Addis Ababa University
School Of Graduate Studies

The Planning and Management Of Education Management Information System In Addis Ababa City Administration

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June 2009

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The Planning and Management of Education Management Information System in Addis Ababa City Administration

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A Thesis Presented To the School Of Graduate Studies Of Addis Ababa University in Partial Fulfillment of the Requirements for the Degree of Master Of Arts In Educational Policy And Planning

June 2009

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ACKNOWLEDGEMENTS

I would like to express my sincere gratitude and respect to my advisor Dr. Jeilu Oumer, for his tireless and invaluable assistance and guidance. Without his genuine and valuable comments, this research paper could not have such a final shape.

I would like to express my felt thanks to my friend Balcha Lulu and Tsegaye Zena for the encouragement and assistance they were giving me whenever I was in dilemma and feel helpless.

I would also like to thank my friend Demsew Alemu, my colleagues Berhan Hailu and Haile Giorgis Feleke for their assistance and cooperativeness during the preparation of this report.

I am also indebted to my wife, Worknesh Kasaye and her sister Tsegereda Kasaye who were always standing in my side while I was doing my study. I would also like to express my felt thanks to my brothers Tekeba Jifar and Besufekad Jifar and his wife Welela Bayih for their consistent assistances and really strong enough in helping me morally during my stay in the university.

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ABBREVIATIONS AND ACRONYMS

BOE: Bureau of Education

EFA: Education for all

EMIS: Education Management Information System

ESDP: Education Sector Development Program

GER: Gross enrolment rate

IT: Information Technology

MOE: Ministry of Education

NER: Net enrolment rate

SS: Secondary School

UNESCO: United Nations Educational, Scientific and cultural Organization.

ABSTRACT

The planning and management of EMIS at all levels of the education system has a number of shortcomings. The general objective of the study was to assess the practices of the planning and management of education information systems at different hierarchies of Addis Abeba city Administration. The descriptive survey method was employed. Samples were drawn from education bureau, Kifleketema Education offices Kebeles and, schools. A variety of sampling techniques, multistage, purposeful and random sampling were employed. Questionnaires, interviews, and documents were used to collect the necessary data. The obtained data were analyzed using statistical tools of percentage, mean, and grand mean. The result of the study indicates that Information was highly utilized for reporting purposes, but it was found that utilization of information for planning, monitoring and evaluation and resource allocation was low. There was a high demand for educational information; on the other hand EMIS was doing its activity without planning. There was no independent unit established for the information system. There was also no information communication strategy designed to disseminate information at all levels. The only dissemination media used were Annual abstract and reports. Furthermore, the major problems identified by the study in the management of EMIS include turn over of personnel, lack of training, lack of human resources, and lack of awareness on the importance of information for planning and decision-making. The recommendations forwarded include in assigning EMIS personnel their level of education and subject specialization should be considered and should develop the capacity of EMIS at different levels through continuous training. Special unit for EMIS should be established and information system planning should be prepared in a regular basis. Variety of dissemination media should be employed as a means of information dissemination.

CHAPTER ONE

1 The Problem and its Approach

This chapter deals with background, statement of the problem, significance of the problem, delimitation of the study, limitation of the study, definition of terms and organization of the study.

1.1 Background

Information system is a system of people and activities that process the data which includes the organization's manual and automated processes. According to UNESCO (2008), an education information system is the basis of management, planning and evaluation of a given educational system. During the educational management process, the information system should inform the different actors and partners on the state of the sector, its internal and external efficiency, its pedagogical and institutional operation, its performance, shortcomings and needs. The needs for information are varied and becoming increasingly complex. Due to this reason information system should be as complete as possible. It should cover all the needs and areas for information and not only the aim to collect, store data and process information. It should also help in the formulation of educational policies, their management and evaluation.

Thus, information system does not only focus on collecting, storing and processing information. Instead; it also plays a role in the education policy-making, by providing relevant and accessible information. Information system was originally designed to be a management tool but, it is gradually being perceived as an essential tool and support system for the formulation of education policies, their respective management, and evaluation. It should be born in mind that the collection, processing, analysis and reporting of educational information require systematic planning and handling of information.

The processes by which data are gathered, collated, organized, stored, analyzed, shared and acted upon need to be logically structured and well organized. Information system should support an entire network of education sector stakeholders at all level. An education information system should utilize raw data about the education system, and through analysis and interpretation, it should turn into useful information that can be acted upon.

Information supports planning and management in many ways. According to Cassidy (2006), Information assists planning in three main ways. First, it acts as a diagnostic tool that forms the basis of plan development. Information enables strategic planners to assess the existing capacity and characteristics of the education system. This assists with setting priorities for future development, identifying areas of greater need or strategic priority for resource allocation, and developing timelines and action plans for the phased implementation of the over-arching education sector plan goals. Secondly it acts as a monitoring and evaluation mechanism that enables planners and policy makers to assess how well the education sector plan is achieving its stated goals. As a monitoring and evaluation mechanism, education sector data provide a means by which progress towards education sector plan goals can be measured. Effective strategies can be identified and replicated; unsuccessful interventions can be re-assessed and redirected. Finally, as a reporting and promotional tool, education sector data enable strategic planners to inform education sector stakeholders of the state and progress of Education sector plan implementation. Data can be used to promote and encourage community support for educational institutions.

For information to fulfill all of these important roles effectively, it needs to be based on good quality data. Quality data can be thought of as having three key attributes: accuracy, relevance and timeliness. With regard to maintaining of quality data; UNESCO (2000) emphasizes the importance of

improving educational management information system as one area of focal point for the Dakar framework for action to achieve EFA goals. The conference pointed out that getting reliable statistics, desegregated and based on accurate census data is essential if progress is to be properly measured, experiences to be shared, and lessons to be learned. In order this to happen, the conference indicated that governments should truly be committed to educational outcomes; recognize the importance of statistic and the need for credible and independent institution to produce them. The world education forum 2000 assessment identified the existence of data gaps. Hence, the participants reaffirmed the need to increase capacity to fill these gaps and to produce accurate and timely data at lower levels of the system both to identify areas of greatest inequity and to provide data for local level planning, management and evaluation.

In order to progress towards meeting EFA goals and targets, the conference also identified the need for better data available at national and international level which will allow governments, civil society and other agencies to gain a clearer understanding of progress towards the goals, to identify regions, countries and sub national levels where there is a particular success or difficulty and then to make appropriate action.

According to Addis Ababa Administration Educational Bureau's annual abstract (2006/07), the number of students entering the primary and secondary level education was increasing from year to year .The gross enrolment rate for primary cycle raised from 110 % in 1995 to 117.3% in 1998 and from 63% to 81.9% for the secondary cycle in the specified year. The increase in student enrolment implies complexity in management of the schools. In turn the complexity in management demands data and information which can support the education system. As information management is one of the managerial roles, the managers at all levels of

educational institution should have to strengthen the information system of the organization.

The Addis Ababa Administration Education Bureau produces Education Statistics-Annual Abstract every year. The sources of information for the abstract is yearly school censuses carried out by schools through standard questionnaires designed to collect data from each school. Education information unit in the Bureau compiles and sends the data to the Ministry of Education so that national figures are produced at national level. The annual abstract tries to provide detail information on different educational variables. It provides comprehensive information on annual performance of the overall city administration education with regard to Primary, Secondary and Technical Vocational Education and Training. Data on education budget is also included. The main purpose of the booklet is to provide relevant, reliable and up to date information on education. It can be used as a source of information for various stake holders in the education sector, especially for the purpose of research and planning.

