

**THE IMPACT OF INFORMATION TECHNOLOGY IN
EFFICIENT SCHOOL ADMINISTRATION: A STUDY OF PUBLIC
SECONDARY SCHOOLS IN NAIROBI, KENYA.**

BY

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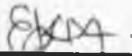
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DECLARATION

This project is my original work and has not been presented for a degree or diploma in any other university.



KABURIA EDWIN MWANGI

This project has been submitted with my approval as university Supervisor.



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DEDICATION

To Shiku

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I would like to take this opportunity to express my unquantifiable thanks to God Almighty for his countless blessings that has enabled me complete this study. My sincere and deep appreciation also goes to my supervisor Dr. Mwanda S.O. for his support, guidance and constructive criticism from the beginning of the study to the end.

My sincere gratitude is also extended to all the Principals in public secondary schools in Nairobi province where the study was undertaken for their genuine co-operation during the data collection. Deep appreciation also goes to Maggie for her computer services.

My very deep and heartfelt appreciation goes to my entire family for their moral support and encouragement throughout this period. I am also grateful to my colleagues at the university for their help in brain storming into ways of enriching this project.

ABSTRACT

The role of a school administrator is goal setting, planning, budgeting, staffing, directing, guiding and counseling, reporting, communication and evaluation (Mwangi, 1989). Administration is an important aspect without which no organization can run smoothly. Unfortunately, with the rapid expansion of schools many administrative problems have come up. These problems appear to be in the major administrative tasks and process. For this reason school administrators are faced with the challenge of embracing the new information technology if these problems are to be addressed to ensure efficient running of the school system.

The objective of the study was to examine the impact of Information Technology (IT) for efficient school administration in such areas as personnel management, instructional leadership, public relation and financial control. To unravel the problem, research questions were formulated in line with the above objective. The literature review dealt with roles of a school administrator, IT and school administration, benefits and hindrances to effective use of IT in school administration, IT policy in education in Kenya and the challenges facing the use of IT in Kenyan secondary school.

Ex-post facto research design was employed. Random sampling was used to select a sample of 35 Principals of public secondary schools in Nairobi who took part in the study. A questionnaire was used as an instrument of data collection. The questionnaires rate of return was 100% since all the questionnaires were returned fully filled.

Data was analyzed and interpreted using statistics tools such as frequencies and percentages. The results of the study established that the impact of IT on various administrative roles in personnel management, instructional leadership, public relation and financial control was favorable. However utilization of IT in some administrative roles for example, decision making, supervision and inspection, timetabling and management of payroll for both teaching and non-teaching staff was inadequate. The study also found that though IT impacted positively in majority of administrative roles training is needed to improve its use.

The study recommended that Teacher training colleges should include in their curriculum courses in computing to enable the teachers who later on take administrative posts to be computer literate. Equally the study recommended areas of further research like a study of training requirement in IT for principals. The results of such a study could be used to generate information on how the impact of IT could be realized in carrying out school administrative roles efficiently.

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LIST OF ABBREVIATIONS

CEPAK	:	Computers in Education Project in Kenya
CD ROM	:	Compact Disc – Random Access Memory
CME	:	Computer Managed Education
EIS	:	Executive Information Office
E-MAIL	:	Electronic Mail
GDSS	:	Group Decision Support System
IDRC	:	International Development Research Center
IS	:	Information System
IT	:	Information Technology
KESI	:	Kenya Education Staff Institute
KSTC	:	Kenya Science Teachers College
KTTC	:	Kenya Technical Teachers College
KU	:	Kenyatta University
MIS	:	Management Information System
TIQET	:	Totally Integrated Quality Education and Training
UNESCO	:	United Nations Educational Scientific Cultural Organization

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1.0 CHAPTER ONE: INTRODUCTION

1.1 Background of the study

Administration is a process by which human beings organize themselves to achieve desired goals and objectives in any social organization. Olembo (1975) describes the practice of administration as the process of directing and controlling the activities and behaviors of human beings in any organization. Mbiti (1974) regards Administration as a formalized system where man controls, supervises, plans and makes decisions about the organization on the basis of the established authority.

Administration is a very important aspect of any organization without which the organization cannot run smoothly. Administration is a crucial function in any organized society. No school or other institution would remain efficient and effective without an organized administrative structure and personnel. Since the school is an important organization within a social system it requires effective administration. This calls for the need to have well trained administrators who are focused and ready to embrace technological advancement that would help them to carry out their roles as school administrators more efficiently.

The success of any school depends on how effective the principal is as an administrator. Writing about the responsibilities of the principal, Mbiti (1974) noted that the Principal is held responsible for so many roles in the school. This makes the principal's task to be quite complex. The major role of the principal as an administrator is to facilitate learning and development of the school.

Okumbe (2001) identifies six major administrative tasks of secondary school administrators as taking care of curriculum and instruction, school plant management, student personnel management, staff personnel management, finance and business management and lastly school community relations, communication and negotiation technique. The school administrator's core purpose of leadership from these tasks is to provide leadership and direction for continuity of the school.

To be able to perform their administrative tasks effectively, school administrators require technical skills in curriculum implementation, acquisition and proper utilization of instructional resources. They require skills in financial management to ensure proper budgeting, bookkeeping, accounting and auditing. Equally they require technical skills for planning school physical facilities. Administrators also require technical skills for general office management, which includes recordkeeping, filing and communication. (Ray and Davis, 1991)

Ray and Davis (1991) state that in order to utilize these skills effectively one major challenge now facing the school administrator is the implementation of computer in his or her school. In order to achieve sustainable economic growth in the present era, one of the ingredients a country needs in the development of its human capital investment is Information Technology (IT). IT is mainly used to refer to a computer technology, interactive video, and telecommunication devices, which allow users to store, retrieve, transmit and receive data. IT has become useful for a nations industrialization and technological advancement. Ray and Davis (1991) noted that the educational system is

trying to keep pace with the impact that computers are making in society. Further they point out that knowledge on information, communication and technology should enable a school administrator to select hardware and software for a particular administrative application, develop a plan for staff and teacher training. Such a knowledge will help administrators in developing a computer facility for either new or existing school site, describe the changes needed to convert a particular school from manual administrative method to a computer based system. The same knowledge on information, communication and technology should help a school administrator compare two or more different systems or programs for the same administrative application and to develop a network plan for a school that describes how computer equipments and database should be shared.

A school system should have goals that indicate how and to what extent computer technology should be applied. These goals fall into two categories, those that relate to school administration and those that define the instructional programs. Administrative goals are designed to support the schools instructional goals (Ray and Davis, 1991).

Halliday (1997) illustrates the administrative uses of microcomputers in schools as being attendance, accounting, registration and scheduling, budgeting, time management, school needs assessment studies, inventory control, discipline problem accounting, newsletters and word processing. All these uses are meant to make administrators roles or tasks more efficient. Equally Ottaro (1990) outlines how various computer packages are being used in schools; word processor is used for

preparing examination papers, production of schedules of work. Graphics programs are used for producing diagrams, bar charts, pie chart and geographical maps.

According to Guttman (2003) since computers are fast, accurate and consistent they are tremendous assets in school administration. Computer software programs are being used in school management to streamline operations and monitor performance and to provide school administrators with accurate and up-to-date information so that their decision can be evidence based. Computer technology also provides critical support in areas such as school mapping, automated payroll systems, management information systems and information gathering analysis and use.

Unfortunately as Buckingham (1977) notes, the major obstacle to integration of computer in schools is the lack of teachers with the knowledge or understanding of computer use in schools administration. This problem is more pronounced in developing countries, though progress is being made in training teachers. Kenya like any other country requires competent Principals who will pioneer technological development.

Kenya Science Teachers College (KSTC), Kenya Technical Teachers College (KTTC) and Kenyatta University (KU) have initiated pre-service and in-service training programmes on computer studies for secondary school administrators. KSTC caters for pre service training while KTTC and KU concentrate on in-service teacher training in computer studies. There is need to train teachers and secondary school administrators in

effective use of information technology as this is an important step in realizing the effect of investment in computer technology (Dooley, 1999).

Although progress is being done in regards to technology use and integration in the secondary school curriculum, computer use in secondary school administration is still at its infancy stage (Aduda, 2000). As a result most teachers and administrators feel quite uncomfortable working with computers. It is against this background that the researcher examined the impact of information technology (IT) in efficient school administration in public secondary schools in Nairobi. The focus was mainly on four major roles of school administrations; Personnel management, instructional leadership, public relation and financial control with a view of improving administrators efficiency in carrying out their roles.

