ANALYSIS OF IMPLEMENTATION OF INFORMATION AND COMMUNICATION TECHNOLOGY PROGRAMS IN URBAN SECONDARY SCHOOLS. A CASE OF SELECTED SCHOOLS IN MAKINDYE DIVISION IN KAMPALA UGANDA.

BY

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DECLARATION

I, **AWOLUSI BAYO EZEKIEL** declare that this is my original work and it was done to the best of my knowledge.

Sign .....

Date .....

DEDICATION

I dedicate this research work to Almighty God for the successful years and strengths thus far.

APPROVAL

I, certify that this report was done under my supervision as a university supervisor and is ready for submission for examination.

Sign  .....

SUPERVISOR

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Date .....13th December.....

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Abstract

This qualitative and quantitative research set out to investigate the Analysis and Implementation of ICT in urban secondary schools in Makindye division. It is a recent activity that has brought forth a lot of interest. However, there are many challenges that hinder efficient implementation of ICT including: lack of ICT laboratories, electricity, and teachers' skills. This study explored how these challenges affect its implementation. Out of 10 public and private secondary schools in Makindye division, 5 were sampled for the study. A total of 34 respondents were sampled through purposive and stratified sampling. Questionnaires and interview schedules were used as main instruments for data collection. Out of 34 questionnaires distributed, 20 were properly filled and returned. Data analysis employed descriptive statistical techniques after which the results were presented in tables supported by some discussions. The result of this study indicated that computer are not enough in urban schools, teachers are not encouraged to teach using computer, computers are not available to teachers and students, most computer lesson were assessed theoretically and lack of computer laboratory's were limiting the implementation of ICT. Generally, computer lessons per week were not a challenge, while Qualified ICT teachers are ready to teach with ICT skills. These factors that limit the implementation of ICT; need to be dealt with by the various stakeholders including: the Department of Education, the school management and private partners.

CHAPTER ONE

1.0 Introduction

Technology is the most dramatic force shaping our environment it is changing at an ever increasing rate and affecting our life in many aspects. The issue of information and computer technology and education can be raised in many orientations, yet no doubt the most interesting and most debated is the issues of impact of ICT on education.

In Uganda, the national ICT policy development process was initiated in 1998 by the Uganda National Council of Science and Technology (UNCST) (Torach, Okello and Amuriach, 2006). Five years later in 2002 the UNCST submitted a draft national ICT policy framework to the cabinet which was approved the following year. The policy framework document recognized that Uganda would need to embrace the goal of lifelong education for all (Farrell, 2007). The study goes on to say that guidelines should be produced for schools to show how this can be done. The draft policy further observes that computer awareness should be introduced into the training of primary and secondary teachers on a phased basis, so that newly qualified teachers are equipped to make use of ICT as it becomes available. Besides, having acquired some ICT skills at the primary school level through pedagogy, the focus of ICT in the secondary sector for student's centers on the provision of computer applications skills at O level. This is expected to be executed through a subject called Computer Studies, taught in the schools that have sufficient equipment, and assessed at O level. This is to suggest that the teacher training colleges should provide as many teachers as possible with computer awareness, basic skills, and enough experience to make use of ICT in lesson preparation and in making teaching materials. This will help improve the quality of secondary education, and also lay the foundations for future use of ICT within primary and secondary classrooms. To effectively analyses these issues, the study will use a descriptive and analytical design to assess the different forms of ICT resources and how they are being used in schools while also assessing the limitations in implementing ICT in Urban schools.

1.1 Background to the Study

The youth, especially those who have had a secondary school level of education, could be taught how to build websites and other routine jobs on line. If experience from other countries is anything to go by, the youth could end up earning more than their parent who are private own business or civil servant. Provided there is reliable electricity power in urban area, there is nothing to stop entrepreneurs from investigating in these areas to deliver outsourcing services. The key advantage here would be much high salary and wages particularly if the workers are chosen from far, where they would need neither transport nor housing as they would be living at home. This type of investment would bring into urban and sub-urban areas a greater resource pool of expertise and services to develop the villages and allow innovative social mobility among members of the community.

In a complex society like Uganda, many factors affect ICT implementation and integration. An interdisciplinary and integrated approach to ICT use is necessary to ensure the successful development of Ugandans economy and society (Mac-ikemeima, 2005).the incorporation of information and computer technology in the education sector is further important to meet the limitations presented by new trends, especially with the global communication of knowledge. It is essential that the O level students become familiar with the concept and use of information and communication technology in order equip them for future job market. Similarly, the schools can achieve better quality in teaching methodology.

Over the last five years Ugandans schools have dramatically increased spending on classroom technology to more than millions of dollars annually, because there has been a widely held belief by government, business and educational leader that "wiring schools, buying hardware and software and distributing the equipment throughout will lead to abundant classroom use by A level and O level students and improved teaching "(Cuban,kirkpatrick, and craig winter 2001). In recent years a growing number of critics of technology in the classroom have raised questions about what kind of return schools have gotten for this investment. Larry Cuban has been quick to note that his surveys suggest that fewer than 20%of A level student use technology several time a week, and up to half of all O level didn't use technology at all.(Cuban,ettal,winter 2001;Cuban,Agust 1999)Even if upper secondary used the technology, Cuban concluded, few

employed these tools in ways that would improve teaching ,more often than not ,he noted, "their use sustained rather than altered existing patterns of teaching practice"(Cuban,etal,inter) while schools are spending a great deal of money on information computer technology, there seems to be only a vague notion of what computer really mean. Can the student who operates a computer well enough to play a game, send e-mail or surf the web be considered computer literate? Will a student who uses computers in school only for running tutorials or an integrated learning system have the skills necessary to survive in our society? Will the ability to do basic word processing be sufficient for O level students entering A level? The research intended to fill some of these gaps while also assessing the different forms of using ICT resources and how they are use in schools of address the dilemmas of society today.