1.2 .Statement of the Problem

Murdock and James (1988) have affirmed that the information explosion has profound impacts upon the complexity of management and organizations. As a decision maker, the manager is essentially a processor of information. The modern manager knows that the ability to obtain, store, process, retrieve, and display the right information for the right decision is vital. This is, after all, the basic reason for an information system. To remain ahead of competitors and to keep pace with the technological revolution and its impact on the organizations' services, the manager must keep abreast of selected information and organize it for decision making.

The collection, processing, management, utilizing and dissemination of data require systematic and skillful approach, because decisions are made based

on data. The accuracy and appropriateness of the information collected and analyzed plays a significant role in the utilization of data for planning and management. These days the management and planning of education information system demands more computer knowledge and professional training in Statistics and data analysis. In order to meet these demands, commitment from decision-makers is essential.

Maintaining quality data has been a global issue since recent time. As it is mentioned in the background of this chapter the importance of improving educational management information system was one area of focal point for the Dakar framework for action to achieve EFA goals. The conference pointed out that getting reliable data and information is essential if progress is to be properly measured. In order this to happen, the conference indicated that governments should truly be committed to educational outcomes; recognize the importance of statistic and the need for credible and independent institution to produce them. The world education forum 2000 assessment has also identified the existence of data gaps. Hence the participants reaffirmed the need to increase capacity to fill these gaps and to produce accurate and timely data at lower levels of the system both to identify areas of greatest inequity and to provide data for local level planning, management and evaluation.

With regard to the importance of educational information ESDP III (2005) state that the expansion of educational opportunities is the first priority to achieve universal primary education by 2015. The success of the governments' effort to expand access at every level depends on the accuracy of the information it receives from the system.

Addis Ababa Education Bureau Statistics-Annual Abstract provides educational information on annual performance of the overall city administration education with regard to primary, secondary and technical

vocational education and training. The yearly annual abstract is expected to provide relevant, reliable and up to date information on education. However, in the process of management and planning of information system, the following problems have been observed.

According to the MOE (2004), MDG goal 2 and 3 of the millennium declaration is to achieve primary education by 2015 for boys and girls and eliminate gender disparity in primary and secondary education; preferably by 2005.Net enrollment ratio is an indicator that measure performance or goal achievement. A good education indicator system is expected to provide accurate and precise information to illuminate the condition of education and contribute to its improvement. But as indicated in the Addis Ababa Educational Abstract of 1999 E.C (2006/07), primary education enrolment ratio of females for the year 1997 and 1998 E.C is 100.1%, 102.3%respectively.The net enrollment is normally calculated as the number of pupils in a given educational cycle expressed as a percentage of the population of related age. Therefore, in actual practice the number of pupils in the school system cannot exceed the number of the population.

It is important to keep in mind that the design, use and interpretation of indicators are an integral part of the information system. The use of educational indicators in the information system is a major input to planning, management and to the improvement of decision making. Thus the data in the abstract shows a picture that all school age children have access in primary education so the millennium development goal is achieved in Addis Ababa where the reality may not be true.

From personal observation of this researcher the trend of data dissemination actually occurs the year after the end of the next academic year. The previous year's education information is not yet produced. Instead of that the 2006/07(1999E.C) Education Abstract is used as a source of

information. People will need to know what information is available in order to know what they can ask for. Unless information is not released timely people will tend to make decisions based on intuition and experience. Timely released information encourages people to make use of the information based on information outputs.

The relevance of data is also another issue of the information system. The relevance of data for users is to suit the information needs of their intended audience. For example if somebody needs to obtain the number of kebele education offices in each sub city it would be difficult to get it in the abstract. Data of teachers' in their field of specialization and department is not available in the yearly abstract. If a manager wants to design training needs of teachers, or a researcher needs data for his research purpose he couldn't obtain the data easily from the abstract.

As it is indicated above the issue of education information system management is a global and national issue and it requires to be treated in appropriate manner. No study has been conducted in the planning and management of Addis Ababa education sector. Having this in mind, therefore, this study focuses on the planning and management of information system of the city Administration education sector. Thus the study tries to investigate how the process of planning, working and to point out possible solution to the problem.

1.3 Objective of the Study

1.3.1General objective

The general objective of the study was to assess the practices of the planning and management of education information systems at different hierarchies of Addis Abeba city Administration.

1.3.2 Specific Objectives

The specific objectives are

- To examine the management of education information system.
- To scrutinize the planning of education information system
- To observe the extent of education information utilization for planning and educational activities.
- To identify problems associated to data collection, analysis dissemination and utilization of information.
- To propose possible solutions to the problem.

Basic Questions

In order to achieve the stated objectives, and examine the status and the problems encountered in the management and planning education information system, the study will attempt to answer the following basic questions.

1. What are the current practices of planning educational information system for the sector?
2. What procedures are in place in the collection and dissemination of education information system in the sector?
3. To what extent is educational information utilized for the planning and management of educational activities?
4. To what extent are accurate, relevant and timely data disseminated to users of information?
5. Does the system have the manpower capable of doing the planning and management of education information system?
6. What are the major problems of planning and management of educational information systems and possible solutions?

1.4 Significance of the Problem

It is the information system that facilitates the communication flows needed to manage the educational activities. Education information system should

facilitate better communication and information dissemination within the education sector. In an effective information systems data collection, analysis and reporting processes work in a cycle to produce information in response to the needs of various stakeholders. Therefore, the study will have the following significance

1. The study may indicate ways for proper planning and management of educational information.
2. It may help authorities as to what measures should be taken to tackle the problems.
3. The study may help as the stepping stone for other researchers to undertake in depth investigation.

1.5 Delimitation of the Study

The study aimed to look into the planning and management of education management information system in Addis Ababa city administration. It was delimited to EMIS at education bureau level, and EMIS at some selected sub cities education offices, Kebele education offices, government primary and secondary schools in Addis Ababa city administration.

1.6 Limitation of the Study

This study would have achieved more information than the present had it not been for the limitation encountered during the study. The assignment of personnel and officials to new positions due to the occurrence of business process engineering was one of the limitations that the research failed to secure complete data. The other challenge was the occurrence of frequent meetings which hindered the officials not to be punctual to fill the questionnaire timely. In spite of this, however, the researcher attempted to make the study as complete as possible by using different instruments like document analysis.

1.7 Definition of Terms

Data	Unprocessed facts and figures (Plunkett Attner,1989)
Education Bureau	The top hierarchy of Addis Ababa city administration education sector
Education office	The educational offices starting from kebele up to education bureau
Information	Processed data (Plunket and Attner,1989)
Kebele	The lower level administration unit of Addis Ababa
Sub city	The middle level administration of Addis Ababa city administration
Primary Education	The lowest educational structure with eight years duration,offering basic and General Primary Education (ETP, 1994)
Secondary Education	Education structure with education consisting of 2 years of General Education and 2 years of Preparatory Education (ETP, 1994)

1.8 Organization of the study

The study comprises of five chapters. The first chapter deals with background to the problem, objectives of the study, significance of the study, delimitation, limitation of the study , definition of terms, and organization of the study. The second chapter focuses on the literature review having to do with planning and management of EMIS The third chapter deals with research methodology and procedure of the study. The fourth chapter presents analysis and interpretation of data. The last chapter presents summary of the findings, conclusions and recommendations.