1.2 Statement of the problem.

Education is a complex, multidimensional activity that consumes tremendous human and financial resources. Educational administrators at all levels are faced with a rich variety of technological resources that are designed to improve the education received by students or to make the education enterprise more efficient and productive (Ray, 1991). One major challenge facing the administrators now is the implementation of computer technology in their schools. The by-product of accepting this new technology is an educated populace trained to meet societal needs (Halliday, 1997).

The government of Kenya through its poverty reduction strategy paper (1999) stresses that information technology (IT) is a tool of production and efficiency leading to better transparency in the functioning of administration. To echo the same Ottaro (1990) notes that IT improves administrative efficiency of schools and more so helps administrators to cope with the ever-expanding education system.

Mackay report (1981) also recommended that one of the aims of 8.4.4 system of education in regard to IT was to improve the quality of school administration through the use of appropriate information technology. With regard to educational administration computers are continuously being used in timetabling, personnel management, financial control, instructional management and examination analysis (Makau, 1987).

Research done by Makau (1988) in Nairobi, Kenya shows that underutilization of computers and other technological resources in public secondary schools may be largely contributed to some administrators being resistant to change due to their familiarity with certain administrative styles. Makau (1988) notes that schools are still using the traditional practice where teachers make test scripts and record scores on a subject mark sheet and later transfer the data to master mark-sheet covering all subjects. Continuous assessments scores are aggregated with examination marks, the total score and class position is calculated for each student and then the data in the master mark sheet is copied onto individual report forms. This is a time-consuming process, which causes a lot of panic and confusion at the end of term. The computer can be utilized to

reduce this clerical drudgery work. To be able to make decision on teaching /learning particularly in relation to teacher development and remedial work on weak students a school administrator needs comparative data on performance in various subjects and streams. Computer software such as Excel or SPSS can be used to do analysis of such data.

According to Kenzie (1999) as schools are busy filling classrooms with computers, large percentage of secondary school administrators remain reluctant and skeptical about using computers in their administrative roles of personnel management, Instructional leadership, public relation and financial control. In fact school administrators have been perceived to be more hesitant and less likely to embrace computer technology (Hardy, 1988).

It is for this reason that the researcher undertook the study to determine the impact of IT in efficient school administration among public secondary schools in Nairobi especially in areas of personnel management, instructional leadership, public relation and financial control.

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1.3 Purpose of the study

The purpose of this study was to examine the impact of Information Technology in efficient school administration. The study aimed at determining the impact of information technology in school administration especially when school

administrators are carrying out their duties as; Personnel Managers, Instructional leaders, Public relation officers and Financial controllers.

1.4 Objectives of the study

The following were the objectives of the study

- (i) To examine the impact of IT on school administrators role as personnel managers.
- (ii) To examine the impact of IT on school administrators role as instructional leaders.
- (iii) To examine the impact of IT on administrators role as public relation officers.
- (iv) To examine the impact of IT on school administrators role as financial controllers.

1.5 Significance of the study

Limited research has been carried out to assess the impact of IT in efficient school Administration. The study was significant, as the findings of the study could assist curriculum developers to entrench IT curriculum in teachers training colleges inorder to equip trainees with IT skills that would enable them be efficient in applying the knowledge gained in administrative work. The findings would bring to attention of school administrators and educational planners the resource requirement for the implementation and sustenance of IT curriculum in schools. It may also help and advice

policy makers at national level with respect to organizing or developing new programmes for teacher education in IT.

1.6 Limitations of the study

It was invaluable to have an extensive and a countrywide study involving a representative sample of all public secondary school principals, which would give a clearer picture of IT impact in public secondary school administration. However it was not possible to control the attitudes of the respondents. As Mulusa (1990) states respondents may at times give socially acceptable answers in order to avoid offending the researcher.

In addition the availability of literature in the area of IT in public secondary school administration was inadequate. This was because the study focused on an emergent issue in education, which is still under study in Kenya.

1.7 Delimitations of the study

The research focused exclusively on school administrators mainly the principals. Only public secondary schools in Nairobi province were involved in the study.

1.8 Assumptions of the study

The following assumptions were put into consideration.

- (i) All public secondary schools in Nairobi have computers and that school administrators use them to carry out their administrative roles.

- (ii) Public secondary school administrators have knowledge in computer use and are capable of using computers to carry out their administrative roles.

1.9 DEFINITION OF TERMS

In order to understand the concept of the impact of IT in efficient school administration the following terms and definitions are provided in respect to their meanings in this study.

School administrators: refer to heads of schools. Also commonly known as headmasters/head mistresses/principals.

In- service teachers: Practicing teachers who are currently employed to teach in public secondary schools.

Pre-service: Students in a teacher education preparation program.

Public School: Category of school that is government owned and where the government through the teachers Service Commission (TSC) employs teachers

Information Technology: Refers to skills and concept learnt through and with the computer such as decision making skills, planning and organizing skills, Strategy

determining skills, programming skills and problem solving.

Teacher Education: Refers to all knowledge, skills, attitude and experiences learnt or acquired by the teacher during and or after formal training.

Digital divide: A term used to differentiate between those who are able to access and use information technology and those who are not.

Administrator Characteristics: Refers to teachers' level of education, Professional qualification, Administrative experience, Training level, computer awareness and attitude towards computer use for administrative work.

2.0 CHAPTER TWO: LITERATURE REVIEW

2.1 Introduction

A school administrator is a manager as far as school resources are concerned. Management is the art and the ability to Marshal and utilize available resources to achieve desired results. The resources available to an educational administrator includes staff, finances, material and time. The roles of an administrator in the provision of educational Services includes organizing, planning, directing, controlling, making decisions, communicating and delegating responsibilities. A school administrator has to make an objective evaluation of results achieved (Mwangi, 1989).

Okumbe (2001) states that the role of a school administrator involves being an instructional leader, a personnel manager, a role model, a financial controller, a public relation officer and a disciplinarian. The focus of this study was mainly on roles of a school administrator as an instructional leader, a personnel manager, a financial controller and a public relation officer.

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2.2 Roles of a school administrator

As an Instructional leader a school administrator performs the roles of improving teaching and learning, developing supervisory strategies, maintaining the school system, improving curriculum and library materials, Evaluating students and teachers progress, Time-tabling among others (Okumbe, 2001).

As a public relation officer a school administrator performs the roles of mediating and coordinating school -community relationship. The school administrator/principal also represents the school in activities involving the community for example parent's day, price giving day, sports, festivals and other co-curricular activities. Other role of a principal involves attending various seminars and conferences, writing testimonials of graduating student, recommending staff and subordinate staff to different careers and job opportunities.

As a personnel manager a school administrator carries out the roles of recording right number of teachers, recruiting and appointing, sending reports for teaching staff and non- teaching staff to relevant authorities. Other roles of school administrators involve selection of new students at the beginning of each year, registration and attachment to classrooms, houses and hostels (Okumbe, 2001).

As a financial controller a school administrator carries out various duties which involves preparing monthly and annual financial report to relevant authorities, maintenance of students tuitions fees, accurate budget preparation and forecasting, management of payroll for non-teaching staff and Efficiency allocation of bursary funds (Okumbe, 2001). To carry out these roles efficiently principals need to embrace the use of IT. As noted by Ray and Davis (1991) IT use in secondary schools would ensure an accurate database which can supply the information essential for both the long-term planning and managing the day -today activities of the education services.

2.3 IT and school administration

According to Njine (1989), there are three areas of application of computers in education identified at an international congress organized by UNESCO in 1988 Nairobi, Kenya. These are the use of computer for educational administration, the teaching of informatics in educational institution and the use of computers as a tool of teaching.

With regard to education administration, the congress noted that computers in secondary schools are continuously being used in timetabling, personnel management, financial control, examination administration, curriculum administration among others. It is evident that the use of computers is actually meeting the challenges of the roles of secondary school administration as mentioned earlier. IT is one of the many tools managers/administrators use to cope with change (Laudon, 2002).

To echo the same sentiment Ottaro (1990) states that IT is a vehicle for improving existing curriculum and school management process. A tool which poses the potential for affecting fundamental changes in the perception of and approaches to learning. Ottaro outlines how various computer packages are being used in secondary schools. Word processor is used for preparing examination papers, producing student's handout, teaching notes, memos and circulars and schemes of work. Database is used to produce mark list, class lists, house list, equipment lists and also for lessons preparation. Spreadsheet is used for analysis of examination results, preparing mathematics and physics lessons and production of schemes of work. Graphics can be used for diagrams,

bar charts, pie chart and geographical maps. All these packages are vital in all the four main roles of school administrators.

