every teacher is responsible to prepare his content for his course.	14	20	1	11	4	3.58	23.40	0.000
8.	There is no coordination between the policy guidelines and curriculum content.	15	28	1	4	2	4.00	53.00	0.000
9.	You have no good relationship with the university authority	13	20	4	13	0	3.66	10.32	0.016
10.	There is no equal respect and accountability for all the teachers.	17	17	4	9	3	3.72	18.40	0.001
11.	The authority is biased to some teachers	4	9	26	8	3	3.06	34.60	0.000
12.	ICT teachers are provided annual and weekly leaves.	9	32	4	5	0	3.90	41.68	0.000
13.	There is no administration support for teachers in terms of curricular matters.	11	27	8	2	2	3.86	42.20	0.000
14.	The promotion policies regarding teachers are not fair and transparent.	2	26	13	3	6	3.30	39.40	0.000
15.	Some teachers are provided scholarships to pursue higher education abroad.	8	26	3	2	11	3.36	37.40	0.000

SA= Strongly Agree (5), A=Agree (4), UD=Undecided (3), DA=Disagree (2), SD=Strongly Disagree (1), WA= Weighted average

Table 4.5 shows that majority of the ICT teachers strongly agreed or agreed that:

- There is no coordination and cooperation between university and ministry of higher education.
- There is no monitoring or supervision on the curriculum content and evaluation procedures by the government.
- Every university has its own policy.
- The role of the ministry in higher education of the country is absent.
- University authority put heavy workload on the ICT teachers.
- The ICT teachers have no role on curriculum design and development.
- Every teacher is responsible to prepare his content for his course.
- There is no coordination between the policy guidelines and curriculum content.
- They have no good relationship with the university authority.
- There is no equal respect and accountability for all the teachers.
- ICT teachers are provided annual and weekly leaves.
- There is no administration support for teachers in terms of curricular matters.
- The promotion policies of teachers are not fair and transparent.

Majority of the ICT teachers were undecided on whether the authority is biased to some teachers.

The values of chi square and weighted average were found to be significant at 0.05 level of confidence.

**Table 4-6: Opinion of ICT teachers Related to fringe benefits**

(N=50)

No	Statement	SA	A	UD	DA	SD	WA	$\chi^2$	Asymp.Sig.
1.	You are not getting any fringe benefits.	24	15	3	6	2	4.06	35.00	0.000
2.	You are getting some children allowances.	4	2	11	33	0	2.54	48.40	0.000
3.	The university also provides you some medical allowance.	2	15	33	0	0	3.38	29.08	0.000
4.	You are provided with housing allowance.	2	15	31	2	0	3.34	26.38	0.000
5.	Your children's school fees are provided by the university	2	7	41	0	0	3.22	54.04	0.000
6.	You also get some transportation allowances.	5	6	7	32	0	2.68	40.72	0.000
7.	You get some spouse allowances.	2	0	2	11	35	1.46	58.32	0.000
8.	You are provided food and cafeteria facilities.	10	4	0	3	33	2.10	47.12	0.000

SA= Strongly Agree (5), A=Agree (4), UD=Undecided (3), DA=Disagree (2), SD=Strongly Disagree (1), WA= Weighted average

Table 4.6 shows that majority of the ICT teachers strongly agreed that they are not getting any fringe benefits.

Majority of the ICT teachers strongly disagreed or disagreed that:

- They are getting some children allowances.
- They also get some transportation allowances.
- They are provided food and cafeteria facilities.

Majority of the ICT teachers were undecided on whether:

- The university also provides them some medical allowance.
- They are provided with housing allowance.
- Their children's school fees are provided by the university.
- They get some spouse allowances

The values of chi square and weighted average were found to be significant at 0.05 level of confidence.

### **The Responses of the ICT teachers on the open ended questions regarding educational problems they are facing:**

- ICT teachers showed concern over the management of curricular matters
- They lack necessary resources such as internet connections, printing facilities and electricity for the duration of the class
- They lack sufficient competency due to the lack of in-service training and lack of constant supervision and evaluation
- They complain about lack of updated curriculum as many of them have to use the same material every year
- They are faced with problems of lack of skilled technical staff in the lab sessions
- They complain about the lack of discipline among the students
- They feel that they are overburdened with additional courses.
- They also say that the educational policies of the institution often contradict what is actually happening

### **The Responses of the ICT teachers on the open ended questions regarding financial problems they are facing:**

- Most ICT teachers complain about low salary and that even then they are not paid on time
- They complain about the lack of support from the authority regarding covering expenses such as printing costs, bus fair, etc.
- They feel that the allocation of salary and other benefits to different teachers is not fair and transparent as the authority favors some teachers over the others
- They say that they are overloaded with additional courses but are not compensated
- The teachers say that they do other jobs to fill the financial gap left by the low salary that they are getting from their university.

- They also indicate that their salary does not increase even if they are promoted as there are not policies regarding this matter in the university.

**The Responses of the ICT teachers on the open ended questions regarding professional development-related problems they are facing:**

- Regarding their professional development, the teachers say that they are not professionally developing because of lack of evaluation and supervision from the higher authority
- They attribute their lack of professional development to the lack of training and equipment
- Other factors teachers attribute the lack of training is the frequent mobility of ICT teachers and lack of job security

**The Responses of the ICT teachers on the open ended questions regarding security problems they are facing:**

- The teachers believe that they work in a very dangerous security situations in a country that has experienced many years of civil war and violence and this has had a huge impact both on their lives and that of their students and families
- They complain about lack of administrative support concerning the security issues and lack of protection from the political groups
- They showed concerns over the impact of security threat as many of their friends quitted their jobs because of security threats
- The teachers, though very much worried of their security, yet they have no plans to let the threats deter them from performing their duties
- University authority arranges less training courses for them, so most of teachers are unaware of the modern techniques to keep their information and belongings safe and secure
- They also say that they are much more worried of their jobs security more than they do for their personal security