CHAPTER TWO

2. Review of Related Literature

2.1 Overview of Information and Information Systems in Education

2.1.1 What is Information?

All organizations, whatever they might be, should produce information to inform on their operation and their results. The lack of information or poor quality of available information is a serious problem to organizational development. Sound decisions in organizations are impossible without useful information. Therefore, it is imperative to understand what information is and why it is used.

According to Davis and Olson (1985) information is data that has been processed into a form that is meaningful to the recipient and is of real or perceived value in current or prospective actions or decisions. The relation of data to information is that of raw material to finished product.

The importance of information is emphasized by different authorities. Among them O'Brien (1990) state that information is knowledge of a particular fact, event or situation and it is a basic resource in today's society. We are living in an information society whose economy is heavily dependent on the creation, management, and distribution of information resources. Information then is a valuable commodity to knowledge society. Scott (1986) also affirmed that information is similar to other resources in that it has a cost and a return on investment and failure to acquire it or to use it properly involves an opportunity cost. Without information, no system can function rationally, and as a result no operational decision can be taken.

Similarly, the significance of educational information has been acknowledged. In connection to this, Cassidy (2006) state that information is used to describe the education system accurately, to monitor the attainment of goals and objectives across the education system, to support the effective and efficient allocation of resources, to monitor and evaluate the impacts of priority education policies and programs, to assess the overall effectiveness and efficiency of the education system and to assure the delivery and achievement of quality education for all.

As Carrizo, Sauvageot, & Bella (2003) rightly demonstrate information is used for strategic planning in three main ways. First, it acts as a diagnostic tool that forms the basis of plan development. Secondly; it acts as a monitoring and evaluation mechanism that enables planners and policy makers to assess how well the education sector planning is achieving its stated goals. Finally, Information is the basis for communicating education sector needs, achievements and development to stakeholders.

Utilization of information is determined by level of decision-making. Pearce and Robinson (1989) acknowledge that at strategic management level, managers need information to plan and make decisions about the long-term direction. Information needs at this level are complex, non routine, and oriented toward the future. Information needs at the division/unit management level are concerned with guiding, controlling and ensuring the effectiveness of subunits within the organization. Managers at the operational level are concerned with the day to day execution of the tasks within their area of responsibility. Information is used most heavily at strategic level, less at the division/unit level, and least at the operational level.

The same is true for education that different actors have varied information needs which the information system should take into account and respond

to appropriately. For example, while the pupil is in a context the information needed is about the content of education and methods of evaluation, the teacher will more likely be concerned with information of a pedagogical nature such as the curriculum, etc.

2.1.2 Education Management Information System

For information to be handled properly a management information system structure should be in place. An information system includes all of the people, computer applications and other communications technology, processes, policies and procedures involved in making sure that the right information flows to people who make decisions and take action.

According to UNESCO (2001), EMIS is a formal, institutionalized system of collection, storage, processing, and analysis of quantitative information concerning a wide range of aspects of the functioning of the education system. It provides educational managers, at central, provincial, district and other relevant levels, with reliable and timely information. EMIS is a major data and information source for education planning and monitoring of plan implementation, as well as for budget preparation and expenditure control. EMIS is institutionalized, being a permanent function of sector management. It is a network of data collection, storage and analysis units which are situated at all levels of sector management (all the way from school, via local levels, to the Ministry).

EMIS is a system for processing information that can be utilized during the planning, management and monitoring and evaluation of education. According to Cassidy (2006), an EMIS is a system for the collection, integration, processing, maintenance and dissemination of data and information to support decision making, policy-analysis and formulation, planning, monitoring and management at all levels of an education system.

It is a system of people, technology, models, methods, processes, procedures, rules and regulations that function together to provide education leaders, decision makers and managers at all levels with a comprehensive, integrated set of relevant, reliable, and timely data and information to support them in completion of their responsibilities. Thus, an education information system is also a set of formalized and integrated operational processes, procedures, and cooperative agreements by which data and information about schools and schooling, such as facilities, teachers, students, learning activities, and evaluative outputs, are regularly shared, integrated, analyzed, and disseminated for educational decision use at each level of the educational hierarchy.

EMIS therefore, shows two fundamental features of information system. First, it is about much more than simply technology. While computer application can make the job on education sector data much easier, it cannot function effectively without well-informed people and well-structured processes around it. Secondly, a good information system is about effective communication and information flows.

2.2 Objectives of Education Management Information System

The main objective of EMIS is to collect, analyze and provide timely data on the educational system to improve planning, resource allocation, monitoring, policy formation and decision making. Improving the performance of an organization is the ultimate objective of management information systems. Information system can best improve an organization's performance by helping improve the quality of managerial decision.

According to Carrizo, Sauvageot and Bella (2003), the major objective of an information system is to contribute to user output by providing timely information for use in managerial decision making and control. An EMIS

therefore, should generate information for users such as management and administration, research and planning, monitoring and evaluation and to all decision-making levels of the education system. Information is collected in order to manage and keep the education system in check, for the definition of priorities, the planning and formulation of policies, and for the follow-up and evaluation.

Thus, the main purpose of an educational management information system is to integrate all information resources (raw data) related to the planning and management of educational activities, and present them in a comprehensive and concise way to the user.

2.2.1 Management and Administration of the Education System

The first aim of an education management information system is to help manage and administer the education system. EMIS helps the management system of education with necessary information for the planning and improvement of the system.

In relation to this Davis and Olson (1985) state that management information is required by managers to measure performance, decide on control actions, formulate new decision rules to be applied by operational personnel, and allocate resources. Carrizo, et al.,(2003) state that EMIS supports the management to check whether the system have enough financial, physical and human resources to operate correctly and hence produce the expected results. The information generated by EMIS makes it possible to control and evaluate the internal and external efficiency of the education system. It is thus indispensable to ensure that the physical and financial resources invested in the system are not wasted but optimized in order to achieve better quality and efficiency in education and, that the results meet the wider needs of society.

There is an interdependent relationship between EMIS and the management system on which it relies. Haiyn and Herstein (2003) state that information-based decision making in the management of the education system has as its goal increased access, efficiency, effectiveness, equity, and quality of education through effective systems of monitoring and evaluation, budgeting and planning, policy research and analysis. Education management information systems enable these informed decisions to be made by providing necessary data and information and by fostering an environment in which the demand for this information drives its use. The production of educational data and information is a critical cornerstone on which this information-based decision-making framework is built.

2.2.2 Research and Planning of the Education System

One other major function of EMIS is to facilitate the detailed analysis and synthesis of relevant information to help in educational planning and policy decision-making. The preparation of an education plan is an exercise, which requires not only specific skills, but also the availability of reliable and relevant information, which reflects the exact situation of education in the country.

