

**THE IMPACT OF INFORMATION TECHNOLOGY EDUCATION OF THE
FIELD OF STUDY OF POST GRADUATE STUDENTS (THE CASE OF
APPLIED NATURAL SCIENCE STUDENTS AT ADAMA SCIENCE AND
TECHNOLOGY UNIVERSITY)**

BY:-Fekadu Ejigu Laloto



**A Thesis Submitted To
The Department of Applied Physics
School of Applied Natural Science
Presented in Partial Fulfillment of the Requirement for the Degree of Master's in Physics**

**Office of Graduate Studies
Adama Science and Technology University**

**Adama
August, 2017**

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Advisor: - Alemu Kebede (PhD)

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Declaration

I hereby declare that this MSc Thesis is my original work and has not been presented for a degree in any other university, and all sources of material used for this thesis have been duly acknowledged.

Name : Fikadu Ejigu

Signature: -----

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

Name Alemu Kebede(PhD)

Signature -----

Date of submission-----

ADAMA SCIENCE AND TECHNOLOGY UNIVERSITY GRADUATE STUDIES
PROGRAM BOARD OF EXAMINERS' APPROVAL SHEET

As members of the board of examiners for the degree of masters of Science in Physics. Thesis open defense examination of Fekadu Ejigu. I certify that I have read and evaluated his thesis entitled “The Impact of Information Technology Education on the field of study of post graduate students (The case of Applied Natural Science students at Adama Science and Technology) Factor Affecting the Achievement of Student in Physics in Selected Preparatory School in Bale Zone” and examined the candidate. I therefore, recommend that the thesis could be accepted as it fulfills the requirements for degree of masters of Science in physics.

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DEDICATION

This work is dedicated to my sons, Keyre Mohamed and Henok Fekadu, my daughter Abigya Fekadu and my dear wife Munaja Wendimu.

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This work has been successful due to the assistance and cooperation of so many personalities. First I thank to the Almighty God whose wisdom, ability and divine provision has enabled me complete my studies

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ABBREVIATION AND ACRONOMY

ASTU	Adama Science and technology
CAI	Computer Assisted Instruction
HOTS	Higher Order Thinking Skill
ICT	Information Communication Technology
IT	Information technology
NKS	New kind of Science
OECD	Organization of for Economic Cooperation and Development
SOTL	Science of teaching and learning
SPSS	Statistical Package of Social Science
UNASCO	United nation Education Scientific and cultural Organization

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ABSTRACT

The study was on the Impact of Information and Communication Technology (ICT) Education on the field of Study of post graduate students in the Adama Science and Technology University, School of Applied Natural Science. The respondents used for the study were eighty (80) from the total population of one hundred seventy six (176) of Adama Science and Technology school of Applied natural science post graduate students. The instrument used for the study were questioner and interview. The data collected were statistically analyzed using frequency percentage, mean and standard deviation using SPSS version16 related literatures were reviewed. The results of the present study indicated that 67.5% didn't have ICT knowledge education. The result 72.4% indicated that ICT increases the students performance and 77.5% of the respondent also indicated that they didn't have computer skill this indicated problems with different application software during their thesis work .71.5% of the respondent indicated that ICT had better integration with post graduate students rather than other students this indicated post graduate students had great challenges when they choice and study their field effectively. 67.5% of the respondent didn't taking any training so far this indicated that post graduate students had problem to under the course and to contact with instructor,54% of the respondent they didn't have regular access in their work place this indicated that they were knew for technology problem to get information from the world using websites to do their work successfully.

Key words: Impact, Skill, SPSS

CHAPTER ONE

INTRODUCTION

1.1 Background of the Study

Education has vital role in building a society. Education determines the standard of the society. The quality of education helps empower the nation in all aspect by providing new thought, the way of implementation of various technologies and so many such things. According to(Sweti Des2008) quality education is vital in meeting of society. Technology is the most effective way to increase the students' knowledge. Information Communication Technology plays imminent role in the process of integrating technology in to educational activity.ICT had a major impact on the education sector on organization and on teaching and learning method. The impact of new technology on the work place and everyday life is undeniable. Teacher education institutions try to restructure their education program class room facilities in order to minimize the teaching and learning gap of today and the future. Many countries now regard understanding ICT and mastering the basic skills and concepts of ICT as part of the core of education, alongside reading, writing and numeracy. However, there appears to be a misconception that ICTs generally refers to computers and computing related activities'.

This is fortunately not the case, although computers and their application play a significant role in modern information management, other technologies and/or systems also comprise of the Phenomenon. There is gap in ICT use and competence between teachers and students. Different researcher studied in different countries about the important of Information technology for effective teaching and learning and performance of Student. The use of ICT in teaching is relevant and functional way of providing education to learner that will assist imbibing in them for the world work. Technology has centered the class room in a big way to become part of the teaching learning process (SundayAdynamo2008).According to Aretivalasido (2008)Information and Communication Technologies (ICTs) are generally accepted as a modern instrumental tool that enables the educators to modify the teaching methods they use in order to increase the students interest. Another way in which emerging ICTs are impacting on the content of education curricula stems from the ways in which ICTs are dominating so much of contemporary

life and work. Already there has emerged a need for educational institutions to ensure that graduates are able to display appropriate levels of information literacy. The drive to promote such developments stems from general moves among institutions to ensure their graduates demonstrate not only skills and knowledge in their subject domains but also general attributes and generic skills. Traditionally generic skills have involved such capabilities as ability to reason formally, to solve problems, to communicate effectively, to be able to negotiate outcomes, to manage time, project management, and collaboration and teamwork skills. The growing use of ICTs as tools of everyday life have seen the pool of generic skills expanded in recent years to include information literacy and it is highly probable that future developments and technology applications will see this set of skills growing even more (RonAliver2002). The purpose of this study was begin with brief back ground on the impact of Information Communication Technology education on the field study of post graduate students,(in the case of Adama Science and Technology University). Most of the post graduate students in Adama Science and Technology Applied Natural Science Students found in problem when they choose and studied their field.

.The use of information communication technology (ICT) is becoming an integral part of education in many part of the globe. According to Adyamo (2015) education is process, which seeks to change the behavioral of learner over all behaviorist view. Education is the process of changing behavioral pattern of feeling and his sense refers to the way we change the learner, his or her thinking, his or her feeling and his other overt action. Thus education is a process by which society deliberately transmit its Cultural hearing through school, collages, universities and other institution. Information and Communication Technologies (ICTs) are generally accepted as a modern instrumental tool that enables the educators to modify the teaching methods they use in order to increase the students interest. The extended use of ICTs drove the society into a new knowledge-based form where information plays an important role for the university enlargement and student's satisfaction Alexander Arisnk (2012).

For development of any country in education, economic growth, and information technology plays great role. There are dialing and e-learning tools. These products can be used in education for different purposes. Some of them help students with their learning by improving the communication between them and their instructor. Adel Ben (2008). Based on the extended usage of ICTs in education the need appeared to determine the level of the impact of ICTs to the post graduate students of the University .The present paper aims to examine how familiar are the students of sciences with the ICTs use. The research conducted also aims to reveal the possible relationship between the use of ICTs and the student's performance in their field of Study.

1.2 Statement of the Problem

The use of ICT in teaching was relevant and functional way of providing education to learn that assist them to require capacity for the worth of work .Most of the post graduate students in our country have shortage of usage computer in the under graduate level .They didn't use computer at home and in school. Majority of the preparatory and secondary school teacher they did not have access of internet, more difficult to study and to get information about their subject also to give assignment to their students. This reflects that most of the post graduate students having low participation of usage in ICT and the students did not have enough basic skill. The researcher carried out study for effective achievement and performance; to study their fields also to do their research the information technology are very crucial tools

1.3. Purpose of the Study

The purpose this study was the impact of information technology on education of post graduate students and its impact on choice their field of study, in addition the study seeks to assess use and application of computer and related knowledge in their field of study.

1.4. The General objective of the Study

The general objective of this study was to assess the impact of information communication technology education on postgraduate field of study.

1.4.1 Specific Objective of the study

The specific objective of this study is:

- ❖ to identify the role of information technology on the students' field of study.
- ❖ to examine the effect of and the availability of information communication technology in their field of study
- ❖ to examine the attitude of students towards the importance of Information Technology

1.5. Research Questions

The research is carried out to assess the impact of information technology education on the field of study of applied natural science post graduate students at Adama Science and Technology University. The specific research questions of this study are:

- What are the impact of information communication technology on the field of study for post graduate students?
- What is the role of information technology on the performance of post graduate students?
- How can information technology be accessible to post graduate students?
- What are the outcomes of information technology on the education of post graduate students?