The simulation games enable principals to make a diagnosis, draw up database, conduct a strategic analysis of different policy options based on local realities and finally carry out a forecasting exercise to assess the impact of different strategies on learning outcomes. The forecasting exercise generally run for over four-days and it enhances data analysis skills and provides participants with a vital setting for simulating the impact of different policies on their school (Guttman, 2003).

Makau (1986) suggested the following four aspects of Computer Managed Education (CME) in secondary schools.

Financial management

If school finances are to be computerized, then the account staff must be trained in the operation and possibilities of the spreadsheet and other commercial software. Such training should take into account what the school wants to produce in a way of accounting documents. Since students and teacher databases are an essential part of financial management, it is necessary for the accounts to be familiar with a database program and have the knowledge of how to transfer data from the database to a spreadsheet and vice-versa.

(a) General school administration

The administration of the school involves the production of many repetitive documents such as school admission instruments, school rules, class and house lists, staff lists,

circulars and notices. Once produced these documents usually require minimal adjustments year to year and are tailor made for the computer. All school secretarial staff should be trained in use of word processor and data base management so as to assist the school administrators in carrying out their roles efficiently.

(b) Production of teaching and learning materials

Traditionally teachers presented school examination papers in hand-written drafts to school secretaries who prepared typed stencils. This process would be greatly speeded if Secretaries mastered the word processor. As observed teachers with knowledge of word processor appreciate the freedom from dependence on school secretarial staff. Teachers should be trained in the use of word processor to the extent of being able to enter data, edit and format their work, print copies and cut stencils.

(c) Management of academic data

The traditional practice in school is for a teacher to mark test scripts and record the scores on a subject mark sheet and later transfer the data to a master mark sheet covering all subjects. Continuous assessment scores are aggregated with examination marks, the total score and class position is calculated for each student and then the data in the master mark sheet is copied onto individual report forms. This is laborious and time-consuming process, which causes a lot of panic and confusion at the end of term. The computer can be utilized to reduce this clerical drudgery. All that is required is for teachers to be trained to enter the marks into a spreadsheet template from which individual reports are printed.

A school administrator needs to have knowledge in IT in order to make effective and efficient decision on teaching/ learning particularly in relation to teacher development and remedial work for weak students. Comparative data on performance in various subjects and streams is vital and this calls for basic training in analysis of measurement data. Training in simple procedures for the production of relevant statistical measures is also important if principals in public secondary schools in Nairobi are to be efficient in carrying out their duties as school administrators.

2.4 Benefits and Hindrances to effective use of IT in school

Administration

It has been an uphill task for the schools as the parents, students together with willing supporters have had to sacrifice from their limited resources in order to buy computers. Some of these computers are intended to help secondary school administrators to perform their duties efficiently. This is in view of the fact that although the government is supportive of computer integration in educational administration, it cannot finance the projects due to economic hardships presently facing the country (M'mayi, 2000).

A research in African countries by Hawkrigde (1990) indicates that installation of hardware is not a problem since it may be done with the help of foreign aid, but due to lack of trained staff and lack of relevant programs computers are underused. Other barriers such as poor infrastructure, financial constraints, technical difficulties, and heavy duties imposed on imported hardware and software are prominent. Makau (1988) states that majority of Kenyans are still ignorant and mystified by the technology. Lack of awareness of technology potential is an important consideration in

any attempt to introduce computers in schools, if these computers are going to have a positive effect in the way school administration roles are carried out.

Other barriers include: Lack of policy over computer use in school management, problems in procuring and maintaining equipment and teacher attitude towards the technology (Makau, IDRC). The Makau report also cites the following reasons as to why teachers/principals do not use computers to produce teaching - learning materials: Lack of time, poor typing skills, frustration due to loss of data, shortage of paper in school, computer maintenance too difficult/ complicated and involves extra work among others.

Makau (1988) states that the factor of cost, size and complexity has an inhibiting effect. These effects are now being overcome through miniaturization, the reduction of production cost, cheaper back up and greater flexibility. The availability of flexible software and courseware creates the potential for transformation in school administration, teaching and learning and level of educational efficiency far in excess of what schools have hitherto achieved.

Software technology has enabled computers to communicate with each other. This is an advantage since IT is now being applied to greatly improve access to both formal and continuing life long education by spreading benefits of learning resources, cheaply and efficiently by over large geographical space (Digital economy 2000) in what is known as Tele -education and e-learning. Virtual research groups-composed of interconnected

specialists in different parts of the world allow databases to be shared, conferences to be organized, papers to be circulated and discussed and collaborative research and reporting to be undertaken. School administrators in Nairobi, Kenya can also take advantage of these benefits of IT to improve their administrative skills.

According to Halliday (1997) the introduction of modern technology ensures that the decentralization of the education service can be effective since the principal can notify changes in staff deployment, qualifications and vacancies as soon as they occur. As a result action can be taken without delay to fill a vacant post, make a salary change, allocate housing, grant leave and simultaneously notify the District/Regional office thereby allowing the appropriate records to be altered.

School administrators can avoid unnecessary travels for meetings by utilizing opportunities provided by video -conferencing, e-mail and chat lines. The use of e-mail allows detailed reports to be sent instantly over short and long distances at a low cost. (Halliday, 1997)

The essential steps necessary to realize the benefits of IT when preparing for the introduction of new technology intended to improve educational administration would involve, having a clearly defined decentralized management structure with adequate delegated powers, developing accurate and reliable record systems. Other ways of realizing the benefits of IT include specifying in detail what the management information system is expected to provide, ensuring that steps are taken to identify,

collect, verify and record the data necessary and that the system devised is secure. A technical advice should ensure that the most appropriate hardware and software are specified for purchase to meet the immediate tasks and an allowance is made for expansion of the system at a later date.

These issues must be addressed and resolved before new forms of technology are commissioned. As with any new system there will be difficulties during the early days but without doubt, the delivery of education service and the efficiency of school administrators will improve drastically.

2.5. IT policy in education in Kenya

The national development plan 2002 - 2008 underscores the need for an IT policy in Kenya. According to the plan, Kenya will put in place an IT policy that will guide and target the pivotal role of IT in the digital economy. Consequently, training at all levels of education and capacity building will be imperative to ward off current cultures and attitudes towards IT, that is computing too difficult to learn, computers leads to unemployment among others. (Republic of Kenya 2002).

The plan further outlines that the government will initiate in - service teacher training program to train 43,000 teachers by the end of the plan period. The plan admits the IT sector, has to contend with several constraints including lack of policy guidelines in the management sector and inadequate IT education and training (Republic of Kenya 2000). Raman (2001) in an article entitled 'Colleges schools offer obsolete computer

skills' observes that the Ministry of Education has neither policies nor programs to assist schools to acquire IT facilities. Worse still, it does not offer any advice on the subject.

2.6. FACING THE CHALLENGE OF IT

According to Sleight (2000), in order for school administrators to efficiently face the challenge of IT they need to put the following into consideration.

(i) Understanding IT

The effective use of IT is a great challenge facing most organizations/schools today. Understanding the role of IT and how to make the best of IT systems is an essential requirement for any organization seeking competitive advantage.

(ii) Harnessing the power of IT

To gain maximum benefit from the use of IT, an organization/school must ensure that the systems are truly effective in meeting its needs. Decision - makers must create effective ownership of technology and should focus on using IT to gain competitive advantage.

(iii) Focusing on human element

While great effort is put into developing better, faster and more complex IT systems, the human element is often ignored. If the full value of IT is to be realized, one must ensure that users feel in control of technology and are positive about its use.