- The teachers attribute the lack of security for educational institutions to be part of the wider security situation that has been existing in the whole country for many years
- Some ICT teachers also complain about electronic theft of their resources

**The Responses of the ICT teachers on the open ended questions regarding administrative problems they are facing:**

- The teachers complain about lack of coordination and cooperation between university authorities and ministry of higher education.
- They complain lack of monitoring and supervision mechanisms from the side of the ministry as there are no standards to follow and every university follows its owner's policies and guidelines as there are no standards set by the ministry.
- They feel that the universities administration does not consider the difference of opinions.
- They say that they are not given their rights properly.
- They say that promotion and firing policies of the universities are not fair and transparent.
- They say that, unlike other international universities where teachers are given syllabus and course outlines, the ICT teachers of universities in Somalia are not given syllabus and outline, they are told to do all that by their own.
- The teachers also say that they are responsible for preparing syllabus for the subject and also its contents.

**The Responses of the ICT teachers on the open ended questions regarding problems related to fringe benefits:**

- The teachers say that they are not getting allowances other than their salary
- they are not getting any children allowances
- They are also not getting any housing allowances

- they are not getting medical care or any allowances regarding their health and that of their family
- They are not getting food and cafeteria facilities

# CHAPTER V

## SUMMARY, FINDINGS, CONCLUSIONS AND RECOMMENDATIONS

### 2.8 Summary

The purpose of this study was to identify problems faced by Information and Communication Technologies (ICT) teachers of universities in Somalia. The specific objectives of this study were to find out the following problems:

- Educational problems
- Financial problems
- The problems regarding professional development
- Administrative problems
- Security problems
- The problems regarding the fringe benefits

The population of the study consisted of all ICT teachers of seven selected universities in Mogadishu. The study was delimited to:

1. Mogadishu, the capital of Somalia since the highest number of universities was in the capital.
2. The study was focused on only ICT teachers' problems.
3. The data was collected from only (7) seven out of (44) Forty four universities in Somalia.
4. The seven selected universities were: Somalia International University, Simad University, Banadir University, Jazeera University, Indian Ocean University, Plasma University of science and technology, and university of Somalia.

A stratified random sampling method was used to select the ICT teachers in selected universities. Sixty ICT teachers were selected from the 7 Universities. The following formula was used to select the sample:  $SZ = [(NV * NS)] / NP$ .



- 5 The researcher used 5-point likert-type questionnaire for gathering information regarding the opinions of ICT teachers on the different problems that they faced in their universities. The questionnaire consisted of both structured and unstructured questions. The questionnaire was developed by the researcher under close guidance of the supervisor. The questionnaire was validated with expert's opinions. The experts were requested to provide their views and opinions on the different aspects of the questionnaire.
- 6 Data was collected mainly through volunteers whom the researcher knew very well and who were ready to help in carrying the questionnaire to the respondents of various institutions. Questionnaires were also mailed directly to the respondents whom the researcher had a contact with and the respondents mailed back the questionnaires.

## **5.2 Findings**

**Based on analysis and interpretation of the data the following findings emerged:**

1. Regarding the educational side, the following problems were found:
  - Electricity is not available for all classrooms and labs.
  - Lack of enough technical staff in the laboratories
  - Lack of enough teaching materials
  - Lack of enough text and reference books
  - Lack of enough competent and cooperative staff
2. Regarding their financial problems, the following problems were found:
  - Low salary and lack of any allowances
  - Being forced to seek part time employment
  - Overloading of courses and lack of compensation
  - Lack of government support
3. Regarding their professional development, the following problems were found:
  - Lack of seminars and workshops on regular basis
  - Lack of effective assessment and evaluation of teacher's performances
  - Lack of courses or training programs to improve teachers' competencies

- Lack of Pre-service and in-service raining
  - Lack of opportunities to go abroad for training or higher studies
4. Regarding security problems, the following problems were found:
- The authority and the government do not provide protection for the teachers.
  - There is much security concern amongst the teaching staff
  - The universities are in very insecure areas.
  - ICT teacher's data and resources are vulnerable to theft.
  - The university has to employ security guards to protect its facilities.
  - Physical security is much more serious in Somalia than electronic security.
5. With respect to administrative problems, the following problems were found:
- Lack of coordination and cooperation between university and ministry of higher education.
  - Lack of monitoring or supervision on the curriculum content and evaluation procedures by the government.
  - Lack of Coordination among the private universities themselves.
  - The role of the ministry in higher education of the country is absent.
  - University authority put heavy workload on the ICT teachers.
  - The ICT teachers have no role on curriculum design and development.
  - Every teacher is responsible to prepare his content for his course.
  - There is no coordination between the policy guidelines and curriculum content.
  - The teachers have no good relationship with the university authority.
  - There is no equal respect and accountability for all the teachers.
  - There is no administrative support for teachers in terms of curricular matters.
  - The promotion policies of teachers are not fair and transparent.
6. Regarding the problems related to fringe benefits, the teachers pointed out the following problems:
- Lack of any fringe benefits.
  - They are also not getting any transportation allowances.
  - Lack of food and cafeteria facilities
7. The analysis of the open ended questions revealed the following findings:

1. The teachers showed concern over the management of curricular matters
2. They lack necessary resources such as internet connections, printing facilities and electricity for the duration of the class
3. They lack sufficient competency due to the lack of in-service training and lack of constant supervision and evaluation
4. They complain about lack of updated curriculum as many of them have to refer to the same material every year
5. They are faced with problems of lack of technical staff in the lab sessions
6. They complain about lack of discipline among the students
7. They feel that they are overburdened with additional courses.
8. They say that the educational policies of the institution often contradict what is actually happening
9. They complain about low salary and that even then they are not paid on time
10. They complain about lack support from the authority regarding covering expenses such as printing costs, bus fair, etc.
11. They feel that the allocation of salary and other benefits to different teachers is not fair and transparent as the authority favors some teachers over the others
12. They say that they are over loaded with additional courses but are not compensated
13. They also say that they do other jobs to fill the financial gap left by the low salary that they are getting from their university.
14. They also say that their salary does not increase even if they are promoted as there are not policies regarding this matter in the university.
15. Regarding their professional development, the teachers say that they are not professionally developing because of lack of evaluation and supervision from the higher authority
16. They attribute their lack of professional development to the lack of training and equipment
17. Other factors they attribute the lack of training is the frequent mobility of ICT teachers and lack of job security