1.6. Significant of the Study

The finding of this study would provide important information about the impact of information communication technology education on post graduate students field of study. This study will supposed to have the following significance.

- The study can help In the teaching learning process teachers and students benefited from finding of the presented data.
- The outcomes of the study might help ministry of education and Adama Science and Technology University.
- The study can help as source of information about the impact of information technology education on the field of study of post graduate students.
- The study might help as clue for the student improves the student's performance.
- The study that the above information might help as for the researcher for further study and investigation of the problem.

1.7. Scope of the Study

This study planned to be carried out on Post Graduate Students in the school of applied natural science Adama Science and Technology University. This study was restricted to assess the impact of information technology on education towards post graduate students on their field study.

1.8. Limitation of the Study

Different challenges were faced to collect the data during the study time to collect data and to do the research effectively. The shortage of resource of reference and the respondent of response delayed in giving information. The access of internet was also challenge to get more information.

CHAPTER TWO

2. REVIEW OF THE LITERATURE

2.1. Theoretical View

The rapid development in technology has made tremendous changes in the way we live, as well as the demands of the society. Recognizing the impact of new technologies on the working place and everyday life, today's teacher education institution try to restructure their education in programs and classroom facilities, in order to minimize the teaching and learning technology gap between today and the future. This restructuring process requires of technologies into existing context in order to provide learners with knowledge of specific areas, to promote meaningful learning and to enhance professional productivity (YaseminGulbahar2008).

According to Areti Valasidu (2008) the majority of medical students in Denmark had access to computers at home as well as used e-mail and the internet regularly. Only a few students prefer not to use computers at home. Finally, the research revealed that students believe that the use of ICTs cannot replace the traditional teaching activities but it can be easily used as a supplement. According to the findings the students were used to instruction in the structured format due to the traditional norms of education Information and communication technology is a powerful tool for the development of quality teaching and learning; it is a catalyst for radical change in existing school practices and a veritable vehicle for preparing the students for the future. Success in the implementation of an ICT policy will be dependent on the recognition of the importance of sectoral application to education and sustainable implementation. Maximizing ICT potentials will involve quality ICT policy, greater involvement of private and public in the funding of the implementation, and proper implementation and monitoring. The use of ICT has extended the scope of offering programs at a distance. The off campus delivery was an option for students who were unable to attend the campuses. Today, many students are able to make this choice through technology facilitated learning settings. In many instances traditional classroom learning has given way to learning in work-based settings with students able to access courses and programs from their workplace. The advantages of education and training at the point of

need relate not only to convenience but include cost savings associated with travel and time away from work, and also situation and application of the learning activities within relevant and meaningful contexts. The communications capabilities of modern technologies provide opportunities for many learners to enroll in courses offered by external institutions rather than those situated locally.

Areti Vlasidu (2008) analysis pointed out those students in technology rich environment experienced positive effects on achievement in all major subject areas. Furthermore, their attitudes toward learning and their own self-concept improved consistently when computers were used for instruction. Moreover, there was some research about the possible relationship between the computers and internet usage and the students' performance. Early researchers into ICT in education, such as Muhammad *et al.*, (2015) considered that students constructed reality from experience and prior knowledge. The student interacts with the environment and, to cope with this environment, develops a conceptual framework to explain the interaction. More recent theorists, these earlier propositions even as technologies evolve, give rise to the set of constructs upon which the ICT capability is based. In particular, the overarching element Applying social and ethical protocols and practices when using ICT addresses the personal, social and cultural contexts introduced by theorists such as Papert and Turkle.

2.2 .The Advantage of ICT on Education.

There are a significant number of initiatives to assess and monitor the efficiency of ICT use and its impact on education. Sites (the second information technology in educational study), sponsored by the International Association for the Evaluation of Educational Achievement (IEA), is an exemplary study which identifies and describes the educational use of ICT across 26 countries in the world. The study explores the use of computers in teaching through sampling teachers, principals and ICT responsibility in schools. While it does not look into student achievement, it does look at the perceived impact of ICT on students from the teacher's perspective. Alexander Arsitovicnlk Pelgrum (2012) reviewed several studies on the impact of ICT on schools in Europe. They conclude that the evidence is scarce and comparability is limited. Each study employs a different methodology and approach, and comparisons between countries must be made cautiously. In addition, in several other studies it is argued that ICT

helps to improve the quality of learning and educational outcomes. Some other survey (Md. Shamin Talku 2015) argue that, in order to be successful, a country should improve its education system implementing effective and robust ICT policies. In contrast a series of studies on ICT's impact on schools and concludes that the impact of ICT use on learning outcomes is unclear (Alexander Arisnk2012).

The field of education has been affected by ICTs, which have undoubtedly affected teaching, learning and research. ICTs have the potential to accelerate, enrich, and deepen skills, to motivate and engage students, to help relate school experience to work practices, create economic viability for tomorrow's workers as well as strengthening teaching and helping schools change (Syed Ul NoorAmin2010). In a rapidly changing world, basic education is essential for an individual be able to access and apply information. Such ability must find include ICTs in the global village. There has been substantial evidence around the world that technology has become one of the most important and vital components to the success of a child's education. Some of the advantages that technology helps provide for children today are Student achievement: Technology has proven to help students achieve in reading, writing, and arithmetic.

Technology gives educators one more tool to help them reach those goals. Students become engaged and can often times facilitate parent involvement at home. Professional Requirements: Technology also benefits the educator because there are many opportunities for teachers to learn and acquire new skills over the internet, keep up with credentials and in return help them improve their teaching abilities. Technology, more specifically with assistive technology special needs students, and student with disabilities have been able to achieve in areas and ways that would not have been possible. Technology creates individualized learning environments for students and really can play a major role in special need ones. Continuing Education: Technology has made it possible for those who did not finish college or high school to get back into things without having to even leave the comfort of their own home. And technology has made it possible for continued education; those wanting to reach a little higher and gain more knowledge in something new or old.

Technology brings the learning right to your students; wherever they may be. Workforce skills: Technology has served students well because it has provided them with the skill and knowledge they need to enter the workforce. It is becoming increasingly difficult for teachers to reach every child in the classroom.

According to Mabaeze (2010) that proved Computers as useful in higher learning. His view was view of the importance of motivational engagement of the learner contrasts sharply with Skinner's who although recognizing this influence, consider it unnecessary for instruction. In this view, the learners as active participants are involved in structuring their own learning experiences. Papert' work with Piaget who emphasized the way in which knowledge is structured using computers are organized as well as how the learners' own perception of their prior experiences perform the knowledge structure. Thus, the importance of how a learner relates new experiences to existing knowledge becomes paramount.

2.3 .The Use of Internet Learning on Education.

The impact of the ICT on learning can be approached in different ways. There is no single concept of learning through the use of ICT. Many different types can be envisaged: computer assisted learning, web-learning, computer-classes, online training, distance education, eLearning, virtual learning, digital training, etc. In this review, a broad view on ICT and learning is taken. Consequently, its impact on the learning process should encompass not only traditional learning outcomes but also the use of ICT by teachers (teacher training), the organizational use of ICT by education and training institutions, and, last but not least, the impact of ICT-enabled education on, for instance, personal development, confidence and self-esteem. The HELIOS Observatory on eLearning proposes the notion of “eLearning Territories” as a way to better study the evolution of the different contexts of learning experiences. This would allow us to go beyond the traditional sector-based approach to eLearning. (Yves, Punie2006) argues that, as eLearning develops further, it is no longer possible to analyze it as one single phenomenon, as was the case in the past. The use of interactive learning content for instance, cannot be confined to the classroom only, as students might want to access it from their home computers. With the rapid development of ICT technologies and their use in the everyday classrooms the concept of E-learning emerged as one of the inevitable parts in the latest forms of gaining knowledge.

The growing use of ICT as an instrumental medium is changed and will likely continue to change many of strategies employed by both teacher and students(Ron Olive2002).Every student in higher education who is using IT as a part of its learning process is in fact using E-learning. Compared to the traditional methods of classroom training E-learning has numerous advantages such as: It is easy to produce Basically free , It can work at any place and any time ,It solves the lack of classrooms , It is student centered. Works perfectly for large groups of student Being aware of the constant dynamic changes in the learning environments, the Ministry of Information Society and the Ministry of Education and Science of Republic of Macedonia have acknowledged the importance of the use of ICT tools in all the levels of education.