As Carrizo, et al.(2003) state, to analyze a situation or set up a diagnostic is a necessary and fundamental step in the planning process. For a plan to be effective, it should be based on a detailed and critical analysis of the situation, identifying the problems and causes, on which new policies and programmes to be implemented are supposed to act. Consequently, the choice in matters of education policy and planning should imperatively be made in the light of a solid information system which makes precise, relevant, reliable and updated information available to education managers and planners, and more conclusively for decision makers. Because of a

weak information system, most education planning efforts still have little impact and do not always guide the fulfillment of their objectives in an efficient way.

Within the framework of education planning, the information generated by EMIS is particularly useful for the establishment of the school map, which in turn will help in the collection and the production of information. The existence of an information system which functions correctly is a precondition to the school mapping.

2.2.3 Providing Relevant Information to all levels of Decision-making

Providing relevant information in accessible form to all levels of decision-making of the education system is one of the objectives of EMIS. The success in management may depend on the manager's ability to contribute to the effective design of information management systems that serve his needs at a reasonable cost. In relation to this Pearce and Robinson (1989) suggest that information requirements and the supporting data requirements are different for different level of managerial activity. Trying to satisfy all information requirements with one type of system is considered as misleading.

There are different levels at which managers need and use information. Pearce and Robinson (1989) pointed out, at strategic management level managers need information that helps them plan and make decisions about the long-term direction the organization will take. Information needs at the division/unit management level are concerned with guiding, controlling and ensuring the effectiveness of subunits within the organization. Managers at the operational level are concerned with the day today execution of the tasks within their area of responsibility. The quantity of data required decreases as the level of decision-making goes up, the information becoming more aggregated and synthesized; integrating all available data. Information is

used most heavily at strategic level, less at the division/unit level, and least at the operational level.

Likewise, in the education system there are three levels of data use, which correspond to the tasks and particular activities. The people belonging to higher level are responsible for strategic decisions concerning the planning of the whole of the education system. The intermediate level comprises decision-makers who are in charge of management and control of the allocation of resources, which translates the general objectives into more technical, operational decisions. It therefore requires more specific data to detect eventual malfunctions and to optimize the use of resources. The lowest level corresponds to operational tasks, and to more daily activities, closer to the school. The decision here has local and immediate reach and hence will require more detailed information. Thus, these three decision-making levels require distinct information. In summary, EMIS should provide relevant information to all levels of decision-making.

2.2.4 Monitoring and evaluation of the education system

Throughout the duration of the plan, it requires the availability of reliable and objective information on the way the policies and programmes are being implemented to detect possible pitfalls and obstacles, and consequently to rectify and reorient strategies. As stated by Carrizo, et al. (2003) the information system provides appropriate and objective information where we are in relation to the stated objectives and what the successes and the shortcomings are. The objectives set in 1990 during the Jomtien Conference aimed to universalize primary education and reduce by half the illiteracy rate of adults from 15 years and above by 2000 could be a good example in understanding the role of monitoring and evaluation. The information produced by EMIS should make it possible to judge whether the objective

have been attained or not. An efficient information system is indispensable in evaluating the progress and impact of these policies.

2.3 The Management of Education Information system

Management in this context means the organization of and control over the structure, processing and delivery of information. Information management is the collection and management of information from one or more sources and the distribution of that information to one or more users. In order for the manager to make information available he has to go through all stages of information processing, starting from identification of information needs up to publication and dissemination.

According to Murdock, Joel & James (1988), as a decision maker, the manager is essentially a processor of information. The modern manager knows that the ability to obtain, store, process, retrieve, and display the right information for the right decision is vital. This is, after all, the basic reason for an information system. The role of the manager is to coordinate, in an organized and systemic way, information necessary for educational planning, policy formulation, decision making and resource allocation.

With regard to this, Carrizo, et al.,(2003) state that information management is organizational responsibility that needs to be followed from the top level management to the front line worker. Organizations must be held and must hold its employees accountable to capture manage, store, preserve, and deliver information appropriately and responsibly. Accountability for EMIS can be considered from two perspectives: internal accountability and external accountability. Accountability within the organization can be created by establishing an EMIS organizational

structure with clearly defined responsibilities and policies to guide what data should be collected and what should be disseminated.

As Carrizo, et al.(2003) further state effective EMIS requires the collaboration of many individuals and units. A coordinating body, made up of representatives from as many stakeholder groups as possible, is needed to provide EMIS policy guidance and maximize its impact on the education system. Such an oversight committee should be made up of data providers, data users, information managers, researchers and policy makers. This includes input from policy-makers, researchers, donor partners, NGOs, government agencies, etc. Secondly they monitor the progress of data and information and address impediments to its free flow both into the EMIS and out of the EMIS and ensure that data is integrated successfully. Finally they promote and market data for use in the policy process.

The user of information should be the focus of EMIS management. In relation to this Tegene (2003) stated that there are internal and external users. Internal users are planners, decision makers, decision support systems, different departments and divisions of the organization. External users are other government and non government institutions, national and international organizations, donor agencies and civil societies. Therefore, it is important that all managers of EMIS perform should focus to users needs and expectations. It is that increased use of educational information that leads to increased informed use of information which again leads to increased level of informed decision making. In effective information system management, data collection, analysis and reporting processes work in a cycle to produce information in response to the needs of various stakeholders. Activities in EMIS follow a certain established steps. The procedure begins with an appraisal of the needs, followed by data processing, analysis, publication, and dissemination.

2.3.1 Planning Information Systems

Planning is one of the major responsibilities of managers at all levels of the organization. The planning function involves establishing goals and arranging them in logical order. It is deciding in advance what to do, how to do it, when to do it, and who should do it. The planning function provides a basis for managers to set and to achieve objectives and goals. When managers plan how they will go about collecting and processing education data they need to know how to structure their activities effectively.

UNESCO (2006) states that once the roles and responsibilities for data collection have been identified, it is important to determine the operational plan for data collection. Essentially this plan identifies the time period in which data activity take places and who is responsible for this process. Nevertheless, it will be important to determine the exact time period and format in which data needs to be produced, all of which provides the basis for working back and identifying when specific activities need to take place.

With regard to this Tegegne (2003) states that without proper planning we cannot do an efficient plan implementation or meet the target. Through planning, management determines a course of action for the Future. The planning function also determines the activities, personnel, and controls that are needed to implement a particular course of action. Planning is a management function, concerned with defining goals for future organizational performance and deciding on the tasks and resources to be used in order to attain those goals. The planning helps to achieve these goals or target by using the available time and resources. The objectives of education information system planning are to develop an EMIS strategic plan to ensure a successful implementation, and achieve high performance that is sustainable over time. Without planning, there are no criteria by which to measure individual, departmental, or organizational performance.

With regard to the planning process Carrizo, et al.,(2003) state that a necessary and fundamental step in the planning process is to set up a diagnostic or analyze the situation. In fact, how one could defines objectives; formulate policies and strategies without knowing the present and past situations. In other words, for a plan to be effective, it should be based on a detailed and critical analysis of the situation, identifying the problems and causes, on which new policies and programmes to be implemented are supposed to act. Consequently, the choice in matters of education policy and planning should imperatively be made in the light of a solid information system which makes precise, relevant, reliable and updated information available to education managers and planners, and more conclusively for decision makers.