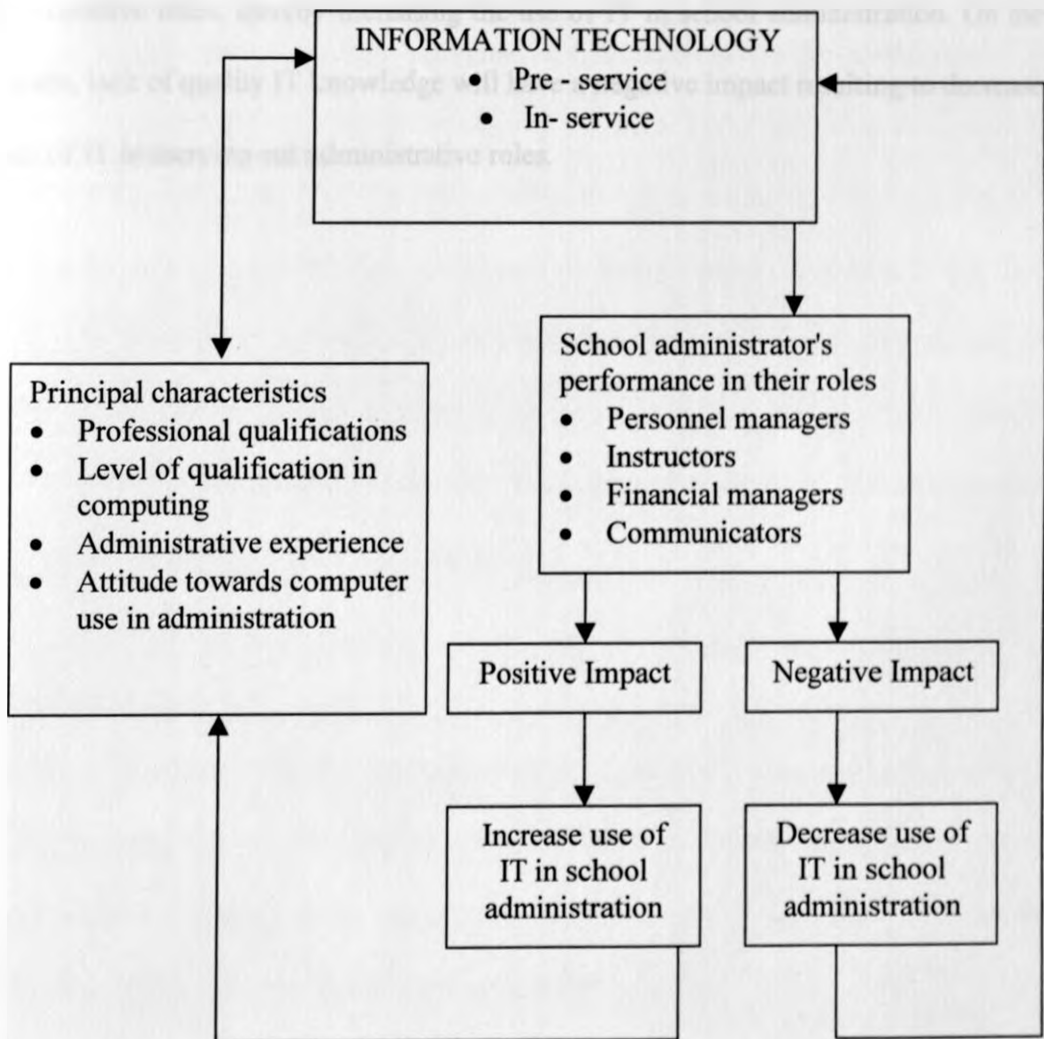
(iv) **Keeping up with change**

A common complaint concerns the difficulty of keeping up with changes in IT systems, which seems to be developing at a very fast rate. Managers must learn to recognize and respond to IT developments that are relevant to their organizations.

2.7. **Conceptual framework**

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Figure 1: Information Technology and its impact in school administration



The conceptual framework perceives that knowledge in Information technology is a determining factor in future school administrative roles. The Principal is the implementor of school administrative roles. To some extent their efficient performance in school administrative roles is determined by the IT knowledge gained through pre-service or in service training resulting to principal characteristics such as level of computer qualification and attitude towards computer use in administration. Adequate knowledge of IT will result in improved performance in carrying out the stated administrative roles, thereby increasing the use of IT in school administration. On the contrary, lack of quality IT knowledge will have a negative impact resulting to decrease in use of IT in carrying out administrative roles.

3.0 CHAPTER THREE: RESEARCH METHODOLOGY

3.1 Introduction

This section deals with the description of the methods applied in carrying out the research study. It is divided into the following subsections: Research design, target population, sample size and sampling technique, research instruments, validity of the instrument, reliability of the instrument, data collection procedures and data analysis techniques.

3.2 Research design

The Ex-post facto research design was used for this study. In this design the causes to behavior patterns in subjects being investigated are studied after they have exerted their effect on other variables. The researcher cannot therefore manipulate the independent variable, because circumstances do not allow their manipulation (Muganda, 1999). The design was to examine the impact of information technology (IT) on efficient school administration. The design was appropriate for the study because school administrator's professional qualification, level of training in computer studies, level of education and administrative experience cannot be manipulated.

3.3 Target population

The target population for this study consisted of all the public secondary school administrators in Nairobi. Nairobi has a total of forty-six schools. These schools were classified as Boy schools, Girls schools and Mixed schools. In total there are sixteen mixed schools, fourteen boy schools and sixteen girl schools.

3.4 Sample size and sampling technique.

A sample is a subset of the population to which the researcher intends to generalize the results (Wiesma, 1968). According to the table for determining sample size provided by Mulusa (1990), if there are about forty-six subjects in a population, the sample should consist of thirty-five subjects, which represent over 75% of the entire population. The number of school administrators selected from the target population was ten, fourteen and eleven for mixed schools, boy schools and girl schools respectively.

Simple stratified random sampling was used to select the schools in which the research instrument was administered. This ensured that every school in each stratum had equal chance of being selected for the study (Mulusa, 1990).

3.5 Research instrument

A questionnaire was used to collect data. The questionnaire consisted of both close-ended and open-ended questions. The questionnaire was divided into parts A, B and C. Part A sought demographic and background information on the respondents. Part B sought information on the impact of IT in four administrative roles of Principals. Part C sought information about problems encountered by school administrators in applying IT in their work and recommendations they felt may improve their performance. For majority of questions asked, a five-point scale was requested: (4) Extremely important, (3) Very important, (2) Slightly important, (1) Not important and (0) Not applicable. These levels indicated the impact of IT in the various administrative roles in schools. Each of these categories was listed on the instrument.

3.6 Validity of the instrument

Validity is defined as the degree to which a test measures what it purports to measure. Validity of the instrument was tested through the face and content validity. Content validity was done by use of the results of the pilot study, which was done randomly. It consisted of two boy schools, two girl schools and one mixed school. A university lecturer who is a specialist in the area of study reviewed the instrument.

3.7 Reliability of the instrument

According to Borg and Gall (1986) reliability refers to the degree to which test scores are free from measurement errors, that is the level of internal consistency or stability of the measuring device over time. To establish reliability piloting was carried out. Split-half method was used during the piloting. This involves randomly splitting the instruments into halves one containing odd numbers and the other even numbers. Each item from two groups was computed and the scores correlated. The co-efficient (r) was reflected through Pearson product moment. Since the co-efficient so computed was not reflecting the reliability of the whole instrument, the Spearman Brown prophecy formula was used to ensure full reliability (Mugenda and Mugenda, 1999). This computation was done using computer program called SPSS (Statistical Package for Social sciences).

3.8 Data collection procedures

The researcher sought a permit from the Ministry of Education to conduct a study in Nairobi. School administrators of the participating schools were contacted, after which the schools were visited for the administration of the questionnaires. The administration of data collection was done by the researcher both at pilot and main study. All respondents were assured confidentiality.

3.9 Data analysis technique

On completion of data collection and before embarking on compiling and coding the data the researcher checked for completeness of the questionnaires. The responses in the questionnaires were tabulated, coded and processed by the use of a computer. A computer program SPSS was used in analyzing the data for part A and B.

Part C of the questionnaire yielded qualitative data regarding problems encountered in using IT for administrative work and recommendations principals felt could help improve their work. In this type of data, coding categories were developed as a way of organizing the qualitative data collected according to a particular question items. This involved going through the data, numbering it sequentially and searching through the data for regularities and patterns related to question item. The writing down of words and phrases to represent the regularities and patterns then followed. The words and phrases were coding categories and also a means of sorting out the data so that material bearing a given question item could be physically separated from the other data. The data was then analyzed using frequencies and percentages.

4.0 CHAPTER FOUR: DATA ANALYSIS AND INTERPRETATION

4.1 Introduction

This chapter presents the analysis of data collected and its interpretation in relation to the objective and aims of the study. It includes analysis of demographic data of the respondents, analysis of research questions and summary of data analysis. Problems encountered in applying IT in secondary school administration and suggested solutions to these challenges have also been presented.

Questionnaire return rate

A total number of 35 questionnaires were administered to the Principals in public Secondary schools in Nairobi. Five questionnaires were also administered to 5 randomly chosen principals as pilot. All questionnaires were returned fully filled in the study thus the questionnaires return rate was 100.0%. This is explained by the fact the researcher was able to personally meet all the principals.

4.2 Analysis of Demographic data of the respondents

The data presented in this section of the study was obtained from completed principals questionnaires given to principals in public secondary schools in Nairobi Province.

Table1: School Category

	Frequency	Percent
Mixed school	10	28.6
Boys school	14	40.0
Girls School	11	31.4
Total	35	100

The data in Table 1 indicated that there were more boys public secondary schools in Nairobi (40%) compared to mixed Schools (28.6%) and 31.4% girls Schools.