The OECD study “E-learning in Tertiary Education Where do we stand?” Yves punie (2006) have concluded that E-learning is growing in higher education but cannot completely replace the traditional classroom methods. It can simply be used as a tool for providing broader and richer educational content in a variety of formats. ICT has begun to have a presence but unfortunately we are lacking to achieve desired impact. The education is a socially oriented activity. It plays vital role in building the society. The quality education traditionally is associated with strong teachers having high degrees. Using ICTs in education it moved to more student –centered learning. As world is moving rapidly towards digital information, the role of ICTs in education becoming more and more important and this importance will continue to grow and develop in 21st century (Swati Das2001)ICT-enhanced learning mobilizes tools for examination, calculation and analysis of information in order to provide a platform for student inquiry, analysis and construction of new information.

2.4 The Impact of ICT on Student Achievement

ICTs can have positive effects on student achievement when used appropriately to complement a teacher’s existing pedagogical approaches in the teaching and learning process. The learners therefore, learn as they do and, whenever appropriate work on real-life problems in-depth. Moreover, ICT makes the learning less abstract and more relevant to their life situations. In contrast to memorization-based or rote learning, that is the feature of traditional pedagogy; ICT-enhanced learning promotes increased learner engagement. ICT-enhanced learning can also be ‘just-in time’ learning that the learners choose what to learn when they need. (Fissha2011) On the contrary, some studies show a factual impact of ICT on students’ achievement. Md. Shamin Talku (2015) find that creative use of the Internet allows use of small class interactive techniques in larger classes and has a beneficial impact on student performance

One important assumption by him “Technology has been shown to positively influence student learning when students explore technology-rich tasks that simultaneously require them to use higher-order thinking skills (HOTS), such as analyzing or evaluating information or creating new representations of knowledge.” A very important study conducted by (IsraleBolare 2014) the result reveals that, ICT impact on competency development, team work, independent learning

and higher order thinking skills. According to (Areti velasid 2010) analysis pointed out that students in technology rich environment experienced positive effects on achievement in all major subject areas. Furthermore, their attitudes toward the learning and their own self-concept improved consistently when computers were used for instruction.

2.5. Availability of ICT Resources and Student's learning

The availability of ICT resource very essential for the students learning activity students become active .ICT enhance the students learning activity and motivate students to attained the lesson actively. For teachers and their students, the availability of modern computers, peripherals, networking and resources within an increasingly diverse range of technologies is an essential part of learning and teaching in the 21stcentury. ICT constitutes an input in the student learning process that should help produce better learning output. The availability of ICT resources can enhance learning by making education less dependent on differing teacher quality and by making education available at home throughout the use of ICT can positively transmit knowledge to students. Furthermore, the availability and use of ICT can help students exploit enormous possibilities for acquiring information for schooling purposes and can increase learning through communication.

2.6. Computer-Assisted Instruction Services

An interactive learning method in which a computer is used by teachers or pupils to present instructional material, perform tasks for learning, and help in selecting and accessing additional pedagogical material . It is undeniable that an adequate number or critical mass of computers is important to provide sufficient exposure to CAI. However, to be delivered effectively, CAI also requires more than a haphazard distribution of computers across schools; computer laboratories and ICT support services may also play important roles in how CAI is delivered. Establishing computer laboratories in schools is typically perceived to be a significant upgrade from classrooms with one desktop computer at the back of the room. Computer laboratories offer the promise of a learning environment with one device per child, structured and controlled by a well-trained and knowledgeable teacher. More recently, educational technologists argue that computer laboratories are rapidly becoming obsolete and

may, in fact, provide a disservice to education. For example, given the multitude of both school- and personally-owned devices (including laptops, tablets and mobile devices), detractors argue that laboratories imply a separation between computing as a subject and the general curriculum. Others meanwhile argue that the inclusion of a smaller number of computers and other devices in classrooms helps to build stronger links between ICT and curriculum facilitating the development of ‘higher-order’ skills. UNISCO .(2014)

2.7. Teaching and Learning and ICT In Education

Teachers are frequently considered to be the most important influence on classroom learning and, as such, play an invaluable role in ensuring that pupils use ICT effectively inside the school. However, there has been little or no research on exactly how much teacher training is required, how often it should take place, what kind of training is most appropriate and affordable, and what it should cover to create a teaching workforce that is motivated to use ICT in the classroom in the context of new curricula and new pedagogies.

Complicating matters, the integration of ICT into education is frequently resisted by teachers and their unions, particularly in countries with an aging, underpaid teaching workforce, and where there has been inadequate training and preparation. In these circumstances, a lack of motivation to learn new skills and teaching and learning methodologies may occur, which is often compounded by feeling threatened by newer forms of ICT that students will understand better than teachers do. In particular, Competency Framework for Teachers is a useful tool to inform education policymakers, educators and providers of professional learning of the role of ICT in educational reform, as well as to assist Member States in developing national ICT competency standards for teachers. It emphasizes that it is not enough for teachers to just have ICT competencies and be able to teach them to students. Rather, teachers need training to facilitate students in becoming collaborative, problem-solving creative learners through the use of ICT, which is argued enhances student outcomes including academic achievement Pre-service teacher-training program delivered through teacher education institutions remain a crucial component not only to enable teachers to overcome the technology barrier but also to integrate appropriate technology into teaching and learning, in support of such effort. Pre-service courses on “Education Technology” to equip pre-service teachers with the relevant knowledge, skills and

tools to effectively use ICT in the classroom. While there are no international targets, countries where ICT is widespread require greater proportions of teachers that can teach how to use ICT as well as use it in their teaching. While the development of basic computer skills is seen to have a role in the teaching and learning process, experience from developed countries Mudasiru Olaro(2005).

2.8. Accessibility of ICT Resources and Students Learning

Effective integration of ICT in schools would call for a whole institution to be networked to ensure access to multimedia and learning- rich resources via the school's Intranet and the Internet wherever students and teachers are, in or out of school. The computer labs and classroom computers need to be sufficient in number to allow ready access by students and staff in most subjects across the school. A wide range of peripheral and remote working devices, including video-conferencing, is provided and integrated into the curriculum. Large and small group presentation facilities are readily available.

Despite the above desired situation, most Institutions in Africa face barriers to effective integration of ICT in the teaching and learning process; limited infrastructure in terms of satisfactory physical conditions of laboratories and the subsequent accessibility of the resources (ICT) to the learners. Many commercial and academic developers of educational multimedia have focused primarily on information access and presentation .However, it is easy to see that multimedia has tremendous potential to enhance the vividness with which information can be presented and ease with which it can be accessed, the main barriers to learning are not generally that appropriate information is difficult to access or badly presented. The problem has more to do with that information .Accessibility and use of ICT allows students to investigate more thoroughly the real world.(Opira Geoffrey 2006)

CHAPTER THREE

3. RESEARCH DESIGN AND METHODOLOGY

3.1. The Research Design

The major component of this section are methodology, source of data, the sampling techniques and procedure of data collection and method of data analysis .This study aimed by describing the impact of information communication technology on education of post graduate students on choice their field of study as important construct for the development of teaching and learning process. The research used both quantitative and qualitative methods. The researcher selected descriptive survey to assess postgraduate students in Adama science and technology school of applied natural science.

3.2. Methodology

3.2.1 Research Area

The study carried out in the Oromia, region east showa zone at Adama center in Adama Science and Technology University. The study focuses on the impact of information communication technology education on the field of study of post graduate students' school of applied natural Science. East Shewa zone is one of the zone of the Ethiopia region of oromia and Adama center was special zone.