1.2 Statement of the Problem

If information is power, to bring computer technology in urban and sub-urban areas equals bringing power to them by giving them a chance to take advantage of local and foreign market. Already mobile telephones have opened the outside world to most people in a way few expected only a decade ago. So an increasing number of educators are calling for high standard and challenging learning activities for student. New technologies have provided meaningful learning experience for all children, especially those at risk of educational failure. Schools that capitalize on the relationship between technology and education reform have helped student to develop higher order skills and to function effectively in the world beyond the classroom. However, this evolution is not widespread and strengthened to reach large percentage of the population and in schools were its being incorporated there is a scenario were schools are hiking school fees, why they are still lacking the necessary knowledge and skills to implement ICT in teaching and also communication in schools has proven a big problem.

1.3 Purpose of the Study

To analysis the implementation in the use of information and communication technology programs in urban secondary schools.

1.4 Research Objectives

I. To establish the different forms of ICT resources in the selected urban schools?

II. To assess how ICT resources are use in urban secondary schools?

III. To establish the challenges/limitations in implementation of ICT in urban secondary schools.

1.5 Research Questions

I. What are the different forms of ICT resources in the selected schools?

II. How is ICT resources use in urban schools?

III. What are the challenges/limitations in implementation of ICT in urban secondary schools?

1.6 Scope of the Study

The study will be carried out in Makindye Division, of Kampala, targeting both private and government owned urban secondary schools. Makindye Division located in Kampala, Uganda. The study therefore explored the implementation of ICT in this category of schools.

1.7 Significance of the Study

1. The study will draw understanding of the academia on the relevancy of ICT accessibility in urban schools and how ICT literacy can influence teacher performance. It will therefore add value to the academic field.
2. The study will help the policy makers to come up with suitable polices to promote realize both the strengths and weaknesses of programming in secondary schools and more meaningful application of ICT in urban secondary schools and encourage training in computer.
3. The study will act as a stimulant for school's administrators to lay strategies for improvement on ICT resources facilities and infrastructure.

CHARPTER TWO
LITERATURE REVIEW

2.0 Introduction

The literature review focused in this section looks at the different views about the different resources of ICT in place: use of ICT in teaching and learning and the common challenges or limitations for ICT integration in teaching and learning in urban secondary schools.

2.1 Theoretical review

Many theoretical efforts have been made to analyze the impact of ICT on in education in various settings. Recent approaches to evaluating ICT in education often only focus on a few aspects such as input, output and outcome/impact. The use of indicators can help assess how the input (e.g. monetary, infrastructure, resources) relates to the impact. However, an evaluation must consider different stages in the implementation process and analyses changes in the culture of the school system – at the micro level (student) as well as at the (schools) and macro (national) levels. At national and institutional levels, educational policies and regulations have been established to support the educational use of ICT. In school and classroom settings, teachers and school administrators are attempting to find the best ways to harness ICT technology to support their teaching and students' success. However, accomplishments that are convincingly the result of the direct causal impact of ICT use are not always easily identifiable (Kang et al., 2008).

The theory propounded by David Garson says that older technologies such as films and overhead projectors aimed to instruct whereas newer technologies especially virtual universities have more of an economic goal of increasing the number of O level students while lowering the costs. Therefore, the issues of the quality of the education provided and of academic authenticity are raised. (Garson, 2000). Teacher's professional growth supports the idea that ICT in teaching education and training is an important factor in schools, for teaching job effectiveness and development. This is so because student's education and training is generally considered to be essential for school effectiveness and improvement (larose et al.1999). It was argued

(creemers,1994) that upper secondary who are bent on improving their competence are likely to contribute, directly or indirectly to the growth of student's achievement.

2.1.1Different forms of ICT School computers coverage in global context.

Millions of people use computers for education and information. Many of the educational software programs are used by the children and adults in schools. Edutainment programs specified geared towards home markets combine education with entertainment so they can compete with televisions, medical reference and electric games.

Encyclopedia, dictionaries, at least, almanacs, the electronics as low cost, and vision offer with multimedia capability. More up-to-the minute's information is available from the internet connections also provided E-mail, discussion groups, and other communication option for home users. There are many examples, like word processors help many of us to become writers, graphics software brings out the artists among us and desktop publishing systems put the power of the press in more hands.

Computer technology has opened up prospects for a form for learning that can be customized to students. Using IT tools, such as multimedia, E-mail, presentation, handouts, commercial courseware, CD-ROM materials, computer simulations, computer lab/classroom, www-based resources, teaching can be organized so that the students can themselves control the learning process. Educational courses, based on the learner's skills, are designed in new and more effective ways. A pool of information is globally available that enables teaching with real world situations, for example, a communication professor who teaches advertising require students to locate various advertising agencies on the internet. The presentations are then evaluated according to the various principles taught in the course. Furthermore, collaboration activities among students can be facilitated using networked computer labs. Online discussion forms allow students to discuss topics specified by the instructor. While visual tools enable students better understand concepts.