Table 2: Student Enrollment

	Frequency	Percent
Under 200	4	11.4
200 - 399	14	40.0
400 - 599	10	28.6
600 and above	7	20.0
Total	35	100

The data concerned with the student's enrollment (Table 2) indicated that most schools 40% had a student population of 200-400 while 11.4% of the schools had a student population of 200 and less. 10 schools (28.6%) had a students population of 400-599 and 7 schools (20%) of public secondary schools in Nairobi had 600 and above students.

Table 3 Principals Gender

	Frequency	Percent
Male	23	65.7
Female	12	34.3
Total	35	100

The data concerned with gender of the principals as shown in Table 3 indicated that there were more male principals than female who made for almost one third of the total.

Table 4: Principals Age

	Frequency	Percent
Under 40 years	1	2.9
40 - 49	26	74.3
50 - 55	8	22.9
55 and above	0	0.0
Total	35	100

The data presented in the Table 4 above on principals age, shows that majority of the principals are between 40-49 years (74.3%). Only 2.9% of the principals are under 40years and 22.9% of the principals are within the bracket of 50-55 years.

Table 5 Teaching Experience

	Frequency	Percent
Less than 10 years	0	0.0
10 - 19 years	9	25.7
20 - 29 years	25	71.4
30 years	1	2.9
Total	35	100

Table 5 shows the teaching experience of the principals. It indicated that 71.4% of the principals had a teaching experience of between 20-29 Years, 25.7% had a teaching experience of between 10-19 years. Only 2.9% had a teaching experience of 30 years.

Table 6: Experiences as Principals

	Frequency	Percent
Less than 10 years	29	82.9
10 - 19 years	6	17.1
20 - 29 years	0	0.0
30 years and above	0	0.0
Total	35	100

The data in Table 6 shows years of experience as principals and indicated that majority of principals had served as principals for less than 10 years i.e. 82.9% and only 17.1% had served between 10-19 years none of the respondents had an experience of over 20 years as Principals.

Table 7 Experience as a principal in the current school

	Frequency	Percent
Less than 10 years	32	94.3
10 - 19 years	2	5.7
20 - 29 years	0	0.0
30 years and above	0	0.0
Total	35	100

Table 7 above indicated that only 5.7% of the principals had stayed as principals in their current school for between 10-19 years. 94.3% of them had only been principals for less than 10 years in the current stations. None had stayed for over 20 years as principals in their current stations.

Table 8: Academic Qualifications

	Frequency	Percent
Diploma	7	20.0
B.Ed	19	54.3
P.G.D.E.	4	11.4
M.E.D.	5	14.3
Total	35	100

Table 8 shows the academic qualification of principals and indicated that most principals 54.3% had a Bachelor of Education Degree. 20% had Diploma in Education,

11.4% had a Post Graduate Diploma in Education and 11.4% had a Masters Degree in Education.

Table9: How recently a course in administration had been taken.

	Frequency	Percent
Currently or without last year	22	62.9
Without the last 5 years	8	22.9
Between 5 and 10 years	4	11.4
None than 10 years	1	2.9

Table 9 above indicated that 62.9 % of the principals had attended a course in administration currently or within last year, 22.9 % had attended a course between 5-10 years and 2.9% had attended a course in administration 10 years ago.

Table 10: Knowledge of using computers

	Frequency	Percent
Yes	29	82.9
No	6	17.1
Total	35	100

The data on knowledge of using computers Table 10 above indicated a very high level of computer literacy of 82.9 % compared to 17.1% of those who were not literate.

Table 11: Level of computer literacy.

	Frequency	Percent
Knowledge from friends/colleagues	18	51.4
Certificate(s) earned from computer college	14	40.0
Diploma certification from computer college	2	5.7
Above diploma certification in computing	1	2.9
Total	35	100

Table 11 above shows that the level of computer literacy among the principals in public secondary schools in Nairobi was quite low since only 2.9% of the entire respondents had above Diploma in computing. Majority of the principals had acquired knowledge in computing from friends and colleagues (51.1%).

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Table 12: Intention of acquiring computer knowledge.

	Frequency	Percentage
Soon	30	85.7
Later	0	0.0
Never	5	14.3
Total	35	100.0

Table 12 above shows that 85.7% of all the principals who were not computer literate had intentions of acquiring the knowledge soon. Only 14.3% had no intention of acquiring computer knowledge.

Table 13: Use of computer for administrative duties.

	Frequency	Percentage
Yes	27	77.1
No	8	22.9
Total	35	100.0

The data concerning the use of computers for administrative duties (Table 13) shows that majority of the principals (77.1%) were using computers for administrative work and only 22.9% were not using computers for administrative work.

Table 14: Importance of computers in administrative work.

	Frequency	Percentage
Extremely important	29	82.9
Very important	6	17.1
Slightly important	0	0.0
Not important	0	0.0
Total	35	100.0

Table 14 above shows that 82.0% of all the principals in public secondary schools in Nairobi felt that computers are extremely important in their administrative work and 17.1% felt that computers were very important.

Table 15: Problems encountered in using computers to carry out administrative work

	Frequency	Percentage
Initial cost of acquisition, installation, maintain ace and upgrading expensive	35	100.0
Support staff/ teachers untrained in computers	35	100.0
Available computers not networked and lack internet facilities	35	100.0
Lack of customized software in school management	35	100.0
Frequent power interruption	30	85.7
Lack of funds	25	71.4
Security and confidentiality	15	42.9
Public awareness especially to Parents and Guardians	12	34.3
Resistance to change	8	22.9
Difficulties of identifying appropriate strategies of improving management of information systems	6	17.1

Table 16: Training programs that need to be in co-operated in teacher training colleges to improve the use of computers for administrative work.

	Frequency	Percentage
Training in IT to be compulsory in all teacher-training colleges.	35	100.0
Training in IT be biased on school administration.	35	100.0
Mandatory in- service training in IT for those already in the field	35	100.0
Support staff to be trained in Microsoft packages	35	100.0
Post graduate courses to incorporate an IT based course in Administration.	27	77.1
Distance learning courses in the areas of computer in school administration	18	51.4
Computer programming to help teachers customize software in relation to school administration requirements.	12	34.3
Publication of manuals to guide Administrators on use of computer for school administration	6	17.1

4.3 Analysis of research questions

To realize the objectives of the study and answer the research questions, formulated answers were sought via analysis and data received from the respondents. The underlying quest for the research questions was to determine the impact of information Technology (IT) in school administration. The following were the responses to the research questions

Q1. What is the impact of IT on school administrator's role as Personnel manager?

To answer the question, the researcher analyzed the data using percentages as shown in table 17

Table 17: The impact of IT on school administrator's role as personnel manager?

The respondents were to indicate how IT is important to personnel factors using the following key:

4 – Extremely important, 3 – Very important, 2 – Slightly important,

1 – Not important, 0 – Not applicable

Personal Factors	Extremely important		Very important		Slightly important		Not important		Not applicable	
	F	%	F	%	F	%	F	%	F	%
Record keeping for students/teachers non teaching staff	32	91.4	3	8.6	0	0.0	0	0.0	0	0.0
Decision making	0	0.0	3	8.6	23	65.7	0	0.0	9	25.7
Recruitment of staff	0	0.0	5	14.2	12	34.3	9	25.7	9	25.7
Hiring & firing of personnel	0	0.0	9	14.3	5	25.7	9	25.7	12	34.3
Assignment of duties	6	17.1	22	62.9	4	11.4	0	0.0	3	8.6
Managing of reports to relevant authorities	26	74.3	9	25.7	0	0.0	0	0.0	0	0.0
Preparation of returns to be sent to relevant authorities	27	77.1	5	14.3	3	8.6	0	0.0	0	0.0
Selection of students and teachers.	20	57.1	7	20.0	5	14.3	3	8.6	0	0.0

a) Record keeping for teachers, students, and non-teaching staff

Under this aspect 91.4% of the respondents felt that IT was extremely important and 8.6% felt it was very important. This shows that 100.0% of the entire respondent felt IT was useful in this aspect of personnel management as shown in the Table 17.

b) Decision making

IT in this aspect of personnel management was not favorable since 8.6% felt IT was useful while 65.7% felt IT was not useful and 25.7% felt it was not applicable (Table 17).

c) *Recruitment of staff*

Table 17 above indicates that 14.2% of the respondents felt IT was useful in recruitment of staff while 60.0% said it was not useful. This shows that IT impacted negatively as majority felt it was not useful.

d) *Managing reports of relevant authorities*

100.0% of the respondents had a view that IT was useful in managing reports of relevant authorities.

e) *Preparation of returns to be sent to relevant authorities*

IT seemed to play a major role with 91.4% feeling it was useful while 8.3% felt it was not useful (Table 17).

f) *Selection of students and teachers for various activities*

77.1% of the respondents said IT was useful and 22.9% were of the view that IT was not useful. This indicated a positive impact of IT use in this aspect of personnel management.

g) *Hiring and firing of personnel*

The use of IT in Hiring and firing of personnel was unfavorable. Only 14.3% felt IT was useful. 51.4% felt IT was not useful and 34.3% of all the respondents felt IT was not applicable in this aspect of personnel management (Table 17).

h) *Assignment of duties*

IT impact in assignment of duties was highly positive since 80.0% of the respondents had a view that IT was useful. 11.4% said IT was not useful while 8.6% of the respondents' felt IT was not applicable in the area of assignment of duties.