MAP OF THE STUDY AREA

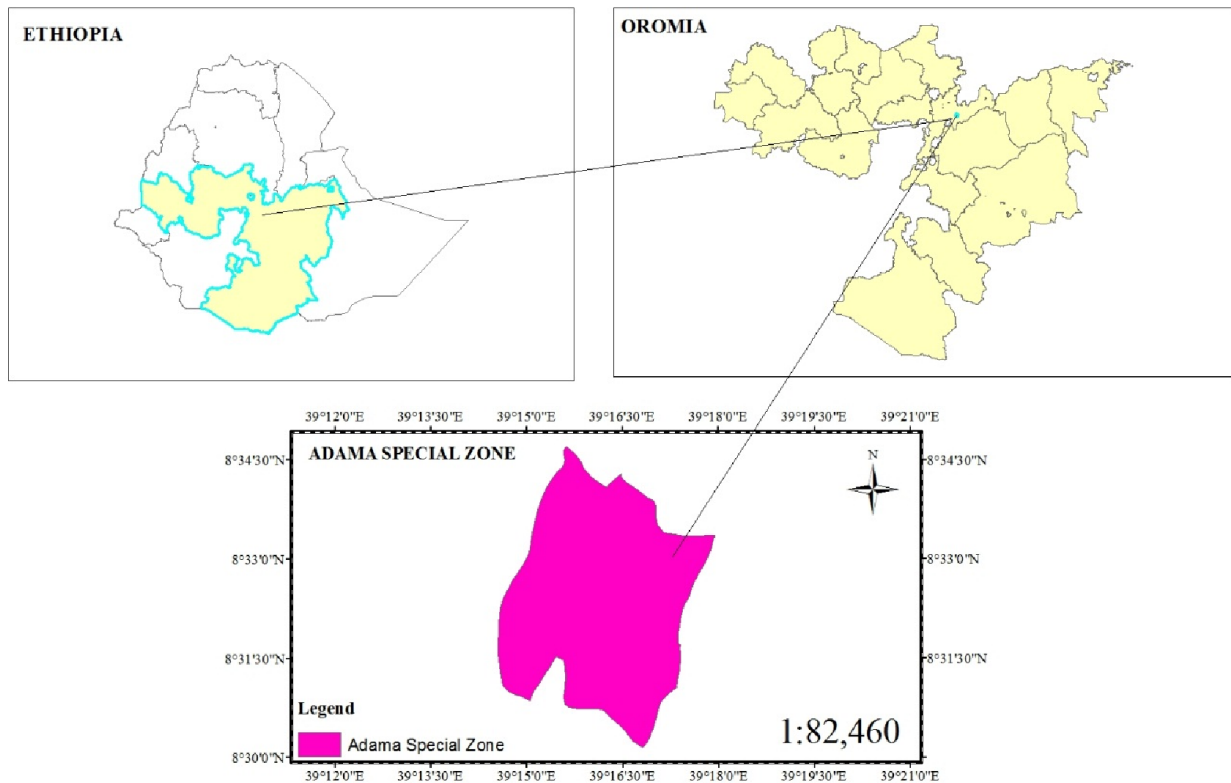


Figure:1 The map of research area indicated Ethiopia, Oromia and Adama special zone

3.2.2. Source and population of the study

The purpose of this study was in order to achieve the goal .The study was focus on the Adama Science and Technology University School of applied Natural Science students (physics, biology, chem. math) on the impact of information technology education on post graduate field of study.

3.2.3. Sampling size and sampling techniques

The study was carried out by taking sample size from Adama Science and Technology University (ASTU) School of applied Natural Science students (applied physics applied, chemistry applied, mathematics and applied biology students). Adama Science and technology had 176 post graduate students .From this total population, 80 students was selected using simple random technique.

3.2.4. Data collection instrument

This study was carried out using qualitative and quantitative data focused through questioner and interview to prove the information about the problem. The questioner were closed ended and open ended.

3.2.5. Data collection procedure

\For the participant before distributing and answering the questioner brief explanation and instruction was give about the purpose of the study and they were advised to provide the real response The questionnaire was field by the students in the presence of data collector under restriction that did not allow exchanging information when they fill the questioner and also the information that collected for using interview by the participant.

3.2.6. Method of Data analysis

The data collected through different instrument was organized, presented in table and then analyzed statistically using such statistical methods.persentage, mean and standard deviation. Tables and graphs were generated from questionnaire and results so that essences of the interpreted information obtained can be presented systematically. Finally the results of analysis were interpreted to answer the basic research question.

Questionnaire

The questionnaire were designed to get information about the impact of information technology on the education of post graduate students .Both closed and open ended question were used. Open ended question were to help supplement information given. In the closed ended questions helped in obtaining more completed data. The respondents was expected to give their genuine response with great freedom. The questioners were distributed to 80 respondents which are 46% of the total population.

Interview

The interview used to collect primary data. Face to face interview guide were setup with set of out lined questions about issues to be explored. The out lined questions were meant to guide and make sure that all the relevant topics are covered interview. It constructed for the post graduate students in the Adama Science and Technology. For the participant before distributing and answering the question brief advice was given before giving information. Interview guides permitted the researcher to probe and guide the respondents for detailed information and help keep interaction focused.

CHAPTER FOUR

4. RESULTS AND DISCUSSION

This chapter deals with presentation through questioner and interview. It consists of two parts. The first part was concerned with the description of the background characteristics of the respondent sample population. The second part is concerned with the analysis and the interpretation of the main data. Both quantitative and qualitative data analysis techniques were used. As already noted, a structured questioner was administered to 80 sample of Adama Science and Technology University School of Natural Science students. The data were obtained, analyzed using frequency, mean and standard deviation. The information gathered through interview was analyzed qualitatively.

4.1. The Characteristic of Respondent

The characteristics of the respondents give the background information of the samples taken from the target population. Regarding questionnaires, a total of 100 questionnaires were distributed and 80 (93%) were returned back, of these respondents. Description of the characteristics of the target population gives some basic information about age, sex, marital status, occupation and educational level of the respondents. The following table contains about the general characteristic. The static data was analyzed using Statistical Package of Social Science (SPSS).

Table1.The Demographic Characteristics of Participant

Item	Variable	Level	Frequency (f)	Percent(%)
1	Sex	Male	73	91.2
		Female	7	8.8
		Total	80	100
2	Age in a Year	20-30	34	42.5
		31-40	18	22.5
		41-50	22	27.5
		>50	6	7.5
		Total	80	100
3	Educ Level	Degree	75	93.8
		Master	5	6.2
		Total	80	100
4	Work Exp	1-5	21	26.2
		6-10	19	23.8
		11-20	31	38.8
		21-30	8	10
		>30	1	1.2
		Total	80	100

The above table was mentioned about the demographic character of the respondents.

Table 1 indicates that the age, sex, marital status, work experience and educational level are back ground of respondents.

Item 1 Describe the sex composition of participant of the study that indicated about 91.2% the respondents were Male students while the rest 8.2% Females this was indicate most of the respondent was male students.

Item 2. It describes the age of participant 42.5% Of respondents in the range of 20-30age and 41-50 age was 27.5% respondent this indicated the majority of most the respondent were very young.

Item 3. Describes the year of service of participant was also significant as can be seen in item 3 the respondent that was 1-5 year service 26.2% ,from 6-10 year service 23.8% and 11-20 year service 38.8% indicated that they have more service, >30 year service 1.2%

Item 4. Describes the educational level 93.8% Of the respondent had the first degree and the rest 6.2% had the second degree.

4.2. Analysis and Interpretation of Data

In this section, descriptions of respondents' opinions per the items of the questionnaire relating to the objectives of the study are presented. Respondents were requested to react to the items by ticking (checking) the option that best described their opinions on a Likert scale ranging from Strongly Disagree to Strongly Agree .

Table: 2 the respondent of post graduate students on the given item

No	Item	Strongly Disagree		Disagree		Neutra l		Agree		Strongly Agree		Mn&Sd	
		f	%	F	%	f	%	f	%	F	%	Mn	Sd
1	All post graduate students have learned ICT	18	22.5	36	45	7	8.8	10	12.5	9	11.2	2,4	1.28
2	ICT increase the students Performance	7	8.8	8	10	3	3.8	21	26.2	41	51.2	4	1.32
3	Having enough skill to use Computer in your field	25	31.25	37	46.25	6	7.5	7	8.75.	5	6.25	2.21	1.15
4	All post graduate students Have better integration With ICT than other	5	6.2	6	7.5	4	5	39	48.8	26	32.5	3.94	1.11

Mn=Mean Sd=Standard deviation

The data was analyzed and interpreted using percent and mean by giving scale for the mean value

- < 1.49 is strongly disagree
- 1.5- 2.49 is disagree
- 2.5-3.49 is neutral
- 3.5-4.49 is agree
- >4.5 is strongly agree

Regarding Item1the response postgraduate students have learned ICT.

The response of 36(45%) Disagree,18(22.5%)Strongly disagree 7(8.8%) Neutral,10(12.5%) Agree and 9(11,2%) Strongly agree. The mean value of them was 2.45.From the total population 67.5% (54) were disagree this value indicated the majority of the post graduate student did not learn information communication technology, so there was great impact when they were choice and study their field, most of the applied natural science students in Adama Science and Technology lack of ICT therefore learning ICT was an important for choice and study their field.ICTs have the potential to accelerate, enrich and deepen skills. The result was related to Seyed Ul Noor amin (2010)and areti valasu(2008) .