Tegene (1989) states that planning for information systems, as for any other system, begins with the identification of needs. In order to be effective, response to need whether at the transaction processing level or at the more complex level is important. It is necessary for top management to have a clear perception of the roles of information system in the organization and articulate the mission of the information system function to information system management to enable them to plan accordingly. Inputs to information system planning come from users, top management, and the information system planning staff. They are collected through a series of interviews in the first phase of the planning process.

An information system represents a support service to the organization that owns and uses the data resources maintained by the system. In connection to this, Koory and Medley (1987) confirm that planning for information systems takes place as a component of the larger, organizational picture. Without a grasp of the overall goals of the organization, it is difficult for operational managers to direct the activities of their respective departments.

A very important fundamental concept of information system planning is that the organization's strategic plan should be the basis for the management information system strategic plan. A fundamental principle for the plan is that it should be derived from and conforms to the organization's plan.

In support of this idea, King (1988) state that the business mission, objectives, strategies, and plans of the organization provide the necessary background information to guide the information system strategic planning process. An evolving notion in this context is that this information flow need not necessarily be one-way, i.e. business plans providing inputs to information system Planning. There are many instances where organizations have evolved business strategies based on a reverse process in which strategic information system provide the basis for competitive advantage It is deciding future course of action from amongst alternatives. It is a process that involves making and evaluating each set of interrelated decisions.

A plan should be a realistic view of the expectations. Depending upon the activities, a plan can be long range, intermediate range or short range. It is the framework within which it must operate. For management seeking external support, the plan is the most important document and key to growth. Preparation of a comprehensive plan will not guarantee success, but lack of a sound plan will almost certainly ensure failure.

According to Davis and Olson (1985), the master plan of information system has two components; a long range plan for three to five years or longer and a short range plan for one year. The plan provides a basis for resource allocation and control. The long-range provides general guidelines for direction, and the short-range portion provides a basis for specific accountability as to operational and financial performance. The master development plan establishes a framework for all detailed information system planning. In general, it contains four major sections.

1. Information system goals, objectives and strategies
2 .Inventory of current capabilities.
3. Forecast of developments affecting the plan.
4. The specific plan.

With regard to the preparation of plan Tegene (2003) states that it is good to establish goals and objectives right at the beginning and he suggested that we need to identify what we want to achieve by engaging in strategic planning. Specifically we need to know what our vision is and where to reach; this is to be stated clearly in the plan document. The next step is to analyze feedback information taking into account the environmental conditions the context in which we develop our strategic plan. This is followed by analysis of the current state. This could be investigated in terms of manpower availability both in terms of quantity and quality. Available facilities (hardware, software, including networking facilities) finally Prepare detailed plan implementation program. This contains a list of activities, responsible person or group, time frame, expected output and cost estimate where applicable with each one clearly stated and documented.

Koory and Medley (1987) stated that developing and implementing effective plans require a team effort within an organization. The planning process is the core component of the system that converts the information inputs into a system of plans that provides strategic directions for the information system function. It is the process of analyzing, in the context of information systems, the external environment for opportunities and threats, assessing the internal environment for its strengths and weaknesses, forecasting the information system technology trends and their effects on the organization, identifying the users' information systems requirements, developing an information architecture, and finally developing a set of strategic programs and plans for effectively managing the information system function. The

quality of the planning process is reflected in the extent of detailed analysis of these planning dimensions.

2.3.2 The management of data collection

One of the first tasks for an EMIS manager is to identify what information is required by users to help them understand how education resources are transformed into educational outputs, particularly in relation to whether resources are being used efficiently or effectively in the education process

As UNESCO (2006) clearly states, managers must think about the needs of the end user and whether data will help analysts answer specific questions or understand specific processes. Stakeholders and end users of information should be involved in this process, not only as passive recipients for EMIS outputs, but also as owners of the process, to ensure that [process, efforts] support regularly (re)examined purposes.

The starting point for collecting new data is the design of the template or questionnaire. Unless the perspectives of schools are taken on board they are less likely to be committed to the data collection since they are unable to see the potential benefit. This bottom-up approach to data collection should be supported by other structures and institutions within the education system to ensure minimum standards are achieved.

The data collection process is determined by the information exchange between school record keepers and the upper level data collectors. The quality of data collected by educational information system tools is entirely dependent on the quality of data kept at schools. The school is the main source of data for education information system management functions.

With regard to this Tegene (2003) states that the way records are kept at school level have an effect on data collection. Record keeping at schools influences data accuracy, timeliness and relevance. If school records are well organized, the accuracy of survey completion is improved. If records are structured along similar lines to the survey instruments themselves then the available information at the school will be directly relevant to the information required by surveys. Well managed school records also assist with timely completion and return of surveys, because they make it an easy task each year to complete the surveys.

In connection to this, Carrizo, et al., (2003) pointed out the transmission of documents between the central administration and the schools should be as fast as possible. The questionnaires should be accompanied by precise instructions for completion. The updating of the list of schools is extremely important because it will guarantee the quality of the census. Once the questionnaires are filled in, the information should be transmitted as fast as possible to the regional service in charge of the school and of data collection. It is better to detect errors timely and ask for the quickest correction from the school. It is imperative that the schools that have not answered within the deadline be contacted again in order to arrange another date with them for the return of the documents. This follow-up work is absolutely essential and must start before the deadline for the return of the documents; preparation of the list of schools to follow-up on, and setting up of a fast communication channel with these schools.

2.3.3 Methods of Data Collection

There are methods available to gather information and a wide variety of information sources. Educational information can be collected in different ways but the collection process depends upon the kind of problem Carrizo, et al.,(2003) state that there are four ways that can be used in a well-organized data collection programme.

a) Annual census of all the education and administrative establishments. The method consists of sending a questionnaire to education establishments to obtain information on students and different personnel, on school-buildings and other facilities, on teaching materials and on financing.

b) Systematic transmission of gathered and assembled data for administrative needs .The administrative records constitute an essential source of information on elements as important as education financing and expenditures, salaries and qualifications of teachers, study grants, examination results, etc. Because education implies cost, its management therefore requires sufficiently detailed financial statistics to establish the budget and accounting.

c) Periodic or selective surveys based on a representative sample of schools: This method has significant advantages, one of which pertains to its cost, which is relatively lower compared to school censuses. Above all, it speeds up the availability of data: untimely data has been one of the weaknesses of information systems in a number of countries, hindering information from being used in planning and decision-making. Well designed and well-conducted surveys by sampling based on representative samples of schools, enable the collection of only a limited number of information. But because they show overall evolution, they can provide useful information for the definition of policies, and information almost as precise as those obtained through an exhaustive survey. Surveys by sampling in the field of education are therefore a means of completing information collected through annual census.

d) General population census or household surveys on questions other than those pertaining to education.

Carrizo, et al.,(2003) confirme that although the population census and 'household' surveys contribute important information to EMIS they are not in themselves part of EMIS. The different methods of collection mentioned are not all adapted to the types of information that one wishes to obtain. Thus, sample surveys, more than being a rapid way to make comprehensive information available, highlighting the major trends in enrolments, are very useful for collecting data necessary for some particular research studies concerning, for example, factors such as the causes of drop-outs and repetition, those preventing pupils from attending school regularly, the socio-economic origin of pupils, the professional expectations of school leavers, etc. By contrast, the global data on enrolments by gender, age and study year, on the number of teachers by level of education and qualification, etc., as well as on financing by level of education, type of programme or nature of expenditures, on other categories of personnel and on the infrastructure, must be collected in a regular manner by the census on all the education establishments.