The types of computer that have been used in education, range from the older, the more traditional such as slide projector, the overhead projector, the television monitor, the video cassette, the personal computer, and the lasts being the internet and virtual learning. No doubt that these are replacing or adding trading teaching tasks. These can be categorized into the use of

business software such as spreadsheets and word in education, as well as communication (e-mail, online lecturers) and research such as online libraries and search sites, and finally computer assisted learning software. "in these examples, technology is used to do something (and presumably better) than the way in which it was done previously". (Tissue,1997).

2.1.2 ICT Resources and Skills in Teaching in Class

The concepts and relationship of student's outcomes is very stimulating. In computer literacy it is theoretically unclear and changing in that the definition of the concept is more or less precise depending on whether it occurs at the levels. A working definition of operational abilities, psychomotor-affective levels. According to Prestride, (2012) computer aided teaching is the most appropriate skill required of a teacher, unfortunately, it is the least possessed by many. This may be because it is barely being part of their training course. According to Andoh, (2012) training should be directed to "using ICT to teach" rather than "learning to use ICT" Prestride, (2012) outlined some of ICT packages required of a secondary school teacher as data processing, word processing, use of internet, use of spreadsheet, use of presentation software like PowerPoint and e-mail. These ICT packages are important to teachers because they assist in creating lesson plans, analyzing and setting students' tests, acquiring new knowledge and presenting lesson in a clear way among others. To acquire these skills, teacher educators should prepare teachers properly, as Higgins, & Moseley, (2011) noted, teachers who used ICT resources in classroom might have experimented or observed their own teachers use ICT resources during formative days in initial teachers training institutions.

A working definition of computer literacy will be based on a few competencies or ability which might characterize that students know and how to use computer instructional materials and impart learned skills to trainee's ability to conceptualize and use learned skills to manipulate a computer tool. Thus, it goes beyond that to include the ability to prepare and use, the selection of appropriate and operation of the computer materials and to identify and affect efficiently on upper class student specific purposes in order to build knowledge, develop critical and creative thinking in students. Thus, teacher education and training is a means for the professional updating, which deals with all developmental functions, directed at the maintenance and enhancement of one's professional competence and literacy.

Teacher professional growths support the idea that the use of ICT in teacher education and training is an important factor in secondary schools, for teaching job effectiveness and

development. This is so because secondary education and training is generally considered to be essential for school's effectiveness and improvement (larose et al.,1999). To make these work students need effective techniques, tools and assistance that can help them develop computer based projects and activities especially designed to raise the level of teaching in required subjects to be able to improve students' learning and academic achievement (Aduwa-Ogiegbaen and iyamu, 2005). The inclusion of computer materials in urban secondary schools is in its self-valuable for teaching for adequate and effective teaching involvement.

Larose et al.(1999) argued that regardless of the quality of computer equipment available to O level and A level in school environment and independently of the quantities of courses which they have taken during their undergraduate studies, the level of transfer of acquired competencies and learning to practice is very week. However, the major impact of education on the educated remains at the level of the "private" use of these technologies and not in their integration into daily teaching practice. Larose and colleges further pointed out that many of the educated, no matter the level of education, have minimal computer literacy but do not use it in their pedagogy because of the fear that the rapidity of obsolesce of the hardware and of the software will make their task more complex and interminable.

The two most common benefits cited for using computer technology in education are that they improve learning, and that they improve the cost effectiveness of education. This in the following effectiveness, Greater ways; improved learning effectiveness, Greater use of information for full-time O level and A level student and researcher, Graduate need computer and computer technology skills to be competitive in the job market, increased productivity, for example, more efficient administration, computer grading of home sharing of resources and courseware, technology makes education learner centric, individualized. (Medenhall, 2000). Greater use of education via distance learning, for example, enables new markets and consolidates educational institutions.

2.1.3 Computers and Teacher in Classroom

Physical accessibility ensures that the resources are located in a physically accessible facility which include a few items that are especially critical for assuring use of IT- equipped labs and classrooms; ability of the users to perceive the output and operate the controls. Well established techniques for developing web content that is accessible to all users, availability of support and

training opportunities. There are well established techniques for developing web content, and blogs that is accessible to all users. However, these techniques must be practiced by web authors and developers. Typically for educational entities this requires ongoing effort to monitor web accessibility and to educate authors and developers regarding web accessibility.

2.1.4 Availability of Computer in urban Schools

Discussions of the status of information and communications technology in Uganda schools over the years is often had a character of attempts to convince others that computers have been successful or to argue that it attempts to convince others that computer has been successful or to argue that it has failed. just as the opponents of the use of computer soften overstate the irrelevance, waste, or harm from the use of computers often overstate the positive consequences that have accrued form the use of computers and other technologies in education. Many of the highly dedicated and capable people who work with computers in schools know-often better than the critics-where we have fallen short in the effort to derive the full measures of benefit to the secondary students in use of ICT. It is up to those who know what is possible in use of computers in our schools to be clear-eyed and frank in their assessment of the current situation and compromising in the expression of what needs to be done to make the possible a reality.

If computers are to play a role in the creation of a new generation of in Uganda schools, structural limitations must be met. This requires action by the school heads, because these matter of policy that transcends individual classrooms.