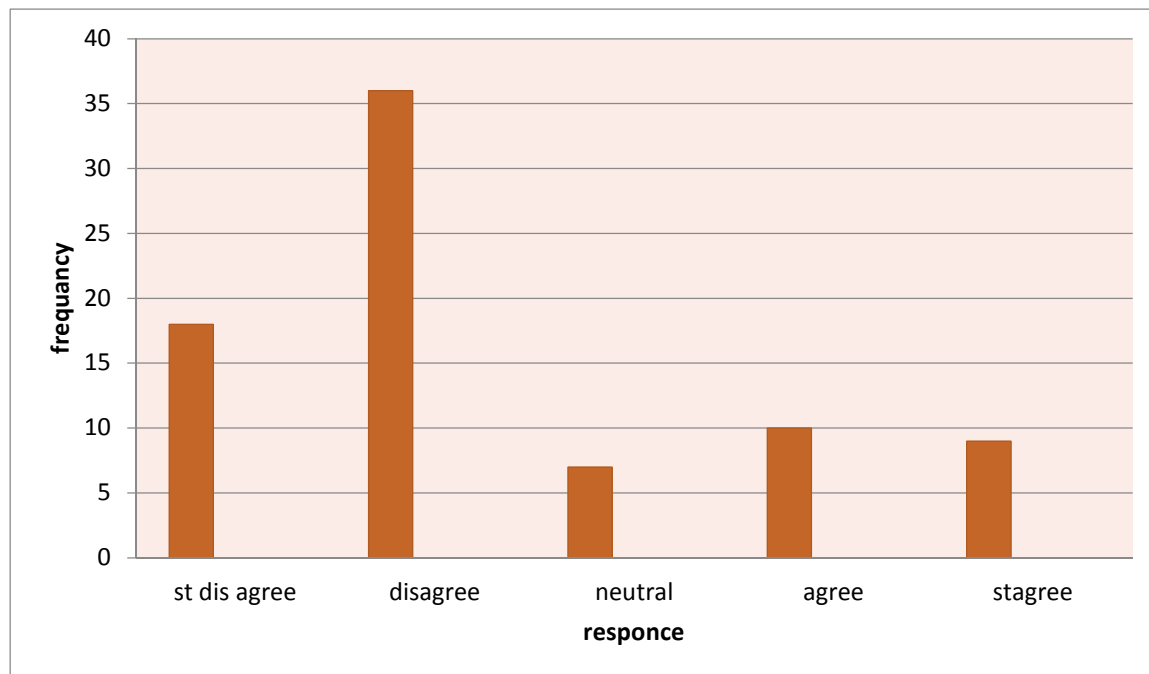


Figure 2 the graph indicate the respondent of on the item 1 All post graduate student have learned ICT.

Regarding Item 2 that ICT increase the students performance.

The response was 7(8.8%) strong Disagree, 8 (10%) Disagree, 3(3.8%) Neutral, 21(26.2%) Agree 41 (51.2%) Strong agree the mean value of the respondents were 4.00

From the sample 77.4% (62) were agree this response was indicate that ICT was the determinant factor to increase the students performance many scholars that were write about use of ICT to performance. The use of ICT to support and change the teaching learning process in many subject areas. The internet allows use of small class interactive in large class and had beneficial impact on students performance. The use of digital technology in higher education can have significant and positive effect both in students' achievement and performance. ICT helps to improve the quality of learning education out come. Below 8%the response was disagree. The finding of the result was coincide to Muhamed Saqib(2015)

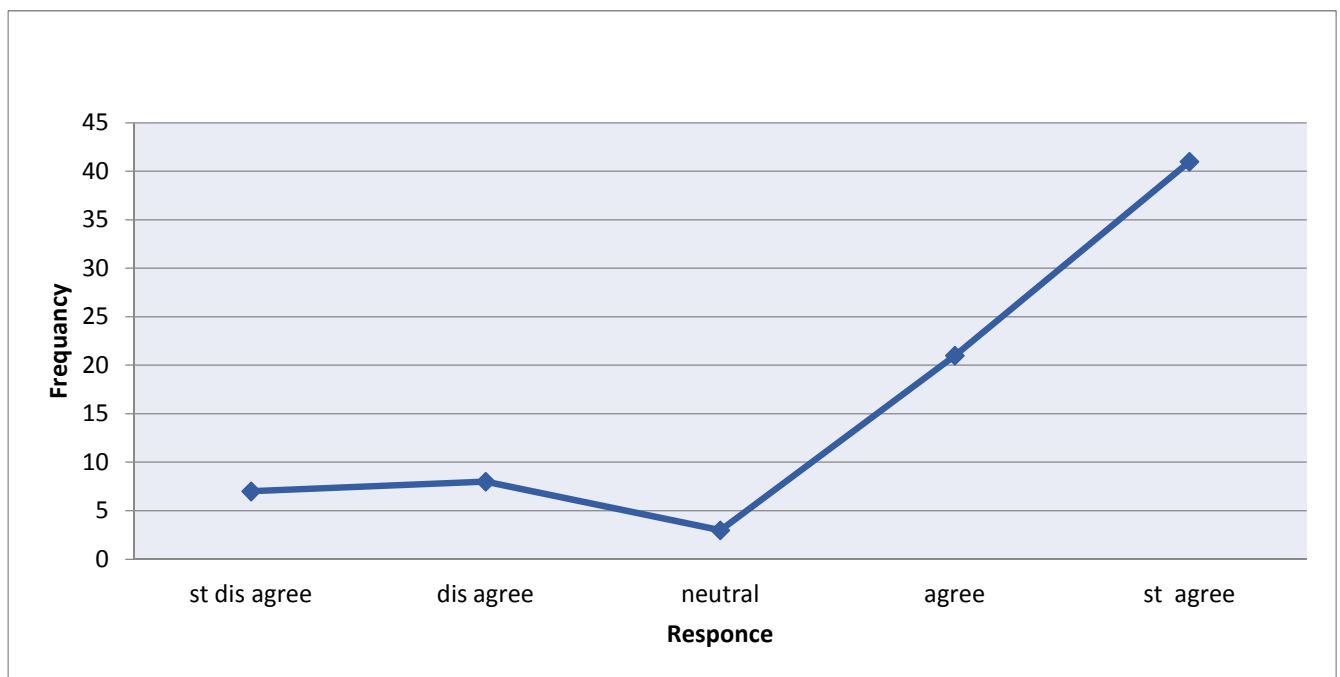


Figure: 3 Shows that the respondent of Item 2 ICT increase the students performance..

Regarding Item 3 the response was to that of having enough skill of computer.

The response of 25(31.25%) Strong disagree 37(46.25%) Disagree6 (7.5%) Neutral 17 (8.7.5%) Agree5 (6.25%) strong agree the mean value of the respondent was 2.21.

From the total sample 77.5% (62) were disagree the response was indicate that the majority of the students have skill gap on their field of study the re fore they have to get knowledge of computer for their field of study Information and communication technology (ICT) is thus of technology in managing and processing information with the use of electronic computer system and computer soft ware to convert, store, protect, process, transmit and retrieve information. Very few jobs today do not required the use of skills in technology, collaboration, teamwork, and information, all of these can be acquired through teaching with ICT.

It fundamentally changes the way we live, learn and work. Technology has entered the classroom in a big way to become part of the teaching and learning process. Many teachers in the country did not have basic computer appreciate skills and noted that the problem was a hindrance to efforts at achieving the use of computers for educational purposes in school Students that used computer-based instruction scored higher students without computers.

The students also learn more in less time and they like their classes more(AretiVel 2010)

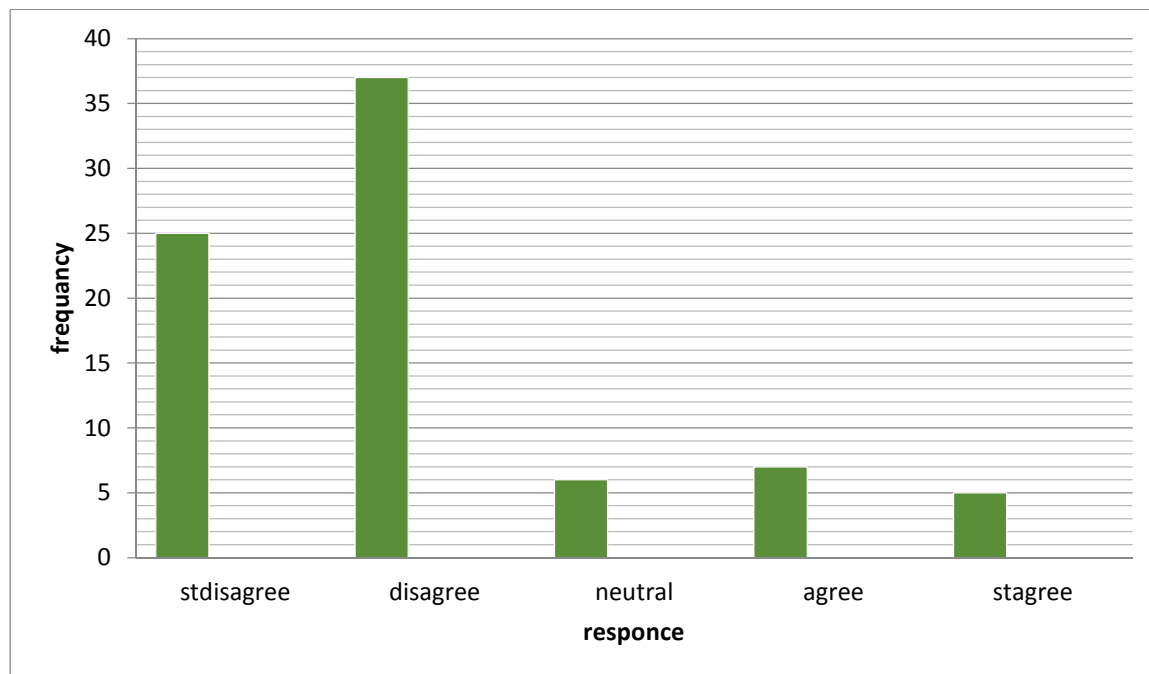


Figure: 4 shows that the respondent on the Item 3 All post graduate having enough skill on ICT

Regarding item 4. All post graduate students have better integration with ICT.