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2.3.4 Sources and Types of EMIS data

Sources and types of information are numerous and vary widely in accuracy, coverage and consistency.

According to UNESCCO (2003), all major education service providers are potential sources for data and other internal information relevant to analysis and projections. They include Ministries of Education and financing or general education and affiliated bodies. Relevant information can also be found outside the Ministry of Education, for instance at the Ministries of Finance and Labor, the National Statistics Office, organizations of private education service providers (e.g. private universities), industry and employer organizations, and in some countries party and mass organizations holding responsibilities for education

administration. Different types of information are used and produced by education service providers at various administrative levels, such as schools and sub-national offices (e.g. district or provincial education offices, Office of the Governor, the provincial treasury, and local party committees). Easily available basic EFA data concern pupils, teachers and schools. They are produced by statistical units of the Education Ministry, local education offices, the EMIS unit, the National Statistical Office and the Planning Ministry. Some analytical data, such as indicators, are available in the EMIS unit.

According to UNESCO (2003), information can be classified as external or internal to the education system. External information concerns the environment of the education sector, which influences the structure, organization and performance of the sector. External information is usually produced by institutions and organizations outside the education sector (e.g. Ministry of Finance, Labor, Civil Service Commission, Statistics Office holding census population data, employer organizations, etc.).Typically, external information includes: demography and geography, economy, labour market, and social conditions. Internal information concerns the education system itself. It includes statistics on enrolments, teachers, infrastructure, teaching and learning materials, and equipment, budgets and expenditures.

2.3.5. Data Processing and Analysis

Data analysis is the stage that converts raw data into useful information products. The people, processes and technology involved in data analysis impact on the accuracy, relevance and timeliness of information in several ways.

In this connection Tegene (2003) states that analyzing data involves grouping and summarizing data as well as performing calculations on the data to produce statistics. If data are analyzed incorrectly using incorrect

formulas or inconsistent processes of categorization, the results that are reported will be defective. Data analysis processes will also affect the relevance of information being produced by ensuring that information reaches strategic planners and other sector stakeholders in formats that are meaningful and well targeted for different audiences. Analysis performed on data need to group and summarizes those data in response to stakeholders information needs. Thus data analysis should be done with users in mind.

As Tegene (2003) further states, information users are several types such as decision makers, planners, researchers, information service providers, students and teachers. Some users want to know just status. Other users' base decisions on the findings of the analysis and yet others use the information for planning and research purposes. Policy makers want the information to find out if the policy they are promoting has been achieved or not. Therefore, the type of analysis we make is often geared to the needs of different categories of users. Moreover, the type of analysis we make guides us to the type of report we are obliged to compile. An effective EMIS computer application also makes the task of data analysis easier and more efficient.

2.3.6 Reporting, Dissemination & Utilization of Information

The type of report needed may differ depending on the type of user that is obliged to serve. As stated by Tegene (2003), reports that meet the various information needs of many stakeholders are relevant. Some users are satisfied with the yearly abstract or quick book references of only numbers and some indicators. Others need detailed analysis. Some services given are as collaborative services. Therefore, it requires distinguishing who the users are. Moreover, it is always advisable to prepare a short report of the outcome for top decision makers. The objective is to reach all users as much as possible.

Even if data is collected and analyzed regularly, there is no guarantee that it will be used if the communication of the information fails. According to UNESCO (2006), dissemination refers to the action of distributing information using a variety of media, ranging from the traditional annual abstract of statistics to the use of the world-wide-web. Whereas utilization refers to how data is used in the policy process. Normally, the policy process consists of four inter-connected phases, including: the formulation of policies or targets, the monitoring of progress towards targets and the measuring of impact, and the formulation of adjusted or new policies. In many ways dissemination and utilization are closely linked, but the former is more concerned with the information needs of external users and the later with the information needs of internal users. Clearly, dissemination and utilization activities must fit into the data production cycle. In relation to this Tegene (2003) states that dissemination includes reporting to relevant clients within or outside the organization. Internally information will have to be disseminated to planners, decision makers, decision support systems, experts and educational administrators at all levels within the ministry of education including provinces, districts and schools. This is important because progress towards creating informed decision making environment can be effected and internal users will be aware of the importance and role of information in educational development.

As UNESCO (2006) states, one of the best means of supporting dissemination is to develop a dissemination strategy, which should identify the information requirements of the target audience, the medium in which the document needs to be produced (paper or electronic) and the time period in which circulation occurs. In relation to this Carrizo, et al., (2003) state that the information dissemination takes different forms according to the people they are addressed to and their needs. It could be done in the form of a short and synthesized information report. At the second level, the information is transmitted to a much larger circle of users in the education

system. Several communication reports can be used: a statistical yearbook on 'paper' and/or electronic support: CD-Rom or internet website. The mode of dissemination has to be developed as the access and use of these electronic tools develop. The yearbook has to include comments and brief analyses so as not to discourage the reader by the excess of tables. Whatever the communication mode chosen (yearbook, specific reports, or direct access), the disseminated information should always be accompanied by precise explanation on the data and the indicators used in order to further the best understanding possible, and of course, to avoid wrong interpretations.

The development of a comprehensive dissemination strategy is only part of the solution. Parents and external stakeholders should also be provided with EMIS data in a format that they can understand and be given training to act on this information. Trade unions and other civil society groups can play an important role in this process, especially with regard to using data to improve accountability and transparency in relation to how education resources are utilized. Only through supporting such activities it is possible to encourage an external demand for EMIS outputs.

UNESCO (2006) further states that within the education system it is important to ensure the demand for EMIS outputs are translated into utilization. There is little point in having a demand for information unless it is used in the policy process. One of the most important mechanisms for translating demand into utilization is to support institutional development and ensure that neighboring units within the ministry have the capacity to utilize EMIS outputs. For instance, planning units should understand how to use EMIS data in order to monitor the progress of policies towards defined objectives. Demand can also be translated into utilization lower down the education hierarchy through providing decentralized offices with the capacity to develop operational plans and by linking these plans to the

disbursement of funds. Utilization of information will also depend on whether end users have confidence in the data and do not resort to using other information sources to make decisions

Tegene (2003) affirms that awareness among users is the better way that leads to better planning, policy implementation and review. This is important in that the more they are aware of the role of information, the better the planning and decision making work in their respective organizations, sections and units. This also plays a feedback effect to the internal system and helps us to know what we have done well and where to correct problem.

2.3.7 Human Resource and Organizational Capacity

To enable and build an effective EMIS system and capacity, and to create a strong demand for using EMIS data and information, organizational capacity must be strengthened. It is essential to have qualified and trained staff to rely on. Part of the responsibility rests on the organizations themselves in training the employees to become familiar with the policies processes, technologies and best practices in information management.

According to Carrizo, et al.,(2003), at the regional level, statisticians capable of verifying and consolidating information coming from the education establishments, and of analyzing and disseminating them, are indispensable.. Training seminars for personnel should be organized in parallel with the setting up and the development of EMIS. For example, it is necessary to train the education establishments in the maintenance and regular updating of school files, school records and class records. Training should be periodically renewed to update the training and the qualification of particularly mobile administrative personnel. Staff mobility is frequent and is a constraint that should be imperatively taken into account in the setting up of EMIS.