18. They believe that they work in a very dangerous security situations in a country that has experienced many years of civil war and violence and this has had a huge impact both on their lives and that of their students and families
19. They also complain about lack of administrative support concerning the security issues and lack of protection from the political groups
20. They showed concerns over the impact of security threat as many of their friends quitted their jobs because of security threats
21. Though very much worried of their security yet they have no plans to let the threats deter them from performing their duties
22. University authority arranges less training courses for them, so most of teachers are unaware of the modern techniques to keep their information and belongings safe and secure
23. They also say that they are much more worried of their jobs security more than they do for their personal security
24. They attribute the lack of security for educational institutions to be part of the wider security situation that ravaged the whole country for many years
25. They also complain about electronic theft of their resources
26. They complain lack of coordination and cooperation between university authorities and ministry of higher education.
27. They complain lack of monitoring and supervision mechanisms from the side of the ministry as there are no standards to follow and every university follows its owner's policies and guidelines as there are no standards set by the ministry.
28. They feel that the universities administration does not consider the difference of opinions.
29. They say that they are not given their rights properly.
30. They say that promotion and firing policies of the universities are not fair and transparent.
31. They say that, unlike other international universities where teachers are given syllabus and course outlines, the ICT teachers of universities in Somalia are not given syllabus and outline. They are told to do all of that on their own.

32. They say that they are responsible for preparing syllabus for the subject and also its contents.
33. Most teachers say that they are not getting allowances other than their salary
34. They are not getting any children allowances
35. They are not also getting any housing allowances
36. Most of them say they are not getting medical care or any allowances regarding their health and that of their family
37. The teachers are not getting food and cafeteria facilities

### **5.3 Conclusions**

**On the basis of analysis of data and findings of the study, following conclusions were drawn:**

1. Regarding the educational side the teachers have problems with electricity and internet connection, lack of enough technical staff in labs, lack of enough teaching materials, lack of enough text and reference books and lack of competent and cooperating technical staff in the labs.
2. Regarding financial issues the teachers have problems such as low salary and lack of any allowances, being forced to seek part time employment, overload of courses and lack of compensation and also lack of government support.
3. Regarding professional development related issues the teachers have many problems such as lack of seminars and workshops on regular basis, lack of effective assessment and evaluation of teachers' performances, lack of courses or training programs to improve teachers' competencies, lack of pre-service and in-service training, and lack of opportunities for higher studies abroad.
4. With respect to security the teachers have many problems including lack of protection from the authority and the government for teachers, security concern among teachers and staff, insecurity in the university area itself, vulnerability of the teacher's electronic resources and data to theft, requirement of security guards to protect the university's facilities, and seriousness of physical security over e-security in Somalia
5. Regarding administrative issues, teachers have many problems including lack of coordination and cooperation between the universities and ministry of higher

education, lack of monitoring and supervision on curricular content and evaluation procedures by the government, lack of coordination among the private universities themselves, lack of role for the ministry in controlling the private universities' standards, heavy duty load for teachers, lack of role for teachers in curriculum design and development, putting extra load on teachers such as course resources preparation, lack of coordination between policy guidelines and content preparation, lack of good relationship between teachers and administrators, lack of equal respect and accountability for all teachers due to authority's biasness to some teachers, lack of administrative support for teachers in terms of curricular matters, and also lack of fair and transparent policies regarding promotion

6. Regarding the questions related to fringes the teachers lack any fringes and allowances as well as any facilities such as food and cafeteria. All these are nonexistent for ICT teachers in Somalia
7. On the basis of analysis of data regarding the open ended items the following conclusions were made:
  1. The ICT teachers lack necessary resources such as internet connection, printing facilities and electricity for the duration of the class.
  2. The ICT teachers also lack sufficient competency due to the lack of in-service training and lack of constant supervision and evaluation.
  3. ICT teachers are faced with problems of lack of technical staff in the lab sessions
  4. The ICT teachers also feel that the allocation of salary and other benefits to different teachers is not fair and transparent as the authority favors some teachers over the others
  5. Most of the ICT teachers say that they are over loaded with additional courses but are not compensated
  6. Some ICT teachers also say that they do other jobs to fill the financial gap left by the low salary that they are getting from their university.
  7. ICT teachers also say that their salary does not increase even if they are promoted as there are not policies regarding this matter in the university.

8. Regarding their professional development, the ICT teachers say that they are not professionally developing because of lack of evaluation and supervision from the higher authority.
9. ICT teachers also complain about lack of administrative support concerning the security issues and lack of protection from the political groups
10. ICT teachers also feel that the universities administration does not consider the difference of opinions.
11. Some ICT teachers say that promotion and firing policies of the universities are not fair and transparent.
12. ICT teachers say that, unlike other international universities where teachers are given syllabus and course outlines, the ICT teachers of universities in Somalia are not given syllabus and outline, they are told to do all that by their own.
13. Most ICT teachers say that they are not getting allowances other than their salary