The response were 5(6.2%) Strongly disagree, 6(7.5%) Agree, 4(5%) Neutral, 39(48%) Agree, 26(32.5%) strongly agree the Mean value was 3.94.

Out of the total sample 81.3% were agree this implies the integration of ICT with post graduate students better than other to study their field and to get more information. The role of ICT had great impact. More and more studies now support the claim that technology has great potential to provide new kinds of instructional opportunities and to enhance the knowledge and learning experiences of both the teachers and students. However, the effect of ICT in teaching and learning is not yet fully established. Yet the need to prepare students for the information age is a recurring educational theme worldwide since today's students are to spend their career life in a very dynamic technological environment.

The integration of ICTs in teaching and learning is more likely if the tools and resources of the Internet, multimedia, and related technologies are seen as being integrally connected with literacy learning in the wider sense of learning as a matter of accessing information, communicating, and applying knowledge the finding result of found in a good agreement with that of Opiaro Geoffaray (2010)and Berhanu Moges(2015).

In other words, to the extent that they represent new tools, media, and functions of learning in the digital age, ICTs complement, extend, and transform the role of language-across-the-course in learning as the very basis of generic skills or competencies and applied knowledge as well as mere skill or content transmission. Thus, it might be argued that an across-the-course approach does not just complement and extend a more skills focused and specialized use of ICT in formal education, but it is a key to ICT integration in teaching and learning.

ICT can provide access to information sources, enable communications, create interacting learning environment and promote change in methods of teaching. Quality and access to up-to date and relevant materials can be improved while offsetting some costs of textbooks. However, the improvement in quality resulting from the new ICTs is yet to be justified with the cost in developing countries (Swati Desi2010)

ICT as a medium for teaching and learning. This refers to ICT as a tool for teaching and learning itself, the medium through which teachers can teach and learners can learn.

It appears in many different forms, such as drill and practice exercises, in simulations and educational networks. ICT had attachment with post graduate students to contact with instructors and the majority of work of the post graduate students using computer based ,therefore students Must have to apply computer aid work on their field of study.

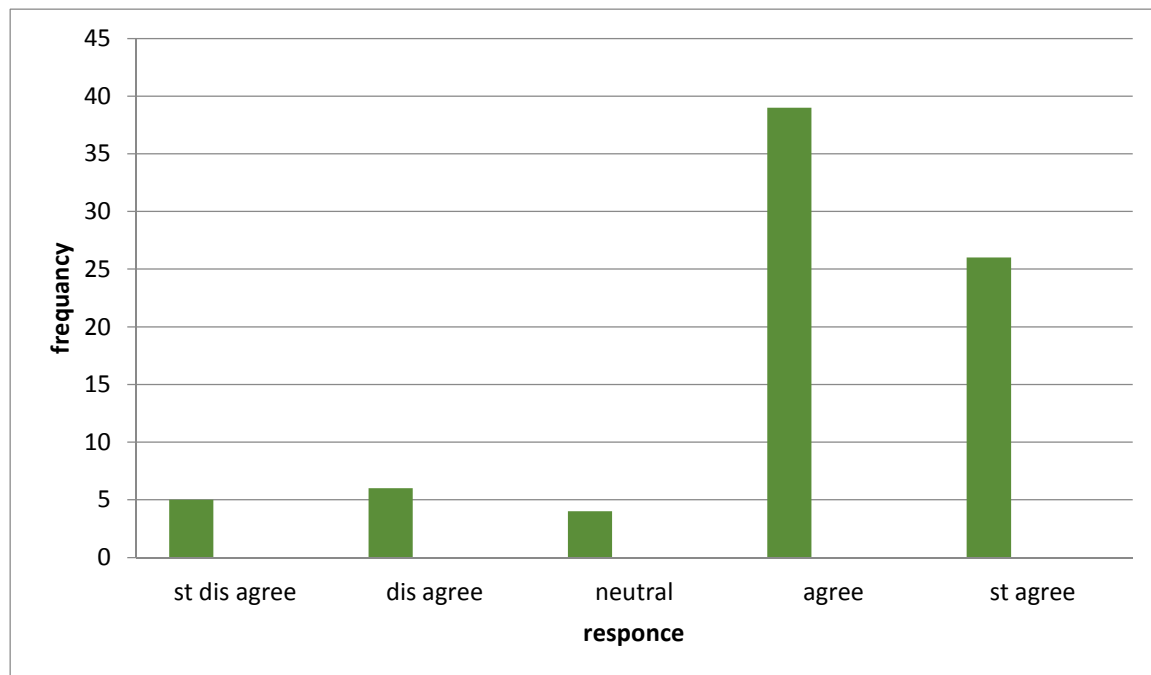


Figure 5 Shows that the respondent on the Item 4 All post graduate have better integration with ICT than other

Table: 3 Response of closed ended question

N0	Item	Frequency (f)			Percent (%)		
		Yes	No	T	Yes	No	T
1	Is there any impact that ICT has on your field of study?	61	19	80	76.2	23.8	100
2	Do you have skill of using computer?	36	44	80	55	45	100
3	Do you think ICT helps for achievement and performance?	69	11	80	86.2	13.2	100
4	Do all natural science pg student need to imp ICT knowledge in fie study?	55	25	80	68.8	31.2	100
5	Do you have internet regular service in you work place?	37	43	80	46.2	53.8	100
6	Do all natural science PG student need computational knowledge in Their field of study?	44	36	80	55	45	100
7	Is it necessary to teach computational course at high school and preparatory level?	72	8	80	90	10	100
8	Is the use of ICT in class presentation cost – effective?	75	5	80	93.8	6.2	100
9	Do you take any ICT training so far?	26	54	80	32.5	67.5	100
10	Do you think knowledge of ICT have impact on student choice	66	14	80	82.5	17.5	100
11	Is ICT significant impact on teaching learning natural science	71	9	80	88.8	11.2	100
12	Do you think that enough logistic support within the academic institution allow students to have regular access to ICT education	60	20	80	75	25	100
13	Do you think computer Aided instruction student performance	76	4	80	95	5	100

Table 3 Regarding the Item1 Is there any impact has on your field f study?

The response was 61 (76.2%) yes and 19(23.8%)No this indicate ICT had impact when study their field in order to get more information, ICT provides resource and service s to support the education, research and public services missions to universities.ICT also enhances the development and implementation of policies and procedures necessary to ensure the effective, secured and appropriate use of universities information resources and services. ICT provides a lot of services for students including distance education programmers, inexpensive printing, cell phone plans, internet connection, free dial-up, technology equipment, rentals classroom media stations, etc. Lecturer and students get relevant materials needed through the Internet. Such quality materials are used in equipping the students and upgrading their knowledge in their field of study.. It is evident that ICT incorporates and extends some of the power of reading, writing and arithmetic

It facilitates the automation of many mental activities. ICT has proven to be a valuable aid to solve problems and task in education, business, industry, science and many other human endeavors. The Science of Teaching and Learning have made great progress in recent times. The finding result was agree with Seyed Alnoor Amin (20 10)

to Implement their work the impact of ICT was great

Regarding Item 2 Having skill using computer?

The response was on having skill using computer 36(45%) yes and 44(55%) No. This indicate most of the post graduate applied natural science students they did not had computer skill. Another issue that needs to be examined regarding the ICTs usage of students is the effect on their performance. The result was coincide with to AretiValasidu(2008) meta-analysis study revealed that on average, students who used computer-based instruction scored higher students without computers. The students also learn more in less time and they like their classes more when computer-based instruction was included.