2.1.5 ICT accessibility and Relationships with the Social-Economic Environment

Although, computer is not remedy for addressing all the social and economic problems facing Ugandans, they clearly have had a positive effect in society. Judging from the success of the project, wide spread demand exists for use of information and knowledge resources throughout Uganda. Whether they are using the internet to get information about price indexes for crops, or for distance learning. Although it is too early to determine the long term benefits/consequences of computers deployments in less developed regions of the country, it is obvious, from a social perspective that these and other computers focused development projects can help to cultivate and nurture the un-tapped human potentials of all segments of society. Uganda project for IT and information resources should offer more modern information resources for innovative model by

facilitating a cross cultural dialogue within and outside of Uganda, these initiatives if properly funded and managed, can help usher in a new era of development for this developing country.

2.2 limitations in implementation of ICT in Urban Schools

Computers are much criticizes as having a negative impact on teaching, learning and education as a whole. As is the case of almost everything, technology brings along certain negative impacts. These are viewed, by technology enthusiasts, as minor compared to the great benefits. Nevertheless, others sound alarm bells and insist that IT is harming education more than benefiting it. This cost can be divided into two (2) main types; the quantitative, measure by time, money and space the quantitative related to the quality of education. The other limitation of computers in schools is associated with monetary cost in form of capital cost of computer and network hardware and software, installation cost, including classroom and laboratory renovation, hardware and software upgrades support personnel and facilities for training and support of users. it is important to note that the cost of training, maintenance and support are 10 to 20 times the initial price of the computer.

Uganda being an underdeveloped country schools in using computer are faced with more limitations like space cost and time. Limited space converted to computer lab takes the place of classroom or laboratory space. While classrooms or laboratories that add computers or space for computers can accommodate fewer O level students and yet it cost more time and money to keep A level student increases instructor time to remain knowledgeable of advances in information computer technology. Teaching technology in classrooms and laboratories is replacing the teaching of science and consequently, spending less time studying science whether at home or in school. (Tissue, 1997).

Fundamentally, the slow use of basic computers equipment's, low internet connectivity and computers, and the inadequacies, projectors, globes, chart maps, bulletin boards, plus programmed materials, information retrieval systems, and instructional television in teacher education programs are barrier to the effective and professional development of upper classes in schools in many developing countries (Oloube,2006).therefore ,administrators and trainers needs to make educational technology an integral part of teaching to provide a clear demonstration of how the use of instructional technology tools can address the personal and general concerns of teaching in Uganda.

Nonetheless, in recent times the integration of information and communication technologies in university teaching and particularly in teacher training programs has been the topic of much debate (larose et ai.,), because educational systems around the world are under increased pressure to use the new information and communication technologies (computers) to teach high school students knowledge and skills they need in 21st century. Teacher education institutions are faced with the limitations of preparing a new generation of student teacher to effectively use the new learning tools in their teaching practice (UNESCO, 2002).

Another study by Ayere, Odera &Agak (2010) on E-learning in secondary Schools in Uganda, reported that a number of teachers in schools had not received any training in ICT use during their formative years at teacher training institutions before joining the profession. However, to successfully implement ICT in schools depends strongly on teachers' training on the technology. Drent, &Meelissen, (2008) observed that the level and quality of teachers training has a positive influence on how effective ICT is implemented and used in classroom. Therefore, it is reasonable that we should expect educational technology to be developed with similar objectives. That is educational technology to be developed with similar objective. That is educational technology should influence educational outcomes and costs. Because if a teacher selects the most appropriate educational technology, that means pupil learning can be optimized, this means an increase in the value of the outcome.

The above are all very legitimate costs of computers, yet the main critics of computers in education is that it lowers the quality of the education provided. This issue is raised mainly with relation to newer technologies especially virtual teaching. This should focus that high school's students are able to become webmasters, leaving their depth of subject matter and dominate specific knowledge and focusing on building the virtual course on the internet. While other students chose online courses for their education. All this puts a computer between the students and the instructor and makes dialog more effective. It encourages active learning and shorts spans of attention. So learning how to access information is not the same as understanding that information.

CHAPTER THREE

METHODOLOGY

3.0 Introduction

The chapter elaborate on the general procedure for conducting the research .it discusses the research designs, study population, study area, Sample size and sampling Techniques, Data collection instruments and techniques, Data collection procedure, Data analysis and presentation, ethical consideration as well as the limitations of the research.

3.1 Research Design

According to Mugenda, (2003) research methodology is plan of action, design, strategy or process that researcher choose and use in order to get the desired outcomes. The study used both qualitative and quantitative methods of data collection. Sekran (2007) observed that descriptive survey research is intended to produce statistical information about aspects of education that interest policy makers and educators. It is a method of collecting information by administering a questionnaire to a sample of individuals. Descriptive surveys are designed to obtain information about the current status of a phenomenon or to answer questions like where, what, how, why, when, and who. It use both a descriptive and analytical study, this enabled the researcher to collect as much information as possible in reference to the research area and objectives of study.

3.2 Study area

The study was area carried out in 5 selected school in Makindye division in Kampala, which is a densely populated slum area located in Kansanga, Nabutiti. It was selected due to the target population of this study on number of high schools in the study selected area, both government and private owned.

3.3 Study population

According to Orodho, (2008) specifying the population that is targeted for study is important as it helps researcher to make decisions on sampling and resources to use. The study population included school administrators, teachers, students of these respective schools, and from the selected schools. school management committee members two from each selected policy school picked using purposive sampling technique this is because each member are considered to have the require information for the study and also they are in a position to influence the budgeting in

the schools; using the purposive sampling technique because they expect to have information related to the education policy in schools on computer usage .Both female and male respondents will be employed in the study to avail positive gender bias in the study. The study also involved both government and privately owned schools to ensure that the study was representative.