## **5.4 Recommendations**

### **In the light of the findings and conclusions following recommendations were made:**

1. The university authorities and anyone concerned have to make sure that the labs and classrooms have electricity and internet connection. They also have to make sure that there are enough technical staffs that are competent enough. Furthermore they have to make sure that there are enough text and reference books at teachers' disposal.
2. Regarding financial problems, the concerned authorities should:
  - Provide the teachers with enough salary so that they can commit themselves to teaching the students and not worry about financial issues
  - Give all teachers their salary and other benefits on time
  - Give teachers more salary so that they don't seek part-time employment
  - Should not overload the teachers with additional burden of courses and other tasks otherwise compensate them.
3. Regarding professional development the university authority should:
  - Provide the teachers with seminars and workshops on regular basis

- Regularly assess and evaluate teachers' performances
  - Implement short courses and other programs to improve teachers' competencies
  - Provide pre-service and in-service training for teachers on regular basis
  - Provide the teachers with opportunities for higher studies
4. Regarding security, the concerned authorities must:
- Provide the teachers with protection for their lives and their belongings
  - Solves security worries of teachers as well as other staff
  - Try to make the area of the university safe and secure
  - Employ security personnel to make sure the safety and security of teachers while on and off campus.
  - Handle the vulnerability of teachers' electronic resources and data
5. Regarding the administrative problems of teachers, the following are recommended:
- There should be better coordination and cooperation between the universities and ministry of higher education
  - There should be monitoring and supervision on curricular content and evaluation procedures by the government
  - There must be coordination among the private universities themselves
  - There should be role for the ministry in controlling the private universities' standards
  - There shouldn't be heavy duty load for teachers
  - There must be a coordination between policy guidelines and content preparation
  - There should be good relationship between teachers and university administrators
  - There must be equal respect and accountability for all teachers and there should be no discrimination and favoritism by the administration
  - There should be of administrative support for teachers on curricular matters
  - There should be fair and transparent policies regarding promotion



6. Regarding fringes the university authority and other actors concerned should make sure that there are some fringes for teachers in terms of medical, children, spouse and other allowances
7. The teachers should be provided with necessary facilities such as printing service, scanning service, ftp service, etc.
8. There should be constant supervision and evaluation as well as monitoring activities from the higher administration.
9. The teachers should also be provided with sufficient number of qualified lab technicians and other staffs.
10. The allocation of salary and other benefits as well as promotion policies of the university should be fair and transparent
11. The teachers should be provided with all the necessary materials for teaching their courses and all supplementary materials should be provided for the lab sessions.
12. The salary of the teachers should be high enough to lure them from other financial distractions that they have to resort to due to low salary.
13. When a teacher is promoted his/her salary should also be increased
14. Regarding their professional development, the teachers should be provided with facilities which will ultimately enable them to develop professionally so that they can teach their subjects efficiently.
15. Teachers should also be provided with administrative support regarding the issues of security and the political groups should provide them protection
16. The university administration should also respect the opinion of teachers and consider it worthwhile.
17. The teachers should be provided with syllabus and they should not be overburdened with the administrative task of syllabus preparation.

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## Appendix-A

Dear Sir/Madam,

My name is Abdurrahman Yusuf Haydar, I am doing MSc.TE (with specialization in Computer Science and Engineering) in Islamic University of Technology (IUT), a subsidiary organ of Organization of Islamic Cooperation (OIC).

As a partial requirement for completing the degree, I am conducting research on “**A STUDY TO IDENTIFY THE PROBLEMS FACED BY INFORMATION AND COMMUNICATION TECHNOLOGY (ICT) TEACHERS OF UNIVERSITIES IN SOMALIA**”.

Your ideas, opinions, responses and cooperation are highly essential. The data received from you will be used for the research purpose only and your responses will be kept confidential.

Thanking you in advance,

Name: Abdurrahman yusuf haydar

### Personal Information

Name: \_\_\_\_\_

Designation: \_\_\_\_\_

Name and Address of University:

\_\_\_\_\_

Please give your responses to the following items and mark the columns which you consider as the most appropriate (NB. if you are filling electronically use Y instead of tick mark).

**SA= Strongly Agree , A=Agree , UD=Undecided , DA=Disagree , SD=Strongly Disagree**

### Educational problems

No	Statement	SA	A	UD	DA	SD
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1.	The standard of classroom is very good.					
2.	24/7 electricity is available for all classrooms and labs.					
3.	There are not enough teaching materials at your disposal.					
4.	You are satisfied with size of the classroom.					
5.	You are pleased with time duration of the class.					
6.	You have not enough text and reference books for your course(s).					
7.	The standard of the books and other teaching materials is good.					
8.	The library of the university is well-equipped.					
9.	The course content is updated regularly.					
10.	Teachers are consulted about the curriculum matters.					
11.	You have not free access to library resources.					
12.	All computers in the labs have internet connection.					
13.	There are enough technical staff in the laboratories.					
14.	The labs are well-equipped with all the equipment and software packages you need.					
15.	The technical staffs are competent and cooperative.					

## Financial problems

No	Statement	SA	A	UD	DA	SD
1.	You are satisfied with the salary you are getting at this university.					
2.	You do not get any allowances					
3.	The salary and other benefits are not provided equally to all the teachers.					
4.	You work as part time in other university.					
5.	Since your salary is low you do other business other than teaching.					
6.	You get your salary and other allowances on time.					
7.	The university covers some of your expenses such as bus fair.					
8.	The university has to overload some teachers with more courses than they should because they cannot afford to recruit new teachers.					
9.	The sources of income of the university are only from the fees taken from the students.					
10.	Your university has a government's budgetary support.					

## Problems regarding the professional development

No	Statement	SA	A	UD	DA	SD
1.	The university does not conduct seminars and workshops for ICT teachers.					
2.	You sometimes have opportunity to go abroad for training and seminars.					
3.	The university does not undertake an assessment and evaluation of teachers' performances on regular basis.					
4.	Students are not given evaluation sheets to assess teachers' teaching skills and performances at the end of each academic year.					
5.	The university does not conduct short courses to improve the competency of ICT teachers.					
6.	As a result of the in-service training your teaching skills have improved.					
7.	As a result of improvement of your teaching skills the performance of your students has improved.					
8.	You undertake steps to improve your teaching skills and methods.					
9.	ICT teachers require more professional development.					
10.	You have had no training before becoming a teacher.					