Regarding Item 3. ICT help for the student achievement and performance

The response was that ICT that help for students achievement and performance 69(86%) yes and 11 (13.5%) No the majority of the respondent was that ICT helps for students achievement and performance. Several scholars write about this factual impact of ICT on students' achievement find that creative use of the Internet allows use of small class interactive techniques in larger classes and has a beneficial impact on student performance. ICT helps to improve the quality of learning and educational outcomes. Use of digital technologies in higher education can have significant positive effects both on students attitude and achievement the study was agree to Md.sharman et al(2015).

Regarding item 4. All natural science postgraduate students need to implement ICT.

The response were 55(68.8%) yes and 25(31.2%) No concerning the respondent natural science post graduate students need to implement ICT knowledge when they study their field and to do their work Many studies were conducted in the past to evaluate the effectiveness of computers in the learning environment. Swati Desi (2010) In those studies, learners did not use ICT in a normal classroom setting or within their subject curriculum, but were using software specifically designed to address specific conceptual difficulties in subjects such as science or mathematics .Realistically, several researchers admitted that ICT have an impact in learning and teaching of science. Globally, the use of information and communication technologies (ICTs) is fast gaining prominence and becoming one of the most important elements defining the basic competencies of student(Swati Desi2010).

Regarding item 5 .Have you internet service in you work place?

The response of students on to have internet service in your work place 37(46 .2%)yes and 43(53.8%)No .Most of the respondent was hadn't internet service in the work place, this was clear that without internet access student couldn't improve their performance and not had enough knowledge the finding result were relate to (Siritongthawor et al 2006).

Regarding Item 6 .All natural science post graduate student need computioational

The response on this item was 44(55%) yes and36 (45%) No. This Indicated that the majority of the respondent was that students thy need computational knowledge to do their field effective Globally, the use of information and communication technologies (ICTs) is fast gaining prominence and becoming one of the most important elements defining the basic competencies of student the finding result was agree with Arreti Valasidu(2008)

Regarding item7 the necessary computational course at high school and preparatory .

The response on this item was 72 (90%) yes and8(10%)No according to the respondent 90% was agree to teach the students at this level computer based learning can help the students to do their work easily within short time. The computational science that supports both the science and engineering problem solving and the developmental computer and information science .In practical use it typically the application of computer simulation and other forms of computation from numerical analysisheoretical computer science to solve problems in various scientific disciplines. The field is different from theory and laboratory experiment which are the traditional forms of science and engineering. The scientific computing approach is to gain understanding, mainly through the analysis of mathematical deals implemented on computers. Scientists and engineers develop computer programs, application software, that model systems being studied and run these programs with various sets of input parameters computational science involves using computers to study scientific problems. The finding result was relate with Lyle NLong (2012)

Regarding of Item 8. The use of ICT in-class presentation

The response was on the use of ICT in class presentation 75(93%)yes and 5(6.2%)No almost the majority of the respondent replay that it was interesting presenting the lesson using different ICT tools such as plasma teaching video conference. Regardless of the quantity of technology placed in classrooms, the key to how those tools are used is the instructor. The majority of instructors believe technology usage is important for teaching, however, lack confidence and understanding during integration process. Furthermore, instructors should possess the skills and competencies essential for designing, delivering and evaluating instruction.

When technology usage is aligned with the instructional goal, where technology is integral to teaching, successful integration might be succeeded. . Otherwise, the use of technology alone is not a sufficient indicator of integration. Therefore, “teacher educators need to place instructional technology education within the context of teachers’ work in the classroom the study was agree with Opira Geoffre.(20010).

Regarding Item 9. Did you take any ICT educational training so far?

The response on did you take any ICT educational training so far 26(32.5%)yes and 54(67.5%)No. The respondent or 67.5% agree that they did not take any training so far this indicated that without any training it is great challenge to choice and study their field . The process of technology adoption must be accompanied by years-long support that reflects teachers’ concerns as they adjust to the new technology and make changes in their teaching styles and modes to adapt to it. The more complex an innovation is, or the more change that is required of a teacher, the longer the change process will take, and the less likely an innovation is to be successfully adopted. The need for teacher training is widely acknowledged. Teachers, trainers, and other learning facilitators have to be given the knowledge, examples and time to “adopt” ICT in their daily practice. Empowering teachers and trainers is therefore fundamental. One of the problems is that today's teachers need to learn to teach with digital technologies while many of them have not been taught to do so. Teacher training should not just encompass ICT

skills but rather a full understanding and complete mastery of ICTs as pedagogical tools(Brhanu moges (2015).

Regarding Item 10 the knowledge of ICT have an impact on student choice and study their field.

The response was that knowledge of ICT have an impact on students choice and study their field 66(82.5%)yes and 14(17.5%)No. This was indicate that the knowledge of ICT have great impact on students choice .when they had this knowledge they can select different field and achieve their goal.ICT applications provide many options and choices and many institutions are now creating competitive edges for themselves through the choices they are offering students. These choices extend from when students can choose to learn to where they learn .The study was agree with Ron Oliver (2002)

Regarding item 11 Teaching and learning natural science using ICT significant.

The response was on teaching and learning Natural science using ICT significant 61(76.2%) yes19(23.8%)No. Many of the respondents answered that for teaching and learning natural science ICT was one of the major factor in education. In higher education, a range of technologies appears to provide an exceptional opportunity to improve learning and teaching within the higher education system. At present, however, opinions are divided over the efficacy of such an approach and the extent to which technology should be embraced in teaching. In recent years, various teaching models have been developed including the blended learning mode which combines face-to-face approach and technology use. Some scholars believe that blended learning can improve teaching and learning, and support the curricular objectives the finding result agree with (Arzal 2010)

Regarding item12. Logistic support within the academic institution allows all students to have regular access to ICT education.

The response was on this item 60(75%)yes and 20(25%)No the respondent was reply that the material support necessary that for the student to study their field and to do their work effectively ICT facilities are not sufficient to enhance quality education to learners and teachers, even where it exist there are not sophisticated enough to stand the taste of time like the ones acquired in developed countries . Problems of quality and lack of resources are faced by university ,institution and schools with every increasing students number the result of the finding in good agreement with that of(moges birhanu2015).

Regarding item 13. Computer Aided instruction has improved students performance.

The response on computer aided instruction were 76(95%) yes and4 (5%)No. The majority of respondent answered that computer aid instruction important to apply their study very easy and to solve different problem. Computer-supported learning (also referred to as computer-aided learning and computer-based training) and the use of computer as a tool. The former consisted of different kinds of educational software, which still has a strong representation in learning objects (LiisaIlmoki2008).

Question regarding open ended to the research.

How does the implementation of ICT influence teaching practice? When we implement the ICT by making training and introducing the technology to the students, By using computer based instruction give different problem to the Learner. In-service training is one of the (few) ways in which teachers typically have been given support to achieve ICT skills, and it has been successful in a way: teachers, like other people, use ICT in their activities outside school. It is remarkable that this use does not transform to teaching, although it does transform teachers' professional activities such as preparing lessons or administration. The teacher's professional knowledge is situated in practice, in classroom events and activities. It is challenging to change or to develop this knowledge. How ICT help students improve learning of education in the field of natural science? The use of ICT in teaching is a relevant and functional way of providing

education to learners that will assist in imbibing in them the required capacity for the worth of work. Investigations reveal that many learners at the senior secondary school in Lagos State strongly detest the manners in which the physics teachers handle and deliver physics knowledge and lesson. The quality education is basic need of the society. There are number of effective teaching & learning methodologies in practice. Technology is the most effective way to increase the student's knowledge. Here comes the role of ICT in the education sector! Being an academician I cannot imagine education without ICT. Now a days ICT (specially an internet) plays imminent role in the process of integrating technology into the educational activities.

Analysis of Interview

The respondent belong to interview related person was for the benefit of information technology for post graduate students it helps them for gathering information and shearing and receiving any data. It also great advantage to use internet exploring in addition to use on line learning Which enable users to access, store transmit, and manipulate information to use ICT in our academics work on line learning, video conference was applicable making lecturing for the students using computer. It had more advantage. According to the respondent the majority of the postgraduate students lack of usage of Information communication Technology on their academic work, most of the time they had use traditional or lecture (Theoretical)method. Therefore when the PG students used in their academic work there was great impact on their field of study.

We know ICT that increase the students performance in their field of study it helps them in order to get more information by searching from different website In higher education, a range of technologies appears to provide an exceptional opportunity to improve learning and teaching within the higher education system. At present, however, opinions are divided over the efficacy of such an approach and the extent to which technology should be embraced in teaching. In recent years, various teaching models have been develop.ICT has greater impact in learning process according to the respondent the role of ICT was it accelerates teaching learning process.