3.4 Sample size and sampling Techniques

Kombo, (2006) argue that researchers selects a sample due to various factors that may hinder studying the whole population, while Sekran, (2007) observes that sampling procedures are strategies or procedures that are used to select a sample from a target population. The samplings one hundred employed to ensure the validity and reliability of the research findings.

According to Amin (2005) he defined systematic sampling as a techniques of selecting participant every after a given interval. A systematic random sampling is employed in the selection of total students were out of sixty students, 20 respondents was selected to represent the rest of the students. However, care was taken to ensure that there is a fair representation between the male and female students. Systematic random sample technique is also applied during the selection of the respondents from within the members of the school, Purposive sampling is used to the Head teacher, because, this categories of respondents was considered to have information and aware of the requirement of given school's facilitation grants at play in given areas of their mandate, they are also directly linked to education policy on use of computer in schools.

Table 3.1 Sample and Sampling technique respondent

Respondent	Total population	Sample size	Sampling Technique
Head teachers	10	4	Purposive sampling
Students	60	20	Systematic random sampling
Teachers	30	10	Systematic random sampling
	100	34	

Source; Primary data

3.5Data collection instruments and techniques

A number of research instruments and techniques were used in the collection of data. The research used both the primary data collection and the secondary data collection and instruments techniques, the most important research instruments in this include; semi structure questionnaires, observation techniques, the questionnaires, According to Kombo, (2006), questionnaires are widely used to obtain information about current conditions and practices and to make inquiries concerning attitudes and opinions quickly and in the precise form.

Orodho, (2008) noted that questionnaires provide a cheap means of collecting data from large number of population. The student results records, the students in the schools; the observation check lists; and the interview guides.

3.6Data collection procedures

The researcher acquired a research authorization from the permit from the college of education open distance and E-learning. Permission was sought from the head teachers of the schools from where data will be collected. The researcher collected primary data using questionnaires, which were directly administered to the three categories of the respondents. Appointment was sought from the head teachers, teachers and the students on when to collect completed questionnaires.

3.7Validity and Reliability

Validity is the degree to which a test measures what is supposed to measure (Mugenda, 2003). Validity was ensured through judgment of experts in ICT, teaching, learning and research techniques. According to Orodho (2008), researchers generally determine validity by asking a series of questions, and will often look for the answers in the research of others. Reliability is the degree to which a test consistently measure whatever it measures (Mugenda, 2003). Test and re-test method was used during pilot study to establish reliability of the instruments.

3.8Data analysis and presentation

Orodho, (2008) observed that data analysis involves some manipulations of data collected through use of statistical tools in order to compute a number or a percentage. Data is analyzed using largely descriptive qualitative methods and simple quantitative methods. Analysis and presentation of data is in form of frequency tables, bar charts, pie-charts and pyramids. The classification, coding and sorting of data were done both manually and by use of simple computer packages.

3.9 Ethical Consideration of the study

Since the researcher attaches great significance to the uprightness of the study, ethical issues rated highly from data collection, analysis, reporting and presentation of the research findings. Great attention is given to the different categories of the respondents to ensure that none was offend both during and after the entire process of study. To fellow researchers and academicians, the researcher ensured that, to the best of his ability, he complies with the requirements of a formal academic research, while carefully and most consistently following the guideline sets by the awarding institution of learning.

3.10 Limitations to the study

The main limitation to the study arose as a result of the various categories of respondent's with-holding and falsifying information. This however was over come through computer adherence to the ethical norms expected of an academic research, with an aim of making respondents building confidence in the researcher, hence making them freely release the anticipated information.

CHAPTER FOUR

DATA PRESENTATION, ANALYSIS AND INTERPRETATION

4.0 Introduction

This section presents data analysis and interpretation of research findings. Mugenda (2003) defines data analysis as categorizing, ordering, manipulating and summarizing of data to obtain answers to research questions with its purpose being to reduce data to intelligible and interpretable form so that relation of research problems can be tasted. Research findings are presented in tables supplemented with some discussions.

In line with this objective the data for this research was presented and analyses on the basis of different forms of ICT resources in the selected schools, to assess how ICT resources are use in urban secondary schools and the limitations in implementation of ICT in teaching and learning in urban secondary schools.

Below are the presentations of the data analysis procedures and findings arrived at from the questionnaire administered to the respondents who included Head teacher, ICT teachers and students? The findings of the study were presented in tables and figures based on the study objectives.

4.1 Questionnaire completion rates

Completion rate is the proportion of the sample that participated as intended in all the research procedures. In this study, some of the questionnaires were filled and returned while others were not return.

Table 4.1.1 Questionnaire completion rates

Category	**Distributed Questionnaires'**	**Returned Questionnaires**	**Percentages (%)**
Head Teacher	4	2	10
ICT Teacher	10	6	30
Students	20	12	60
Total	34	20	100

Source; Primary data

4.2 Different forms of ICT Resource in Schools

Before teachers can start integrating ICT in their teaching and learning of students, the ICTs resources/ tools must first be available at schools.