In support of this Tegene (2003) states that to ensure record keeping systems developed for schools are used effectively, it is important to train teachers in their use. Similarly, when the school survey tool has been designed, a short training course in how to complete it should accompany its introduction to schools. Training minimizes the chance that the tools will be misinterpreted or misused. Training programs also create an opportunity to inform school-level data providers about the purpose of the data collection process and how the data they provide will be used. This will help to encourage ownership of the EMIS at the school level and gives data providers at `this level a better idea of the kind of information that can be available to them should they require it.

According to Carrizo, et al.,(2003), the central administration should manage the staff better by ensuring that 'memory and expertise' are not lost. Here also, because of the lack of attention to this type of risk, many information systems have disappeared. To reconstruct them requires an investment (human, material and time) that is far greater than having to ensure their continuity. It is an element that should seriously be taken into consideration. Of course, the training can remedy in part the lack of qualification of the personnel, but it cannot by itself fill very important qualification gaps. Some countries organize the mobility of qualified personnel between different ministries such as statisticians or computer specialists. This could temporarily resolve the qualification gap within the ministry of education.

2.3.8 Indicators for the Monitoring and Evaluation.

To establish indicators and to measure progress made towards educational objectives is one of the main activity of EMIS. Sets of indicators are essential elements to the education management information system. This means

that a good data collection tool needs to be accompanied by a set of relevant indicators to help guide and evaluate education policies.

According to Sauvageot (1997), an indicator may be defined as a tool that should make it possible both to have a sense of the state of an education system, and also report on that state to the whole of education community or to the whole of the country. A system of indicators should work like a control panel. It facilitates the identification of problems, and allows for their magnitude to be measured. In addition to providing a clear, relevant and simple description, indicators should measure events or changes of interest to the various agents of the education system. But then it is necessary that clear and measurable objectives for the education system be defined. In general, indicators play an important role in monitoring and evaluating the functioning of the education system.

Sauvageot (1997) further stated that the quality of EMIS will often be judged according to the indicators that will be produced on their reliability, relevance and capacity to evaluate and manage the education system as a whole. The list of indicators must be constructed with the close involvement of the various actors responsible for the preparation and implementation of education policy. This choice of indicators must be the subject of discussions among senior officials of all the units involved every administrative or geographic level (school, region, or the country as a whole) needs to have a set of indicators. But the list of indicators, as well as the needs for information, differs according to the level concerned. Of course a number of similar indicators can be found on the different lists drawn up by level, but, it is, for example, quite logical to find some indicators on daily management at the school level and few on planning, while at the national level, one would find all the indispensable indicators for the planning of the education system. In developing a set of indicators, it is important for all levels concerned to follow the same procedure, that is to establish the

education policy objectives that one wishes to manage or evaluate, draw from these objectives the most relevant indicators for this management and this evaluation and construct or complete the information system in order to make these indicators available.

In order to construct a good indicator, one has to be able to identify the most interesting phenomena to measure, on the country's choice, as inspired by the objectives of its educational policy. The relevance of some indicators is more universal, and also more descriptive, but in every case their importance will depend on the context. The enrollment rate at primary level is a good indicator. But when a country has full school attendance, it loses much of its importance

2.4 Major Factors affecting EMIS Development

An education management information system success depends upon certain factors. In relation to this Haiyan and Herstein (2003) point out, timely and reliable production of information, data Integration and effective use of information for educational policy decisions are major factors that determine the development of EMIS.

2.4.1 Timely and Reliable Production of Data and Information

Timely data is providing data and Information when or before it is needed. The timeliness of meeting these needs is critically important for the success of educational management information system development.

According to Plunkeet and Attner (1989), a management information system is a formal method of providing management with accurate and timely information so that managers can make decisions and carryout the managerial functions and operations effectively Scott (1986) states that a management information system must be designed to the required tolerances for timeliness, relevance, and accuracy of information. These

tolerances vary from task to task and from level to level within an organization. With respect to timeliness, for some tasks data may be gathered over long periods of time and transformed into information for managers only periodically or at irregular intervals; for other tasks information may be needed at regular intervals, but a lengthy grace period may be allowed before it is reported after the end of the period. For still other tasks information is needed as quickly as possible after the close of the period and for many tasks information must be available during the period when it is generated or even as a transaction occurs.

The more accurate the information the higher the quality and the more securely managers can rely on it when making decisions. Providing timely data requires coordinating data collection, processing, and dissemination system with annual administrative, management and decision making cycles. Stoner (1992) suggests that the value of information depends on for factors, its quality, timeliness, quantity and relevance to management ability to take action. In support of this idea Griffin (2000) states that information to be useful should be accurate, timely, complete and relevant. For information to be of real value to a manager, it must be accurate. Accuracy means that the information must provide a valid and reliable reflection of reality. Timely information needs to be available in time for appropriate managerial action. Information must tell a complete story for it to be useful to a manager. If it is less than complete, the manager is likely to get an inaccurate or distorted picture of reality. Information must be relevant if it is to be useful .Relevance is defined according to the needs and circumstances of a particular manager.

According to Haiyan and Herstein (2003), timely production of data and information requires that there should be a shared understanding by all potential data and information producers, users, or clients. Educational management information system data produced regularly must meet the

needs of overall educational planning ,educational services, such as the Logistics Unit and other units of school supplies, educational monitoring and evaluation, and policy research and guidance in a timely fashion and international collaboration and communication. The timeliness of meeting these needs is critically important for the success of EMIS development. Obsolete data, even after produced, may not have much value for use, resulting in missed intervention opportunities and a pervasive distrust from information clients within or outside the organization.

Management information system should provide only relevant information. The management information system must be flexibly structured to quickly supply whatever information appears to be needed for special problems. An information system must be accurate with respect to consistency of information provided by its different parts. If its different systems provide conflicting information, users' confidence in the system may be adversely affected. A management information system should provide feedback about its efficiency and effectiveness. To a great extent, feedback about effectiveness must come from participants in the management information system. It must also be able to adopt in response to feedback about its performance.

2.4.2 Data Integration and Data Sharing Among Departments

A comprehensive educational information system provides access to quantitative and qualitative data; to data on inputs, processes, and outputs; and to data on students, teachers, facilities, examination results, expenditures, etc. Integration refers to the importance of compatibility of data from one source with data from other sources; i.e., that data elements of one type from one source can be easily linked with data of other types from other sources.

According to Haiyan and Herstein (2003), data integration is one of the most important EMIS development strategies. It means that data from multiple sources (payroll, achievement, and school census), multiple years, and multiple levels (student, teacher, or school level) can be linked, integrated, or merged. Without such systems, there would be no answers to policy inquiries such as: How much do teacher qualification and salary contribute to student learning achievement, given that the school environment and resource allocation are identical. What is the impact of a new teacher-training program or a new curriculum on student learning achievement? Clearly, we must integrate the data from multiple sources so that we can conduct the right data analysis to answer the right policy questions. Multi-level data from multiple sources and years, once centrally integrated and organized, could have a tremendous value for policy-relevant research and analysis and improvement in education management.