Q2 What is the impact of IT on school administrator's role as Instructional leader?

Table 18: The impact of IT on school administrator's role as instructional leader.

The respondents were to indicate how IT was important to instructional factors using the following key:

4 – Extremely important, 3 – Very important, 2 – Slightly important,

1 – Not important, 0 – Not applicable

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Instructional Factors	Extremely important		Very important		Slightly important		Not important		Not applicable	
	F	%	F	%	F	%	F	%	F	%
Timetabling	0	0.0	3	8.6	23	65.7	9	25.7	0	0.0
Supervision & inspection	3	8.6	6	17.1	12	34.3	8	22.9	6	17.1
Evaluation of progress of both student & teachers	18	51.4	12	34.3	5	14.3	0	0.0	0	0.0
Management of teaching resources	6	17.1	18	51.4	6	22.9	2	5.7	1	2.9
Keeping track of teachers scheme of work & lesson plans	16	45.7	8	22.9	5	14.3	0	0.0	6	17.1
Tracking of curriculum implementation	17	48.6	6	17.1	7	20.0	3	8.6	2	5.7
Management of attendance of both teachers & students to various lessons	3	8.6	9	25.7	12	34.3	9	25.7	2	5.7

a) *Timetabling*

In this area of instructional leadership IT seemed to be less utilized with only 8.6% who felt IT was useful compared to 91.4% who felt IT was not useful as shown in Table 18.

b) *Evaluation progress of both students and teachers*

This is an important aspect in any school. IT use in this area was evident as its impact was very high since 85.7% felt IT was useful compared to 14.3% of the respondents who felt IT was not useful.

c) *Supervision and inspection*

The data in Table 18 shows that IT impacted negatively in supervision and inspection since its use was unfavorable. Only 25.7% of the respondent felt IT was useful in supervision and inspection compared to 56.4% who felt IT was not useful and 17.1% of them with the view that IT was not applicable.

d) *Management of teaching resources*

The impact of IT in this aspect of instructional leadership was positive, as 68.5% of the respondents felt IT was useful. 28.6% felt it was not useful.

e) *Keeping track of teachers scheme of work and lesson plans*

These are important as they explain what is to be covered within a given period and on a given lesson by each teacher. 68.6% of the respondent felt IT was useful which indicates a positive impact. Contrary 14.3% had the view that IT was not useful and 17.1% felt IT in this area was not applicable.

f) *Tracking of curriculum implementation*

In this area 65.7% felt IT was useful hence a positive impact compared to 28.6% who felt it was not useful. Among the respondents 5.7% felt IT was not applicable at all.

g) Management of attendance of both teachers and students to various lessons

IT impact in this area of instructional leadership impacted negatively since 60% felt IT was not useful and 5.7% of the respondents also felt IT was not applicable. Only 34.3% of the respondents felt IT was useful.

Q3 What is the impact of IT on school administrator's role as

Public relation officer?

The various aspects that contributed to the role of a principal as a public relation officer were outlined. The researcher analyzed the response of the impact of IT in this field using frequencies and percentages in order to answer the question.

Table 19: The impact of IT on school administrator's role as public relation officer.

The respondents were to indicate how IT was important to public relation factors using the key below

4 – Extremely important, 3 – Very important, 2 – Slightly important,

1 – Not important, 0 – Not applicable

Public Relation Factors	Extremely important		Very important		Slightly important		Not important		Not applicable	
	F	%	F	%	F	%	F	%	F	%
Timely delivery of records to relevant offices	29	82.9	4	11.4	2	5.7	0	0.0	0	0.0
Accurate preparation in conferences/seminars through information sharing	25	71.4	3	8.6	5	14.3	2	8.6	0	0.0
Active participation in conferences/seminars through information sharing	12	34.3	18	51.4	2	5.7	3	0.0	0	0.0
Effective communication between the principal and various stakeholders e.g. BOG, PTA	20	57.1	10	28.6	5	14.3	0	5.7	0	0.0
Easy preparation of appraisal for teachers, students & non teaching staff	15	42.9	12	34.3	6	17.1	2	0.0	0	0.0
Co-ordination and meditation between the school and the outside community	11	31.4	21	60.0	2	5.7	0	0.0	1	2.9
Reliable storage of information that can be used in legal matters	26	74.3	7	20.0	2	5.7	0	0.0	0	0.0
Co-operation and collegiality among various principals	12	34.3	17	48.6	6	17.1	0	0.0	0	0.0

a) *Timely delivery of records to relevant offices*

The response from Table 19 shows that the impact of IT was highly positive with 94.3% of all the respondents having the view that IT was useful. 5.7% felt IT was not useful.

b) *Accurate preparation in conferences/seminars through information sharing*

80.0% of the respondents felt IT was useful. 14.3% felt it was slightly important while 5.7% felt it was not applicable. This indicated a positive impact of IT use in this aspect of public relation.

c) *Active participation in conferences/seminars through information sharing*

IT impacted positively in this area since 85.7% of the respondents felt IT was useful. Besides this, 14.3% of the respondents had a view that IT was not useful.

d) *Effective communication between the principals and various stakeholders*

IT seemed to play a major role since 85.7% felt it was useful and 14.3% felt it was not useful. This also shows a positive impact of IT use in this aspect of public relation.

e) *Easy preparations of appraisal for teachers/students and non-teaching staff*

The data in Table19 indicated a favorable IT impact with 77.2% of the respondents feeling IT was useful and only 22.8% felt IT was not useful.

f) *Co-ordination and mediation – between the school and outside community*

91.4% of the respondents felt IT was useful in coordination and mediation between the school and outside community while 5.7% felt it was not useful. Contrary 2.9% of the respondents felt IT was not applicable (Table19).

g) *Reliable storage of information that can be used in legal matters*

The response as shown in table 19 indicated that 94.3% felt IT was useful and 5.7% of the respondents felt IT was not useful.

h) *Co-operation and collegiality among various principals*

82.9% of those who responded said IT was useful hence a positive impact of IT use in co-operation and collegiality among various principals as an aspect of public relation. Only 17.1% felt IT was not useful (Table 19).

Q4 What is the impact of IT on school administrator's role as financial controller?

The question was answered using the response obtained on the impact of IT on various financial aspects of schools as shown in Table 20

Table 20: The impact of IT on school administrator role as financial controller.

The respondents used the key below to indicate how IT was important to financial factors listed in the table.

4 – Extremely important, 3 – Very important, 2 – Slightly important,

1 – Not important, 0 – Not applicable

Financial Factors	Extremely important		Very important		Slightly important		Not important		Not applicable	
	F	%	F	%	F	%	F	%	F	%
Maintenance of students tuition fees	32	91.4	3	8.6	0	0.0	0	0.0	0	0.0
Accurate budget proposal and forecasting	28	80.0	4	11.4	3	8.6	0	0.0	0	0.0
Easier management of payroll for both teaching and non teaching	0	0.0	13	37.1	14	40.0	8	22.9	0	0.0
Management of donations from NGO's and well wishers	4	11.4	11	31.4	14	40.0	3	8.6	3	8.6
Maintenance of school financial records	29	82.9	6	17.1	0	0.0	0	0.0	0	0.0
Efficient/effective allocation of bursary funds to the needy	0	0.0	7	20.0	23	65.7	3	8.6	2	5.7
Timely preparations and submission of financial reports to education auditors	29	82.9	6	17.1	0	0.0	0	0.0	0	0.0

a) Maintenance of student's tuition fees

The impact of IT in this aspect of financial management seemed to be highly recognized with 100.0% indicating IT was useful as shown in the Table 20.

b) *Accurate preparations and forecasting*

IT impacted positively since 91.4% of the respondents felt IT was useful, only 8.6% felt it was not useful as far as accurate preparations and forecasting is concerned (Table 20).

c) *Easier management of payroll for both teaching and non teaching staff*

Of all the respondents 37.1% felt IT was useful compared to 62.91% who felt it was not useful hence IT impact in this aspect of financial control was unfavorable

d) *Management of donations from NGO's and well wishers.*

An average utilization of IT was shown with 42.8% of those who responded feeling IT was useful and 48.6% feeling IT was not useful. All the same 8.6% of all the respondents felt IT was not applicable in this aspect.

e) *Maintenance of school financial records*

The data in Table 20 indicated that 100.0% felt IT was useful in maintenance of school financial records hence a very high impact of IT utilization in maintenance of financial records.

f) *Efficient/effective allocation of bursary funds to the needy*

The impact of IT utilization in this aspect of financial control was low since only 20.0% felt IT was useful while 65.7% felt IT was not useful. 8.6% of the respondents felt IT was not applicable in efficient/effective allocation of bursary funds to the needy.

g) *Timely preparations and submission of financial reports to education auditors*

IT impact in this area seemed favorable with 100.0% having the view that IT was useful in timely preparations and submission of financial reports to education auditors as indicated in Table 20.