Table 4. 2: Different forms of ICT Resource available in Schools

	Agree	Disagree	Mean
How many computers are there in the laboratory's	258	0	12.9
Qualified teachers ready for teaching ICT	17	1	0.9
Multimedia resources for teaching ICT: Projectors,	0	0	0
Laptop/desktop computer	10	0	0.5
Applications	12	0	0.6
And Internet	4	0	0.9
Dose the school provide internet	5	13	0.9
Does your school have Website	8	10	0.9

Source; Primary data

Findings from table 4.2 above showed that 12.5 of the respondents agreed that computers are not enough in their schools. Also zero of the respondents did not have projectors at their schools. The low level of availability of projectors explains why they had rarely or never used a projector. Furthermore, the above table shows that 4 out of respondents had no access to the Internet. This correlates well with the findings, which shows that 12 of the respondents have rarely or never used internet at school. In an era where schools and teachers should communicate electronically, the absence of Internet poses a serious challenge in implementing ICT in urban schools. With regard to different form of ICT resources, it shows that 10 of the respondents agreed that their schools had at least five computers available for them to use in their schools, while the rest 2 disagree that they did not have any computers in their school.

However, 17 respondent agreed to have had qualified ICT teachers, while 1 disagree to not have had. Respondents' perceptions were consistent with findings. Prestride, (2012) who concluded that ICT skills and competences most appropriate for teachers are data processing, word processing, use of internet, use of spreadsheet, use of presentation software like PowerPoint and

e-mail among others applications in their school.8 respondents reported that the school has a website, while 10 respondents disagreed to have had website. However judging from the researcher observation, none of schools had a website.

4.3 HOW ARE ICT USED IN URBAN SECONDARY SCHOOLS

The teacher and students is accessed base on the use of information and communication technology in teaching, which may make teaching and learning more interesting.

Table 4.3.1 How Are ICT used in Urban Secondary Schools

Teachers use computers to:	**H/Teacher**	**ICT/Teacher**	**Students**
Does your school have computer laboratory	**55%**	**30%**	**40%**
How many computer lessons per week	**48%**	**70%**	**80%**
Are computers available to both Teachers and students in your school	**45%**	**30%**	**30%**
Are teachers encouraged to teach using computer	**60%**	**25%**	**20%**
How is computer lesson accessed in your school	Practical 0%	Theoretical **20%**	Both 12%

Source; Primary data

According to all the head teacher 55% believe to have computer labs, while 30%ICT teacher and 40% of student. 70% of teachers. Students 80% and 45% of head teachers, stated the number of computer lesson per week.30% teachers, 30% students and 45% head teachers reported that computers are available to both teachers and students.60% of head/teacher, 25% of Teachers and

20%of students that teacher are encourage to teach content using computer and 0% practical from head teacher, 20% of theory from teachers and 12% uses both practical's and theory to access computer lessons.

The statistics above show that 55% head teachers in the schools believed to have had computer labs compare to the students and the teacher whom actually do not. Also the statistics show that 80% students stated the number of computer lesson per week compare to the head teachers and teachers whom actually do not. The statistics also show that 60% head teachers believe that teachers use computers to teach content when 25% of teachers and 20% students they actually do not. It also shows that 45% of head teacher believed to have reported that computers are available to both teachers and students, while 30%teachers and 30%students actually do not believe. And 20% of teachers believed to use theory while 12%students believed to have used practical's and theory while 0%head teacher do not.

4.4 CHALLENGES OF ICT IN URBAN SECONDARY SCHOOLS

The researcher was interested in finding out the challenges or limitation facing implementation of ICT in urban secondary schools.

Table 4.4 .1 challenges faced in using computers in urban secondary schools

CHALLENGES	H/teacher	ICT/Teacher	Students
Students are not allow to use the computer	**0%**	**0%**	**5%**
Limited computers compare to the number of students	**10%**	**30%**	**25%**
Absence of computer resources	**0%**	**10%**	**10%**
Poor quality of computer	**0%**	**5%**	**10%**
Lack of skilled ICT Teacher	**10%**	**5%**	**5%**
Limited Time Allocated per class	**10%**	**10%**	**20%**
Absence Electric power for ICT use	**10%**	**5%**	**0%**
Lack Installation of computer laboratory's ready for ICT use	**10%**	**10%**	**20%**
Total	**50%**	**75%**	**95%**

Source; Primary data

According to the table, the participant in this study highlighted their challenges in using computers. The basic and pressing challenge faced by the various schools sampled was Limited computers compare to the number of students offering the subject among others challenges, which was not catered for in the school compare to other subject, like physis , chemistry lab, biology laboratory's, among others which is cared for. This is a big limitation to the teaching of computer in urban secondary schools? 30% teacher cited Limited computers compare to the

number of students is not equal to the student's. Meaning the population exceeded the computers available in the school.

Computer lessons are limited due to the time and study periods allocated per lesson as a result of that, 30%of teachers are challenged, whereby adequate and ample time wasn't given to achieve the objective of the day through enhancing the student in skill achievement and competency for the student to be able to use computers efficient and effectively. 20% student's responses as per the table above site that the Lack Installation of computer labs ready for ICT use as one of the limitation to the use of computers in urban secondary schools. Lack of computer laboratories, infrastructure, applications, connection to internet and trained teachers. It is believed that computer does not need a laboratory's of its own before is taught. Whereas it is a limitation in that, when the time allocated to per subject expires, both teacher and students are tired and ready to go home.