## Security problems

No	Statement	SA	A	UD	DA	SD
1.	The authority and the government do not provide protection for teachers.					
2.	ICT teachers are subjected to security threats from some other actors.					
3.	You are very much worried of your security.					
4.	ICT teacher's personal computers are password protected.					
5.	ICT teacher's data and resources are vulnerable to theft.					
6.	The university employs security guards to protect its facilities.					
7.	Your university is in very insecure area.					
8.	Some teachers are housed at the university hostel because of security concerns.					
9.	Laboratories are not well equipped and also not well protected.					
10.	You experience some security dangers every day.					
11.	The risk of personal security does not deter you of doing your job.					
12.	Some ICT teachers have quitted their jobs because of security					

	threats.					
13.	Physical security is much more serious in Somalia than electronic security.					

### Administrative problems

No	Statement	SA	A	UD	DA	SD
1.	There is no coordination and cooperation between university and ministry of higher education.					
2.	There is no monitoring or supervision on the curriculum content and evaluation procedures by the government.					
3.	Every university has its own policy.					
4.	The role of the ministry in higher education of the country is absent.					
5.	University authority put heavy workload on the ICT teachers					
6.	The ICT teachers have no role on curriculum design and development					
7.	Every teacher is responsible to prepare his content for his course.					
8.	There is no coordination between the policy guidelines and curriculum content.					
9.	You have no good relationship with the university authority					
10.	There is no equal respect and accountability for all the teachers.					
11.	The authority is biased to some teachers					
12.	ICT teachers are provided annual and weekly leaves.					
13.	There is no administration support for teachers in terms of curricular matters.					
14.	The promotion policies regarding teachers are not fair and transparent.					
15.	Some teachers are provided scholarships to pursue higher education abroad.					

### Problems regarding the fringe benefits

No	Statement	SA	A	UD	DA	SD
1.	You are not getting any fringe benefits.					
2.	You are getting some children allowances.					
3.	The university also provides you some medical allowance.					
4.	You are provided with housing allowance.					
5.	Your children's school fees are provided by the university					



6.	You also get some transportation allowances.					
7.	You get some spouse allowances.					
8.	You are provided food and cafeteria facilities.					

**Q:** In your opinion what are the most challenging educational problems that you face?

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**Q:** In your opinion what are the major financial problems that you face?

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**Q:** In your opinion, what are the reasons that the teaching skills of ICT teachers do not develop over time?

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**Q:** In your own words, outline some of the personal security concerns you have?

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**Q:** In your words, what are the major administrative problems that ICT teachers face?

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**Q:** What are some of the fringe benefits that you are getting ( if any)?

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## Appendix-B

### Details of Data Analysis

#### Chi-Square Test

**The standard of classroom is very good.**

	Observed N	Expected N	Residual
Strongly agree	19	10.0	9.0
Agree	17	10.0	7.0
Undecided	2	10.0	-8.0
Disagree	9	10.0	-1.0
strongly disagree	3	10.0	-7.0
Total	50		

**24/7 electricity is available for all classrooms and labs.**

	Observed N	Expected N	Residual
Strongly agree	8	10.0	-2.0
Agree	7	10.0	-3.0
Undecided	9	10.0	-1.0
Disagree	4	10.0	-6.0
strongly disagree	22	10.0	12.0
Total	50		

**There are not enough teaching materials at your disposal.**

	Observed N	Expected N	Residual
Strongly agree	5	10.0	-5.0
Agree	23	10.0	13.0
Undecided	6	10.0	-4.0
Disagree	9	10.0	-1.0
strongly disagree	7	10.0	-3.0
Total	50		

**You are satisfied with size of the classroom.**

	Observed N	Expected N	Residual
Strongly agree	4	10.0	-6.0
Agree	25	10.0	15.0
Undecided	10	10.0	.0
Disagree	5	10.0	-5.0
strongly disagree	6	10.0	-4.0
Total	50		

**You are pleased with time duration of the class.**

	Observed N	Expected N	Residual
Strongly agree	6	10.0	-4.0
Agree	27	10.0	17.0
Undecided	7	10.0	-3.0
Disagree	7	10.0	-3.0
strongly disagree	3	10.0	-7.0
Total	50		

**You have not enough text and reference books for your course(s).**

	Observed N	Expected N	Residual
Strongly agree	6	10.0	-4.0
Agree	22	10.0	12.0
Undecided	10	10.0	.0
Disagree	6	10.0	-4.0
strongly disagree	6	10.0	-4.0
Total	50		

**The standard of the books and other teaching materials is good.**

	Observed N	Expected N	Residual
Strongly agree	7	10.0	-3.0
Agree	16	10.0	6.0
Undecided	17	10.0	7.0
Disagree	7	10.0	-3.0
strongly disagree	3	10.0	-7.0
Total	50		

**The library of the university is well-equipped.**

	Observed N	Expected N	Residual
Strongly agree	4	10.0	-6.0
Agree	14	10.0	4.0
Undecided	21	10.0	11.0
Disagree	6	10.0	-4.0
strongly disagree	5	10.0	-5.0
Total	50		

**The course content is updated regularly.**

	Observed N	Expected N	Residual
Strongly agree	4	10.0	-6.0
Agree	11	10.0	1.0
Undecided	21	10.0	11.0
Disagree	11	10.0	1.0
strongly disagree	3	10.0	-7.0
Total	50		

**Teachers are consulted about the curriculum matters.**

	Observed N	Expected N	Residual
Strongly agree	5	10.0	-5.0
Agree	9	10.0	-1.0
Undecided	22	10.0	12.0
Disagree	13	10.0	3.0
strongly disagree	1	10.0	-9.0
Total	50		