4.4 Summary of data analysis

The study achieved its set objectives of determining the impact of IT in efficient school administration. The extent to which IT impact was felt in various aspects of school administration namely personnel management, instructional leadership, public relation and financial control were identified. Areas such as decision-making, recruitment of staff and hiring of staff, which are under personnel management, require to be addressed if computers are to be efficiently used. The same applies to areas of efficient and- effective allocation of bursary funds to the needy and easier management of payroll for both teaching and non-teaching staff. The analysis of data revealed that IT was impacting positively to the way administrative roles of principals are carried out.

The study also identified various problems encountered by principals in using computers to carry out school administrative roles which include lack of training, lack of funds, poor infrastructure, resistance to change, security and confidentiality, public awareness especially parents on importance of IT, identifying appropriate strategies of improving management of information using computer systems as a tool, acquisition, installation and maintenance costs being too expensive. Most important is the need to keep training the teachers and support staff to effectively utilize the benefits of IT efficiently. The full value of IT will be realized when users feel in control of the technology and are positive about its use.

5.0 CHAPTER FIVE: SUMMARY, CONCLUSION AND

RECOMMENDATIONS.

5.1 Introduction

This chapter presents the summary of the study, conclusion, recommendations and suggestions for further study.

5.2 Summary of the study

One of the ingredients a country needs is the development of its human capital in order to achieve sustainable economic growth. In the present era investment in information technology (IT) is a prerequisite for that growth. IT has become the engine with which nations can achieve industrial and technological advancement. The school principals need to embrace IT in order to cope with the ever-expanding education system and be able to face a variety of administrative and managerial problems for the education system.

The purpose of this study was to examine the impact of Information Technology (IT) in efficient school administration. The study was carried out in public secondary school in Nairobi province. The literature review was organized under the following sub-headings: Roles of a school administrator; IT and school administration; Hindrances/benefits to effective use of IT in school administration; IT policy in education in Kenya; Facing the challenge of IT.

The study was an ex-post facto design and the targeted population consisted of principals in public secondary schools in Nairobi province. The research instrument used was a questionnaire. It was divided into three parts A, B and C. Part A sought demographic and background information on the respondents. Part B sought information on the impact of IT in four administrative roles of principals. Part C sought information about problems encountered by school administration in applying IT in their work and recommendation they felt would improve their performance.

To determine the reliability of the instrument a pilot study was conducted in five schools randomly selected from the public secondary schools in Nairobi. After establishing the reliability and validity of the instrument a total of 35 questionnaires were administered and the return rate was 100%. The analysis of the data was undertaken using frequencies and percentages.

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5.3 Summary of findings

The findings were classified in terms of the stated objectives of the study outlined below.

(i) To examine the impact of IT on school administrators role as personnel managers.

The following were the findings in relation to the above stated objective.

a) The impact of IT in areas such as record keeping, managing reports to relevant authorities, preparations of reports, selection of students and teachers for various

activities was highly positive due to the fact that majority of the respondents felt that IT was useful in these areas of personnel management.

b) A negative impact of IT was noted in areas concerning decision-making, recruitment of staff and also in hiring and firing of personnel since over 50% of the respondents felt IT was not useful in these areas of personnel management.

(ii) To examine the impact of IT on school administrators role as instructional leaders.

The research revealed that IT impact was favorable in such areas as evaluation of progress of both students/teachers, management of teaching resources, keeping track of teachers scheme of work and lesson plans. But areas such as timetabling, supervision, inspection and management of attendance of both students/ teachers to various lessons impacted negatively as respondent felt IT in these areas was not useful.

(iii) To examine the impact of IT on administrators role as public relation officer.

It was noted from the study that IT impacted positively in all the areas concerning roles of a principal as a public relation officer due to that fact that majority of the respondents felt IT was fully utilized in carrying out these duties of public relation. In particular areas such as timely delivery of records to relevant offices, coordination and mediation between the school and the community and reliable storage of information that can be used in legal matters had a score of over 90.0% of respondents who felt IT was actually useful in these aspects of public relation.

(iv) To examine the impact of IT on administrators role as a financial controller

The findings obtained in relation to the above objective were;

a) A positive impact of IT utilization in such areas as maintenance of students tuition fees, maintenance of school financial records, accurate budget preparation and forecasting, timely preparation and submission of financial reports to education auditors. Most respondents had a view that IT was well utilized, which was evident from the findings of the study.

b) Contrary the findings revealed a deficiency of IT use in such areas as efficient/effective allocation of bursary funds to the needy, management of donations from NGO and well wishers, easier management of payroll for both teaching and non teaching staff due to underutilization of IT use in these areas.

Other than the findings in terms of the objectives of the study the following research findings were also evident.

1. The study revealed that majority of the principals are computer literate (82.9%) and only 17.1% of them were illiterate.

2. The study also revealed that though majority of principals are computer literate their literacy level is quite low. The largest percentage acquired computer knowledge from friends/ colleges (51.7%) against 37.9% who had certificates earned from computer colleagues. It was also worth noting that none of the respondents had a higher diploma in computer compared to 8.6% who held a diploma.

3. The study further revealed that of those who were not literate in computing, 83.3% of them were soon willing to be literate compared to 16.7% of them who revealed that they had given up acquiring knowledge in computing.

4. Another finding is that majority of the principals were using computers (77.1%) for administrative work compared to 22.9% that were not using them.

5. Majority of the principals agreed to the fact that computers are essential in administrative work, 82.9% agreed that computers are extremely important compared to 17.1% who felt they were very important. This indicated a positive impact of IT use in school administration.

5.4 Conclusion of the study

From the findings the following conclusions were arrived at

- i) Majority of the principals were IT literate although their literacy level was quite low and this maybe a handicap in fully utilizing the potential of IT in administration. Re-training in IT can improve the situation, which can be done through in-service programmes and at postgraduate level for those willing to pursue higher studies.
- ii) The impact of IT in the four roles of administrators namely personnel management, instructional leadership, public relation and financial management was on average favorable but through proper training there is hope of improvement in areas where IT impact seemed inadequate for example decision making, supervision and inspection among others.
- iii) There is need to overhaul the training programmes of teacher training colleges in order to incorporate IT courses. Teacher training colleges should be encouraged to introduce courses in computing which should help teachers and especially administrators to make their work efficiently. Other than the basic computer courses,

the training colleges should ensure teachers have basic knowledge in programming to enable them customize available software to suit their needs.

5.5 Recommendations

1. Training in IT should be made compulsory in all teachers training colleges and the training be biased towards computer use in school administration. This training will also enhance improvement in literacy level.
2. The principals already in the field and untrained in IT should receive a mandatory in-service course to enhance utilization of IT in their field of work.
3. Postgraduate courses in education should have a core unit in computing and specifically biased to practical application of computing in school management.
4. Teachers and non-teaching staff should be encouraged to take courses in computing and be remunerated equally for their achievement.
5. Programming courses should be offered to specifically assist educationist in customizing programs to suit their needs for example timetabling programs.
6. Publications of manuals to guide administrators on emerging issues in IT in relation to utilizing the same in their administrative work
7. Distance learning courses in areas of computer application in schools.
8. KESI should offer courses in computer for school administration. Emphasis should be placed in Management of Information Systems (MIS).

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EAST AFRICANA COLLECTION

In order to overcome the problems of utilization of computers in school administration revealed by respondents the following recommendations were put forward: -

1. Seminars/conferences to create awareness among parents/guardians on usefulness of getting IT skills at school level. This would encourage them to actively participate in raising funds to acquire computer facilities.
2. The policy on IT to be evaluated so that taxation on IT facilities can be lowered. This will lead to lower cost of acquisition, installation and maintenance of computer facilities.
3. The government should also provide a road map on national training in IT for all teachers. This will not only create awareness but also reduce resistance to change in embracing this dynamic technology in the field of education.