However, 10% teacher and student of the respondents saw that absence of computer resources Or facilities are not proportional to the number of students and teachers. Resources like projectors, computers, application, printer, and internet. Also spread sheet software can be used to automatically calculate attendance and the grades of the students. A class website keeps channels of communication open between the teachers, parents and students this limits the number of students who offer computer studies. 10% of head teacher sited from above table that Lack of skilled ICT Teacher ready for teaching ICT is also a limitation .because teacher whom presumed to have acquired skills which will help him inculcate such competency and skills to the learner now figuring how to use the computer resources. These discourage the learner and completely loss interest, which in turn impact on the teaching and learning of computers the selected schools.

CHARPTER FIVE

SUMMARY OF FINDINGS, CONCLUSIONS AND RECOMMENDATIONS

5.0 Introduction

The chapter focuses on conclusion and recommendation as was derived from the research findings.

5.1 Summary of Findings

The researcher s summaries the respondents' views on the different forms of ICT resources, how ICT resources are been used and the challenges in implementing ICT programs in their schools.

5.1.1 Different forms of ICT resources

In summary, the findings shows that the selected urban schools did not have enough computers in their laboratories and qualified ICT teacher is wanting given that only a few had trained in computer usage due to the fact that teachers did not rely on computers in the learning process, however the number of this teacher was not enough to teach computer lessons in these schools. Multimedia resources such as data projectors among others are lacking. According to Vangie Beal, an application program is a computer program designed to perform a group of coordinated functions tasks, or activities for the benefit of the user. Such ICT resources,(applications packages) can be word processor, spreadsheet, accounting application, web browser, a media player, PowerPoint among others which are not enough to carter for teaching ICT in these schools.

5.1.2 How are ICT used in Urban Secondary Schools?

In summary, the finding shows that the computer laboratories are not spacious enough to accommodate many computers so as to effectively teach computer lessons in these schools. Perhaps, the biggest problem is that most respondents point out that computer lesson is assessed theoretically without using the computer resources. According to Lawrence & Veena (2013), specific fundamental skills include basic actions such as: managing electronic files, using computerized databases and spreadsheets, sending and receiving e-mail messages, and creating documents with graphics are must do-able skills and competency. However, these skills are not been assessed. The students cannot show their competency and skill on the use of computers due to the resources are not available to the students for practical's use. Student should be allow to

show case their skill from what they learnt through practical's (hands on) on computer and adequate training opportunities for all ICT teachers must be prioritized by the Department of Education to enable teachers to get to grips with new technologies which can impact and enhance teaching and learning.

5.1.3 Challenges of ICT in Urban Secondary Schools

In summary, when respondents were asked their view about the challenges faced in use of ICT in their schools. The respondents reported that such challenges were unlimited but the one that is important depends on the school needs. According to the findings, the key informants, Head teacher were of the view that the challenges/limitation in urban secondary schools was 50%. While ICT teachers were of the view that the challenges is 75% compare to the students reported to have been 95%. These are the summary of the respondents' views on the challenges in implementing ICT in their schools.

5.2 CONCLUSIONS

As indicated at the beginning of this paper, the objective of this research was to analysis the implementation of ICT programs in urban schools. Basing the analysis of this findings ,the following challenges are encounter by the selected school: Students are not allow to us the computer, Limited computers compare to the number of students, inadequate computer resources, Poor quality of computer use in teaching, Lack of skilled ICT Teacher, limited time allocated per class , Absence Electric power for ICT use in schools, Lack Installation of computer labs ready for ICT use, schools lack adequate funds to adopt ICT use for teaching and computer laboratory's are not in place.

However, electric power has been availed and the schools have appropriate classrooms in readiness for the ICT use such as desktop computer, Application, internet implementation. Lack of these resources makes it difficult for the implementation of ICT to take place.

Also, the study findings revealed that teacher training on ICT is essential if ICT is to be use for teaching and learning in urban secondary school. It was clear that training levels of teachers in the use of computers in urban secondary schools are wanting given that only a few had trained in computer usage due to the fact that teachers did not rely on computers in the learning process. Basing on the findings, the ICT policies in school have not prioritized on availability of ICT

services and its accessibility, the policies are not clear to everyone and they do not advocates for compliance with health and safety requirements for both teachers and students, hence it is a major hindrance to the implementation of ICT programs in urban secondary schools.

The role of computer in learning cannot be denied, and the ability to use it is becoming a required skill in the workforce. However, ICT remains a tool that must be used properly in an appropriate learning environment; which does not by any means replace teaching. . In view of the above, computer lessons cannot be effectively and efficiently use to teach ICT in urban secondary schools if measures are not been put in place to curb with such challenges and limitations.

5.3 RECOMMENDATION

The respondents when asked their views on the solutions to the limitation/challenges facing ICT in their various schools, they all reported that, government should help provide computers in Schools, and internet for use, Buying new computers and provision of enough computers for use, More practical should be courage and, establish Solar power in case of power failure.

Urban schools must focus on making available sufficient energy sources to meet the needs of the school in supporting the ICT use in urban schools. Schools should also establish public private partnership so as to avail funds to implement the ICT use, build computer laboratory's in readiness for the ICT use. Computer Curriculum should include multimedia use, like computers, internet, print communication, online surfing and teleconference among others to improve student's research skills, communication, practical skills and competency.