The importance of ICT is quite evidence from the educational perspective. Though the chalkboard textbooks, radio/television and film have been used for educational purpose over the years, none has quite impacted on the educational process like computer. While television and

film impact only on the audio visual facilities of users, the computer is capable of activating the senses of sight, hearing and touch of the users. ICT has the capacity to provide higher interactive potential for users to develop their individual, intellectual and creative ability.

The impact ICT on physics education ICT may have a greater role to play in a curriculum that places greater emphasis on scientific reasoning and analytical skill. It give several information by using you tube and down loading different text, using video conference to give tutorial .Most experts in the field of education agreed that, when properly used, information and communication technology hold great promise to improve teaching aid learning in addition to shaping work force opportune. Using ICT either as a tool in a practical investigation or as a substitute for the laboratory -based elements of an investigation can aid theoretical understanding. It helps to set computer programming and manipulate the complex mathematical operation. The role of ICT it promote equal opportunity to obtain information, it develop a system of gathering educational information it increase variety educational service.

Electronic communications should be used not just to disseminate information but to create a community of learners. Educators use ICT as a modern tool that enables to modify the teaching methods in order to improve students' performance. Educational institutions are adopted ICT based teaching method and offering ICT related academic programs. Students are availing the ICT facilities using different. According to the respondent giving the introductory course at the level of preparatory and at high school it will make the students to study their field effectively and it improve the students ability also saves time.

CHAPTER FIVE

5. SUMMERY CONCLUSION AND RECOMANDATION

5.1 Summery

The study was conducted in East Shewa Zone ,Oromia Regional state Adama Science Technology University to assessing the impact of information technology education on the field of study of post graduate students (the Case of Applied Natural Science at Adama Science and Technology University). In order to conclude the researcher synthesize general viewpoint of the results obtained, taking into consideration the relevant aspects of the literature.

The results provided by both the quantitative and qualitative data were analysis. Regarding all post graduate students have learned ICT. Out of the total sample 67.5% respondent was disagree. This was indicated that the majority of students had skill gap of ICT. The advantage of information technology crucial to develop the post graduate students capacity to get more information to their field of study. Out of the total population over 72.4% agree that ICT increase the student's performance. This was replay that information technologies on students' field of study improve the students' ability and achievement, it also increases the performance of student to be successful.

The result was from the respondent that all post graduate student have enough skill of computer 77.5% disagree this was indicate most of post graduate student have no enough skill. Information technology was accessible in order to change the students' skill by give training, tutorial, to study their field also to-do the research effectively. The information communication technology had great impact in this real world. The result was on ICT in that the more positive the students' feeling, the more they engaged with the learning activities. This outcome then stimulates their learning motivations as the pre-condition for the improvement of their academic performance. 81.5 % respondent was replay that all post graduate students had better integration this was indicate that ICT had more integration with post graduate students to do the research and to study their field. 76.2% respondent agree that ICT had impact on their field of study therefore postgraduate students to fill skill gap 55% respondent reply that did not have skill of

computer based on the finding ICTs training were necessary for the student. 86.2% respondent agree that ICT had very important to increase the students performance and achievement based on the finding all natural science post graduate students need ICT knowledge in the field of study and internet regular service to get more information and to do the thesis work .Computer based instruction better than traditional way of learning because of computer based instruction was student center. In general ICT education has great role it develop a system of collecting and disseminating education information, it promote equal opportunity to obtain information and it increase variety of education service. ICTs are exerting impacts on pedagogical approaches in the classrooms. Their contribution to changes in teaching practices, school innovation, and Community services are considerable.

5.2 .Conclusion

Information and communication technology is a power of tool for the development of quality education teaching and learning. From study conducted and major finding obtained the following conclusions were derived out the total sample 67.5% response did not learned ICT this indicate that most of the post graduate students shortage of enough knowledge during their field of study ,therefore students would train or learn more and more to get knowledge.

According to the finding of study 77.5% of response indicate that majority of post graduate student hadn't enough computer skill they don't have training so far therefore students were in problem to do their thesis work. The students should take training and learn more to develop their skill. In addition most of the post graduate natural science students shortage of implementation and usage of ICT this indicate students was in problem in academic work therefore implementation of ICT important sharing and gathering information in addition on line learning and video conference would apply to increase their performance.81.3% response indicate that ICT had better integration with post graduate students therefore student to manipulate and to do their thesis effectively.

5.3 Recommendation

Based on the finding of this study the researcher recommended the following

- Introduction course of computational course should give to the post graduate students during the first semester.
- Give training based on how to use computer and electronic device using different program in appropriate way.
- Increase the internet access in school and work place.
- Preparing logistic support within the academic institution.
- Encouraging the students to exercise ICT in their laboratory.
- Encouraging to apply computer based instruction in their class.

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APENDIX

Adama Science and Technology University School of Applied Natural Science
Questionnaire for Adama Science and Technology University post graduate
students of School of applied natural science summer program.

Objective of the questionnaires

The questionnaire is constructed to gather information for the analysis of the thesis. The purposes of the study is to collect information about ICT current status of post graduate student of Adama Science and Technology University

Direction

No need of to write your name.

Put "✓" in the box you agree with.

Give short answer and precise answer on the space provide.

Thank you for your cooperation

APPENDIX A

Part I

Back ground information

1. Sex

Male ☐ Female ☐

2. Age

20-30 ☐ 31-40 ☐ 41 -50 ☐ Above 50 ☐

3 Education level

Degree ☐ Maser Degree ☐

4 Work experience in years

1-5 ☐ 11-20 ☐ 21-30 ☐ Above 30 ☐

5 Marital status

Single ☐ Married ☐

Part II

The statements listed below describe the impact of ICT education the field of study Post graduate students. Hence you are asked to express about each statement by indicating whether you are strongly agree (5), agree (4), Neutral (3) disagree (2) and strongly disagree (1)

No	Item	Scale				
		1	2	3	4	5
	The impact of ICT on education					
1	All Post graduate student have learned ICT					
2	ICT increase the students performance					
3	Having enough skill to use computer in your field					
4	All post graduate students have better integration with ICT than other					

5 If you have additional impact of ICT on education please specify

-

APPENDIX B

PART II

Instruction

Dear respondents, this questionnaire is prepared for the study of the impact of information technology, ICT, education on student's selection of post graduate field of studies in Adama Science and Technology University School of Natural Science. Write your correct information below the statement on the space provided.

2.1 Is there any impact that ICT has on your field of study?

A Yes B No

If your answer is yes specify the impact

2.2 Do you have skill of using computer?

A Yes B No

If your answer is No why?-----

2.3 Do you think ICT helps for students' achievement and performance?

A Yes B No

If your answer is yes how?-----

2.4 Do all natural science post graduate students need to implement ICT knowledge in the

field of study? A Yes B No

If your answer is No, why? Specify your answer-----

2.5 Do you have internet regular service at your work place?

A Yes B No

If your answer No why? -----

2.6 Do all natural science post graduate students need computational knowledge in their field of study? A Yes B No

2.7 Is it necessary to teach computational course at high school and preparatory level?
 A Yes B No

2.8 Is the use of ICT in-class presentation cost- effective technology?
 A Yes B No

2.9 Did you take any ICT educational training so far?
 A Yes B No

2.10 Do you think knowledge of ICT have an impact on students choice of area of study?
 A Yes B No

2.11 Is ICT will have any significant impact on teaching and learning of Natural science?
 A Yes B No

2.12 Do you think that enough logistic supports within the academic institutions allow all students to have regular access to ICT education?

 A Yes B No

3.1 Do you think that Computer Aided Instruction has improved students' performance on the teaching learning activity A Yes B No.

If you say yes

If you say No -----

3.2 How does the implementation of ICT influence teaching practices?

3.3 How ICT help students improve learning of education in the field of natural science? -

3.4. What is the impact of ICT on attitudes of student toward education?

APPENDIX C

Dear respondent this questioner is belong to interview, you have to give your own response based on the following question.

Part III

Back ground information

1. Sex

Male ☐

Female ☐

2. Age

20-30 ☐

31-40 ☐

41-50 ☐

Above 50 ☐

3 Education level

Degree ☐

Master Degree ☐

4 Work experience in years

1-5 ☐

6-10 ☐

11-15 ☐

16-20 ☐

a above 20 ☐

5 Marital status

Single ☐

Married ☐

PART III

INTERVIEW QUESTION FOR ICT

1.What is the benefit of information communication technology for post graduate students ?

2 .How often do you use ICT in your academic work?

3 .To what extent do you think\ICT education improves your performance in your field of study?

4 Do you think ICT has greater impact on your learning process?

5,What is the impact ICT on physics education?

6,How do ICT improve the performance of student?

7. Do you think that computational course is necessary at high school and preparatory level?
How?-----

8. Do you have a limited knowledge of ICT usage have any impact in your choice of PG field of study?-----

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