5.6 Suggestions for further research

Based on the findings of the study there are areas that need to be studied in order to enhance the impact of IT in school administration positively.

1. The study can be replicated using an interview schedule as the research instrument with the Principals.
2. A study of the impact of IT in school administration can be replicated in rural and other urban set-ups.
3. A study of training requirement in IT for Principals.
4. Study of the impact of IT in school administration by Principals of private secondary schools in Nairobi.

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APPENDIX 1

QUESTIONNAIRE FOR SCHOOL ADMINISTRATORS

PART A

Please tick where appropriate

1. In which category does your school fall?

- (i) Mixed School
- (ii) Boys School
- (iii) Girls School

2. How many students are enrolled in your school

- (i) Under 200
- (ii) 200 – 399
- (iii) 400 – 599
- (iv) 600 and above

3. What is your gender?

- (i) Male
- (ii) Female

4. How old are you?

- (i) Under 40
- (ii) Between 40 – 49
- (iii) Between 50 – 55
- (iv) 55 and above

5. Indicate the number of years you have been a teacher.

- (i) Less Than 10 years
- (ii) Between 10 - 19 years
- (iii) Between 20 - 29 years
- (iv) Over 30 years

6. Indicate the number of years you have been a principal

- (i) Less than 10 years
- (ii) Between 10 -19 years
- (iii) Between 20 - 29 years
- (iv) Over 30 years

7. Indicate the number of years you have been principal in this school

- (i) Less than 10 years
- (ii) Between 10 - 19 years
- (iii) Between 20 - 209 years
- (iv) Over 30 years

8. What is your highest academic qualification?

- (i) Diploma
- (ii) B.Ed
- (iii) P.G.D.E
- (iv) M.Ed

9. How recently have you taken a course related to administration?

- (i) Currently within the last year
- (ii) Within the last 5 years
- (iii) Between 5 and 10 years
- (iv) More than 10 years
- (v) Never

10. Are you computer literate?

- (i) Yes
- (ii) No

11.If YES indicate your level of computer literacy

- (i) Knowledge acquired from friends/colleges
- (ii) Certificate(s) earned from computer colleges
- (iii) Diploma certification from computer colleges
- (iv) Above Diploma certification in computer.

12.If NO when do you intend to acquire computer training?

- (i) Soon
- (ii) Later
- (iii) Never

13.Are you currently using computer in carrying out your administrative duties?

- (i) Yes
- (ii) No

14.Generally, how important do you think computers are/would be essential to your administrative work?

- (i) Extremely important
- (ii) Very important
- (iii) Slightly important
- (iv) Not important
- (v) Not applicable

PART B

15. Use the following key to indicate how important I (Information Technology) is to Personnel management factors below

- (4) Extremely important
- (3) Very important
- (2) Slightly Important
- (1) Not important
- (0) Not applicable

Personnel Factors

Record keeping (for teachers/students & non-teaching staff)	
Decision making	
Recruitment of staff	
Hiring and firing of personnel	
Assignment of duties	
Managing reports to relevant authorities	
Preparation of returns to be sent to relevant authorities	
Selection of students and teachers for various activities (e.g. Teachers professional development)	

16. Use the following key to indicate how important IT is to instructional factors below

- (4) Extremely important
- (3) Very important
- (2) Slightly Important
- (1) Not important
- (0) Not applicable

Instructional factors

Supervision and inspection	
Evaluation of progress of both students and teachers	
Time tabling	
Management of teaching resources	
Keeping track of teachers scheme of work and lesson plans	
Tracking of curriculum implementation	
Management of attendance of both teachers and student to various lessons	

17. Use the following key to indicate how important IT is to the public relation (Communication) factors below

- (4) Extremely important
- (3) Very important
- (2) Slightly Important
- (1) Not important
- (0) Not applicable

Public relation factors

Timely delivery of record, to relevant offices	
Accurate preparation in conferences/seminars through information sharing	
Active participation in conferences/seminars through information sharing	
Effective communication between the principals and various stakeholders (e.g. PTA, B.O.G.)	
Easy preparation of appraisal for teachers/students and non-	

teaching staff	
Co-ordination and mediation between the school and the outside community	
Reliable storage of information that can be used in legal matters.	
Co-operation and collegiality among various principal	

18. Use the following key to indicate how important is to the following financial management factors below

(4) Extremely important

(3) Very important

(2) Slightly Important

(1) Not important

(0) Not applicable

Financial Factors

Maintenance of student's tuition fees	
Accurate budget preparation and forecasting	
Easier management of payroll for both teaching and non-teaching staff.	
Management of donations from NGO'S and well wishers	
Maintenance of school financial records	
Efficient/effective allocation of bursary funds to the needy	
Timely preparation and submission of financial reports to education auditors.	

APPENDIX 2

NAIROBI PUBLIC SECONDARY SCHOOLS

1. Aquinas High School	2. Moi Forces Academy
3. Dandora Secondary	4. Buru Buiru Girls
5. Eastleigh High School	6. Dagoretti High School
7. Highway Secondary	8. Embakassi Girls
9. Hospital Hill	10. Huruma Girls
11. Kayole Secondary	12. Jamhuri High School
13. Kangemi High	14. Kamukunji Secondary
15. Kenya High School	16. Kamiti Secondary
17. Lenana School	18. Kahawa Gariison
19. Muslim Girls	20. Langata High
21. Mutuini High School	22. Moi Girls Nairobi
23. Muhuri Muchiri Secondary	24. Maina Wanjigi Secondary
25. Ngara Girls School	26. Nile Road Secondary
27. Nembu Girls School	28. Ofafa Jericho High School
29. Nairobi School	30. Parkland Boys
31. Our Lady Of Fatma	32. Parklands Arya
33. Pumwani Secondary School	34. Precious Blood
35. Pangani Girls	36. Ruthimitu Secondary
37. Ruaraka High	38. St. Teresa's Boys
39. Ruthimitu Girls	40. State house girls
41. St. Teresa's Girls	42. Starehe Boys
43. St. Georges Girls	44. Upper Hill High School
45. Uhuru Secondary	46. Nairobi Milimani Secondary

Source : Provincial Director of Education

APPENDIX 3

INTRODUCTION LETTER

Kaburia Edwin
University of Nairobi
P.O. Box 92
Kikuyu

Date

THE RESPONDENT

.....

Dear Sir or Madam,

**RE: THE IMPACT ON INFORMATION TECHNOLOGY IN EFFICIENT
SCHOOL ADMINISTRATION**

I am a postgraduate student in the University of Nairobi, pursuing a master of education degree in educational administration. I am conducting a Research study on the impact of information technology in efficient school administration.

I humbly request your participation in this research by volunteering response to the questions in the questionnaire. Please answer all questions in all parts of the questionnaire. Your response will be treated with utmost confidentiality and the results of your response will be used in this research and not otherwise. Please don't indicate your name.

Your participation in this research is greatly appreciated.

Thank you in advance.

Yours Faithfully,

KABURIA E. M.

MINISTRY OF EDUCATION, SCIENCE & TECHNOLOGY

Telegrams: EDUCATION", Nairobi

Fax No.

Telephone: 318581

When replying please quote



REPUBLIC OF KENYA

JOGOO HOUSE
HARAMBEE AVENUE
P. O. Box 30040
NAIROBI
KENYA

MOEST 13/001/35C 241/2

31st May, 2005

Edwin Mwangi Kaburia
Nairobi University
P.O.BOX 30197
NAIROBI

Dear Sir

UNIVERSITY OF NAIROBI
& EAST AFRICANA COLLECTION

RE: RESEARCH AUTHORIZATION

Following your application for authority to carry out research on "The impact of information Technology in the efficient school Administration: A study of Public Secondary Schools". I am pleased to inform you that you have been authorized to conduct research in Public Secondary Schools in Nairobi for a period ending 30th June, 2005.

You are advised to report to the Provincial Commissioner Nairobi, the Provincial Director of Education Nairobi and the Principals of the Public Secondary Schools you will visit before embarking on your research project.

It is noted that the research is a requirement in part fulfillment for the award of M.Ed Degree of the University of Nairobi.

Upon completion of your research project, you are expected to submit two copies of your research report to this Office.

Yours faithfully

A handwritten signature in black ink, appearing to read 'B. O. ADEWA'.

For PERMANENT SECRETARY
MINISTRY OF EDUCATION
SCIENCE AND TECHNOLOGY

B. O. ADEWA

FOR: PERMANENT SECRETARY