**You have not free access to library resources.**

	Observed N	Expected N	Residual
Agree	8	12.5	-4.5
Undecided	23	12.5	10.5
Disagree	9	12.5	-3.5
strongly disagree	10	12.5	-2.5
Total	50		

**All computers in the labs have internet connection.**

	Observed N	Expected N	Residual
Agree	3	12.5	-9.5
Undecided	2	12.5	-10.5
Disagree	14	12.5	1.5
strongly disagree	31	12.5	18.5
Total	50		

**There are enough technical staff in the laboratories.**

	Observed N	Expected N	Residual
Agree	4	12.5	-8.5
Undecided	8	12.5	-4.5
Disagree	27	12.5	14.5
strongly disagree	11	12.5	-1.5
Total	50		

**The labs are well-equipped with all the equipment and software packages you need.**

	Observed N	Expected N	Residual
Strongly agree	2	10.0	-8.0
Agree	5	10.0	-5.0
Undecided	22	10.0	12.0
Disagree	11	10.0	1.0
strongly disagree	10	10.0	.0
Total	50		

**The technical staffs are competent and cooperative.**

	Observed N	Expected N	Residual
Agree	10	12.5	-2.5
Undecided	4	12.5	-8.5
Disagree	29	12.5	16.5
strongly disagree	7	12.5	-5.5
Total	50		

**You are satisfied with the salary you are getting at this university.**

	Observed N	Expected N	Residual
Strongly agree	12	10.0	2.0
Agree	8	10.0	-2.0
Undecided	6	10.0	-4.0
Disagree	19	10.0	9.0
Strongly disagree	5	10.0	-5.0
Total	50		

**You do not get any allowances**

	Observed N	Expected N	Residual
Agree	18	12.5	5.5
Undecided	4	12.5	-8.5
Disagree	17	12.5	4.5
Strongly disagree	11	12.5	-1.5
Total	50		

**The salary and other benefits are not provided equally to all the teachers.**

	Observed N	Expected N	Residual
Strongly agree	2	10.0	-8.0
Agree	13	10.0	3.0
Undecided	20	10.0	10.0
Disagree	12	10.0	2.0
Strongly disagree	3	10.0	-7.0
Total	50		

**You work as part time in other university.**

	Observed N	Expected N	Residual
Strongly agree	10	12.5	-2.5
Agree	26	12.5	13.5
Undecided	2	12.5	-10.5
Disagree	12	12.5	-.5
Total	50		

**Since your salary is low you do other business other than teaching.**

	Observed N	Expected N	Residual
Strongly agree	6	10.0	-4.0
Agree	26	10.0	16.0
Undecided	2	10.0	-8.0
Disagree	13	10.0	3.0
Strongly disagree	3	10.0	-7.0
Total	50		

**You get your salary and other allowances on time.**

	Observed N	Expected N	Residual
Strongly agree	9	10.0	-1.0
Agree	12	10.0	2.0
Undecided	4	10.0	-6.0
Disagree	16	10.0	6.0
Strongly disagree	9	10.0	-1.0
Total	50		

**The university covers some of your expenses such as bus fair.**

	Observed N	Expected N	Residual
Agree	13	12.5	.5
Undecided	8	12.5	-4.5
Disagree	20	12.5	7.5
Strongly disagree	9	12.5	-3.5
Total	50		

**The university has to overload some teachers with more courses than they should because they cannot afford to recruit new teachers.**

	Observed N	Expected N	Residual
Strongly agree	10	10.0	.0
Agree	28	10.0	18.0
Undecided	3	10.0	-7.0
Disagree	4	10.0	-6.0
Strongly disagree	5	10.0	-5.0
Total	50		

**The sources of income of the university are only from the fees taken from the students.**

	Observed N	Expected N	Residual
Strongly agree	25	10.0	15.0
Agree	16	10.0	6.0
Undecided	5	10.0	-5.0
Disagree	2	10.0	-8.0
Strongly disagree	2	10.0	-8.0
Total	50		

**Your university has a government's budgetary support.**

	Observed N	Expected N	Residual
Strongly agree	3	10.0	-7.0
Agree	14	10.0	4.0
Undecided	6	10.0	-4.0
Disagree	2	10.0	-8.0
Strongly disagree	25	10.0	15.0
Total	50		



**The university does not conduct seminars and workshops for ICT teachers.**

	Observed N	Expected N	Residual
Strongly agree	9	10.0	-1.0
Agree	25	10.0	15.0
Undecided	2	10.0	-8.0
Disagree	10	10.0	.0
Strongly disagree	4	10.0	-6.0
Total	50		

**You sometimes have opportunity to go abroad for training and seminars.**

	Observed N	Expected N	Residual
Strongly agree	2	10.0	-8.0
Agree	9	10.0	-1.0
Undecided	7	10.0	-3.0
Disagree	20	10.0	10.0
Strongly disagree	12	10.0	2.0
Total	50		

**The university does not undertake an assessment and evaluation of teachers' performances on regular basis.**

	Observed N	Expected N	Residual
Strongly agree	9	10.0	-1.0
Agree	25	10.0	15.0
Undecided	3	10.0	-7.0
Disagree	9	10.0	-1.0
Strongly disagree	4	10.0	-6.0
Total	50		

**Students are not given evaluation sheets to assess teachers' teaching skills and performances at the end of each academic year.**

	Observed N	Expected N	Residual
Strongly agree	9	10.0	-1.0
Agree	21	10.0	11.0
Undecided	6	10.0	-4.0
Disagree	4	10.0	-6.0
Strongly disagree	10	10.0	.0
Total	50		

**The university does not conduct short courses to improve the competency of ICT teachers.**

	Observed N	Expected N	Residual
Strongly agree	7	10.0	-3.0
Agree	27	10.0	17.0
Undecided	4	10.0	-6.0
Disagree	8	10.0	-2.0
Strongly disagree	4	10.0	-6.0
Total	50		