According to Lawrence & Veena (2013), ICT specific fundamental skills include basic actions such as: managing electronic files, using computerized databases and spreadsheets, sending and receiving e-mail messages, and creating documents with graphics. However, these skills are only the prerequisites for more advanced skills, such as accessing online resources, creating desktop, publishing documents, developing multimedia presentations, selecting and customizing instructional software to fit students' needs, streamlining record-keeping and other administrative procedures with electronic tools, and observing the correct protocols in sharing intellectual property . Since teachers are central in the implementation of ICT in urban secondary schools, there is need to provide them with necessary knowledge, skills and understanding to successfully integrate ICT into everyday educational practices. The Ministry of Education should develop a

policy to guide the use of computer in public and private schools, so as to heighten ICT knowledge and competence in all schools in the country. An implementation and budget plan, procurement and connectivity strategies, and a policy management structure should be included in the policy. Funding will come from a variety of sources including the national education budget, the donor community, and the private sector. Teacher training institutions (universities and other Teacher Training Colleges) should include short computer courses so as to further train the trainer and evaluate how teacher trainees could be prepared to be computer literate so as to improve their effectiveness and efficiency.

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APPENDIX I

QUESTIONNAIRE

QUESTIONNAIRE GUIDE FOR STUDENTS

Dear Respondent,

I am a student of Kampala international university carrying out a research on the Analysis of Implementation of information and Computer Technology programs in Urban Secondary Schools. A case of selected schools in Makindye division. You are kindly requested to assist me in answering the questions below whose data provided will be confidential. The results of this research will in no way reflect you as an individual.

SECTION A

Background Information

Personal Details. Tick where applicable.

Gender: Male ☐ Female ☐

Age: 10-14 ☐ 14-19 ☐

19-24 ☐ 24 and above ☐

1. Are computer lesson taught by qualified teachers in the school?

   Agree ☐ Disagree ☐

2. Are teachers encouraged to teach using computer?

   Agree ☐ Disagree ☐

3. Are computers available in your schools?

   Agree ☐ Disagree ☐

4. Number of computers recourses in school? ☐

5. Number of qualified computer Teacher? ☐

6. What is the number of computer lesson per week in this school? ☐

7. Does this school have computer labs? ☐

Agree ☐ Disagree ☐

8. Are computers available to teachers and students in your schools?

Agree ☐ Disagree ☐

9. Do students use computers for practicals in this school?

Agree ☐ Disagree ☐ ☐

10. Numbers of qualified ICT teachers in school?

SECTION B

DIFFERENT FORMS OF ICT RESOURCES

11. How many computers are there in the lab? ☐

12. Dose the school provide internet?

    Agree ☐ Disagree

13. Does your school have Website?

    Agree ☐ Disagree ☐

14. Put a tick on ICT available resources in the computer lab?

    Laptop/desktop, internet, projector, applications like M.s Word, Excel, Power point.

SECTION C

HOW ARE ICT USED IN URBAN SECONDARY SCHOOLS

15. How many computer lessons per week?

16. If given computer, I work independently?

    Agree ☐ Disagree ☐

17. How is computer lesson taught in your school?

    Practically ☐ Theoretically ☐ Practically and Theoretically ☐

SECTION D

CHALLENGES OF ICT AND SOLUTION

18. What are the challenges facing computer lesson in your schools?

.....

.....

19. Suggest some solutions to the challenges?

.....

.....

RESEARCHERS OBSERVATION CHECKLIST

The researcher employed the use of observation check list to observed what's on ground in the schools using is human senses of seeing, touching among others.

- Are there enough computers
- Are computer spacious enough
- The type of computer used
- Is there Computer laboratory's
- Is there Projectors
- Is there Internet
- Is there Website
- Number of lesson per week
- Numbers of computer in laboratory's

QUESTIONNAIRE GUIDE FOR HEAD TEACHER, ICT TEACHER

Dear Respondent,

I am a student of Kampala international university carrying out a research on the Analysis of Implementation of information and Computer Technology programs in Urban Secondary Schools. A case of selected schools in Makindye division. You are kindly requested to assist me in answering the questions below whose data provided will be confidential. The results of this research will in no way reflect you as an individual.

SECTION A

Background Information

Personal Details. Tick where applicable.

Gender: Male ☐ Female ☐

Age: 18-25 ☐ 25-33 ☐ 33-40 ☐ 40 and above ☐

1. Are computer lesson taught by qualified teachers in the school?
   Agree ☐ Disagree ☐

2. Are teachers encouraged to teach using computer?
   Agree ☐ Disagree ☐

3. Are computers available in your schools?
   Agree ☐ Disagree ☐

4. Number of computers recourses in school? ☐

5. Number of qualified computer Teacher? ☐

6. What is the number of computer lesson per week in this school? ☐

7. Does this school have computer labs?

   Agree ☐ Disagree ☐

8. Are computers available to teachers and students in your schools?

   Agree ☐ Disagree ☐

9. Do students use computers for practical's in this school?

   Agree ☐ Disagree ☐

10. Numbers of qualified ICT teachers in school? ☐

SECTION B

DIFFERENT FORMS OF ICT RESOURCES

10. How many computers are there in the lab?

11. Dose the school provide internet?

Agree ☐ Disagree ☐

12. Does your school have Website?

Agree ☐ Disagree ☐

13. Put a tick on ICT available resources in the computer lab?

Laptop/desktop, internet, projector, applications like M.s Word, Excel, Power point.

SECTION C

HOW ARE ICT USED IN URBAN SECONDARY SCHOOLS

14. How many computer lessons per week? ☐

15. If given computer, I work independently?

Agree ☐ Disagree ☐

16. How is computer lesson taught in your school?

Practically ☐ Theoretically ☐ Practically and Theoretically ☐