**As a result of the in-service training your teaching skills have improved.**

	Observed N	Expected N	Residual
Strongly agree	9	10.0	-1.0
Agree	29	10.0	19.0
Undecided	8	10.0	-2.0
Disagree	2	10.0	-8.0
Strongly disagree	2	10.0	-8.0
Total	50		

**As a result of improvement of your teaching skills the performance of your students has improved.**

	Observed N	Expected N	Residual
Strongly agree	9	10.0	-1.0
Agree	25	10.0	15.0
Undecided	12	10.0	2.0
Disagree	2	10.0	-8.0
Strongly disagree	2	10.0	-8.0
Total	50		

**You undertake steps to improve your teaching skills and methods.**

	Observed N	Expected N	Residual
Strongly agree	17	16.7	.3
Agree	31	16.7	14.3
Undecided	2	16.7	-14.7
Total	50		

**ICT teachers require more professional development.**

	Observed N	Expected N	Residual
Strongly agree	23	25.0	-2.0
Agree	27	25.0	2.0
Total	50		

**You have had no training before becoming a teacher.**

	Observed N	Expected N	Residual
Strongly agree	18	16.7	1.3
Agree	30	16.7	13.3
Disagree	2	16.7	-14.7
Total	50		

**The authority and the government do not provide protection for teachers.**

	Observed N	Expected N	Residual
Strongly agree	21	10.0	11.0
Agree	22	10.0	12.0
Undecided	2	10.0	-8.0
Disagree	3	10.0	-7.0
Strongly disagree	2	10.0	-8.0
Total	50		

**ICT teachers are subjected to security threats from some other actors.**

	Observed N	Expected N	Residual
Strongly agree	12	10.0	2.0
Agree	14	10.0	4.0
Undecided	9	10.0	-1.0
Disagree	7	10.0	-3.0
Strongly disagree	8	10.0	-2.0
Total	50		

**You are very much worried of your security.**

	Observed N	Expected N	Residual
Strongly agree	22	10.0	12.0
Agree	11	10.0	1.0
Undecided	4	10.0	-6.0
Disagree	7	10.0	-3.0
Strongly disagree	6	10.0	-4.0
Total	50		

**ICT teacher's personal computers are password protected.**

	Observed N	Expected N	Residual
Strongly agree	14	10.0	4.0
Agree	23	10.0	13.0
Undecided	2	10.0	-8.0
Disagree	6	10.0	-4.0
Strongly disagree	5	10.0	-5.0
Total	50		

**ICT teacher's data and resources are vulnerable to theft.**

	Observed N	Expected N	Residual
Strongly agree	14	10.0	4.0
Agree	14	10.0	4.0
Undecided	7	10.0	-3.0
Disagree	9	10.0	-1.0
Strongly disagree	6	10.0	-4.0
Total	50		

**The university employs security guards to protect its facilities.**

	Observed N	Expected N	Residual
Strongly agree	18	10.0	8.0
Agree	22	10.0	12.0
Undecided	4	10.0	-6.0
Disagree	4	10.0	-6.0
Strongly disagree	2	10.0	-8.0
Total	50		

**Your university is in very insecure area.**

	Observed N	Expected N	Residual
Strongly agree	15	10.0	5.0
Agree	18	10.0	8.0
Undecided	6	10.0	-4.0
Disagree	7	10.0	-3.0
Strongly disagree	4	10.0	-6.0
Total	50		

**Some teachers are housed at the university hostel  
because of security concerns.**

	Observed N	Expected N	Residual
Strongly agree	6	10.0	-4.0
Agree	17	10.0	7.0
Undecided	5	10.0	-5.0
Disagree	8	10.0	-2.0
Strongly disagree	14	10.0	4.0
Total	50		

**Laboratories are not well equipped and also not well  
protected.**

	Observed N	Expected N	Residual
Strongly agree	11	10.0	1.0
Agree	15	10.0	5.0
Undecided	11	10.0	1.0
Disagree	11	10.0	1.0
Strongly disagree	2	10.0	-8.0
Total	50		

**You experience some security dangers every day.**

	Observed N	Expected N	Residual
Strongly agree	10	10.0	.0
Agree	12	10.0	2.0
Undecided	15	10.0	5.0
Disagree	7	10.0	-3.0
Strongly disagree	6	10.0	-4.0
Total	50		

**The risk of personal security does not deter you of doing  
your job.**

	Observed N	Expected N	Residual
Strongly agree	21	10.0	11.0
Agree	9	10.0	-1.0
Undecided	14	10.0	4.0
Disagree	3	10.0	-7.0
Strongly disagree	3	10.0	-7.0
Total	50		

**Some ICT teachers have quit their jobs because of security threats.**

	Observed N	Expected N	Residual
Strongly agree	10	10.0	.0
Agree	13	10.0	3.0
Undecided	9	10.0	-1.0
Disagree	6	10.0	-4.0
Strongly disagree	12	10.0	2.0
Total	50		

**Physical security is much more serious in Somalia than electronic security.**

	Observed N	Expected N	Residual
Strongly agree	21	10.0	11.0
Agree	17	10.0	7.0
Undecided	8	10.0	-2.0
Disagree	1	10.0	-9.0
Strongly disagree	3	10.0	-7.0
Total	50		

**There is no coordination and cooperation between university and ministry of higher education.**

	Observed N	Expected N	Residual
Strongly agree	24	10.0	14.0
Agree	17	10.0	7.0
Undecided	3	10.0	-7.0
Disagree	3	10.0	-7.0
Strongly disagree	3	10.0	-7.0
Total	50		

**There is no monitoring or supervision on the curriculum content and evaluation procedures by the government.**

	Observed N	Expected N	Residual
Strongly agree	22	10.0	12.0
Agree	21	10.0	11.0
Undecided	1	10.0	-9.0
Disagree	2	10.0	-8.0
Strongly disagree	4	10.0	-6.0
Total	50		

**Every university has its own policy.**

	Observed N	Expected N	Residual
Strongly agree	28	12.5	15.5
Agree	19	12.5	6.5
Disagree	2	12.5	-10.5
Strongly disagree	1	12.5	-11.5
Total	50		

**The role of the ministry in higher education of the country is absent.**

	Observed N	Expected N	Residual
Strongly agree	25	12.5	12.5
Agree	21	12.5	8.5
Undecided	3	12.5	-9.5
Strongly disagree	1	12.5	-11.5
Total	50		

**University authority put heavy workload on the ICT teachers**

	Observed N	Expected N	Residual
Strongly agree	17	10.0	7.0
Agree	26	10.0	16.0
Undecided	4	10.0	-6.0
Disagree	2	10.0	-8.0
Strongly disagree	1	10.0	-9.0
Total	50		

**The ICT teachers have no role on curriculum design and development**

	Observed N	Expected N	Residual
Strongly agree	14	10.0	4.0
Agree	21	10.0	11.0
Undecided	3	10.0	-7.0
Disagree	7	10.0	-3.0
Strongly disagree	5	10.0	-5.0
Total	50		

**Every teacher is responsible to prepare his content for his course.**

	Observed N	Expected N	Residual
Strongly agree	14	10.0	4.0
Agree	20	10.0	10.0
Undecided	1	10.0	-9.0
Disagree	11	10.0	1.0
Strongly disagree	4	10.0	-6.0
Total	50		

**There is no coordination between the policy guidelines and curriculum content.**

	Observed N	Expected N	Residual
Strongly agree	15	10.0	5.0
Agree	28	10.0	18.0
Undecided	1	10.0	-9.0
Disagree	4	10.0	-6.0
Strongly disagree	2	10.0	-8.0
Total	50		

**You have no good relationship with the university authority**

	Observed N	Expected N	Residual
Strongly agree	13	12.5	.5
Agree	20	12.5	7.5
Undecided	4	12.5	-8.5
Disagree	13	12.5	.5
Total	50		

**There is no equal respect and accountability for all the teachers.**

	Observed N	Expected N	Residual
Strongly agree	17	10.0	7.0
Agree	17	10.0	7.0
Undecided	4	10.0	-6.0
Disagree	9	10.0	-1.0
Strongly disagree	3	10.0	-7.0
Total	50		



**The authority is biased to some teachers**

	Observed N	Expected N	Residual
Strongly agree	4	10.0	-6.0
Agree	9	10.0	-1.0
Undecided	26	10.0	16.0
Disagree	8	10.0	-2.0
Strongly disagree	3	10.0	-7.0
Total	50		

**ICT teachers are provided annual and weekly leaves.**

	Observed N	Expected N	Residual
Strongly agree	9	12.5	-3.5
Agree	32	12.5	19.5
Undecided	4	12.5	-8.5
Disagree	5	12.5	-7.5
Total	50		

**There is no administration support for teachers in terms of curricular matters.**

	Observed N	Expected N	Residual
Strongly agree	11	10.0	1.0
Agree	27	10.0	17.0
Undecided	8	10.0	-2.0
Disagree	2	10.0	-8.0
Strongly disagree	2	10.0	-8.0
Total	50		

**The promotion policies regarding teachers are not fair and transparent.**

	Observed N	Expected N	Residual
Strongly agree	2	10.0	-8.0
Agree	26	10.0	16.0
Undecided	13	10.0	3.0
Disagree	3	10.0	-7.0
Strongly disagree	6	10.0	-4.0
Total	50		

**Some teachers are provided scholarships to pursue higher education abroad.**

	Observed N	Expected N	Residual
Strongly agree	8	10.0	-2.0
Agree	26	10.0	16.0
Undecided	3	10.0	-7.0
Disagree	2	10.0	-8.0
Strongly disagree	11	10.0	1.0
Total	50		

**You are not getting any fringe benefits.**

	Observed N	Expected N	Residual
Strongly agree	24	10.0	14.0
Agree	15	10.0	5.0
Undecided	3	10.0	-7.0
Disagree	6	10.0	-4.0
Strongly disagree	2	10.0	-8.0
Total	50		

**You are getting some children allowances.**

	Observed N	Expected N	Residual
Strongly agree	4	12.5	-8.5
Agree	2	12.5	-10.5
Disagree	11	12.5	-1.5
Strongly disagree	33	12.5	20.5
Total	50		

**The university also provides you some medical allowance.**

	Observed N	Expected N	Residual
Strongly agree	2	16.7	-14.7
Disagree	15	16.7	-1.7
Strongly disagree	33	16.7	16.3
Total	50		

**You are provided with housing allowance.**

	Observed N	Expected N	Residual
Strongly agree	2	16.0	-14.0
Disagree	15	16.0	-1.0
Strongly disagree	31	16.0	15.0
Total	48		

**Your children's school fees are provided by the university**

	Observed N	Expected N	Residual
Strongly agree	2	16.7	-14.7
Disagree	7	16.7	-9.7
Strongly disagree	41	16.7	24.3
Total	50		

**You also get some transportation allowances.**

	Observed N	Expected N	Residual
Strongly agree	5	12.5	-7.5
Agree	6	12.5	-6.5
Disagree	7	12.5	-5.5
Strongly disagree	32	12.5	19.5
Total	50		

**You get some spouse allowances.**

	Observed N	Expected N	Residual
Strongly agree	2	12.5	-10.5
Undecided	2	12.5	-10.5
Disagree	11	12.5	-1.5
Strongly disagree	35	12.5	22.5
Total	50		

**You are provided food and cafeteria facilities.**

	Observed N	Expected N	Residual
Strongly agree	10	12.5	-2.5
Agree	4	12.5	-8.5
Disagree	3	12.5	-9.5
Strongly disagree	33	12.5	20.5
Total	50		