2.4.3 Effective Use of Data & Information for Policy Decisions

One of the most critical factors that contribute to the success of the EMIS development is an institutional culture of making policy decisions based on data and information. According to Haiyan and Herstein (2003), this culture is a user-demand-enabling environment under which the policy research and analysis capacity can be built, strengthened, and further developed. Policy makers, planners, policy analysts, and other high stakeholders are the users of the data and information. The demand for using data and information should stimulate and nurture the healthy development of an information-based decision-making culture and the EMIS system. Often, the institutional demand for use of data and information is translated into or demonstrated by the capacity of the Monitoring and Evaluation Unit, Policy Research and Analysis Unit, and Budgeting and Planning Unit within the Ministry. A weak capacity in any of these management units would exert a negative impact on EMIS development.

2.5 Lessons and Good Practice

We can learn Lessons about the management and operation of EMIS in, Ghana, Obviously, the context in which EMIS operate will shape the type of problems experienced. However, what is more important is how they respond to such problems and what lessons can be gained from the comparative experience of this country. Regardless of Challenges remain for successful implementation, particularly in commitment, capacity development and dissemination, EMIS in Ghana provides a number of important policy lessons for other countries who are embarking on the process of decentralizing their educational system As Addis Ababa is one of the decentralized administration cities in Ethiopia the Ghana's decentralized education management information system could be an example of good practice

2.5.1 The management of EMIS in Ghana

According to Trucano (2006), initial collection helped support the formulation of the country's national education policy. More recently, attempts have been made to align the policy of decentralization with the collection and analysis of education data at the district level. Within this process EMIS is being used to help construct their operational plans and develop budgets for implementation. By providing reliable and accurate data it is anticipated that EMIS will play an important role in the decentralization process by helping to ensure that education provision becomes more efficient and responsive to local needs. However, the gap between planning and implementation, or theory and practice, is very large and there is evidence to suggest that the EMIS system is characterized by a number of systemic and capacity issues.

An equally important part of managing EMIS concerns how the information is disseminated. There is a lot of useful information but no strategy has been developed for dissemination. Dissemination of information remains

limited, central government being the main user. Information is available for other stakeholders but not in readily utilized formats. For data on pre-tertiary education there are no incentives exist for other stakeholders to make use of EMIS outputs. There are no comprehensive strategies for disseminating EMIS outputs and the only mediums using such data are: (i) an annual digest of statistics, (ii) an electronic copy of the digest of statistics and (iii) the education sector performance report. However the annual digest of statistics has not been widely distributed to stakeholders. Moreover, it has limited value since it contains raw data and no analysis has been conducted of trends over time. Therefore, it would not be possible to compare district performance or identify progress towards specific targets. In theory, the electronic copy of the digest of statistics is a much better idea. This could have enabled districts to have a copy of the data for purposes of planning. However, the information on the CD was recorded on PDF format and so district offices were not able to perform their own analysis.

2.5.2 Lessons learned

EMIS plays an important role in policy formulation, operational planning and subsequent monitoring of targets through periodic review. The utilization of data occurs in the formulation of polices, the monitoring of progress towards targets and the measuring of impact. At the national level the EMIS unit plays an important role in helping the Ministry to formulate operational plans and also monitor progress towards achieving such plans. There are a number of stages to this process, each of which is heavily dependent on EMIS data. Prior to the preparation of the annual operational plan a preliminary sector performance report is produced and a review meeting is held in order to obtain inputs from stakeholders and donors. This results in a series of recommendations which are feedback into the operational plan.

Moreover, in Ghana the EMIS is also beginning to play an important role in supporting the process of decentralization. The outputs from the EMIS are being used to support the development of operational plans and budgets at the district level. It is hoped that this will help improve operational efficiency, promote responsiveness and improve service delivery. Under these changes district offices have more autonomy in developing their plans, as well as some discretion over spending their annual budgets were being used in the policy process, although with varying degrees of success.

There was also a general trend for EMIS to play an increasingly important role in supporting the process of education decentralization by providing information to help state, provincial and district offices to formulate operational plans and in some cases develop annual budgets to fund their implementation. Evidence from Ghana demonstrates the important role EMIS can play in supporting operational planning at the national and district levels

The majority of technical problems associated with data collection appear to originate from the design of the data collection instruments and the processes associated with their implementation. One of the most common instruments for data collection consisted of a census form, varying in length from 10 to 20 pages. These are normally administered from a central or regional office and involve asking the head teacher a series of questions. However, the research found that in Ghana, lack of compatibility between census forms and school record keeping prevented head teachers from responding to requests from provincial offices or ministries. Even when information was available the head-teacher would have to undertake complex calculations in order to produce data in a format required by the census form.

The information management processes especially the collection and analysis of education data is decentralized at the district level, with the centre taking on support and quality assurance roles. There is an active involvement of district offices in the development, distribution and analysis of information collected using the census questionnaire. This created a sense of ownership on the part of district offices and enabled them to determine some of the question asked in the census and to also start using the data for their own planning processes.

Information problem experienced related to the length of the time period between the initial data collection activities and the publication of final results. A combination of factors can account for this delay, but the most significant appears to relate to the lack of commitment from those involved in the data collection, or due to the bureaucratic procedures that are supposed to support this process. In the majority of circumstances lack of commitment stems from the fact that those involved in data collection do not see how they can benefit from this process.

The education sub sectors are in the stages of reform that they are creating mechanism to develop their management of information. Non-formal Education division has developed systems and procedures to help monitor progress towards predefined targets and also to reward providers who achieve such targets. The National Council for Tertiary Education also collects, collates and analyses data from universities and polytechnics, all of which is used to calculate funding levels for the sector. The country's technical and vocational education and training sector is in the stages of reform and the National Coordinating Committee for TVET has developed a census form to gather information about the sector. As a result of these various educational reforms the EMIS unit is also in the process of transformation, reflecting its new functions. Under these proposed changes an EMIS management committee will be established within the Ministry and

this will contain representatives from different operational units. This will help improve coordination of data provision and subsequent dissemination.

The whole process of data collection has a number of checks and balances in order to ensure that data are reliable and valid. The head teacher of each school completes three census questionnaires. This process ensures that a number of checks occur at each stage of the process and ensures that the correct data is entered onto the forms by schools.

The census questionnaire was piloted in a number of districts to find out what changes needed to occur to the survey instruments for the main census. The pilot revealed that there were problems with instructions contained within the questionnaire. These were changed for the main census.

Prior to the enhancement and expansion programme the questionnaire was developed by officials at headquarters and administered by central office and distributed to schools through the district offices. Those working at the district offices and schools just viewed the whole process as an administrative exercise imposed by head office.

There was no strategy that has been developed for dissemination. Dissemination of information remains limited, central government being the main user. Information is available for other stakeholders but not in readily utilized formats. There was an attempt to produce census data in an electronic format and distribute this to the stakeholders.

Another important dimension of dissemination concerns the degree to which stakeholders and people external to the education system can utilize this data. Unfortunately, there was no concrete evidence on the external utilization of data. However, in Ghana there were plans to involve the media

in future dissemination activities, but once again only time will tell if these plans are ever implemented. The lessons from dissemination are not encouraging. Without a wide-spread dissemination strategy it is not possible to start creating an external demand for EMIS outputs. It is important that Ministries identify the target groups for dissemination, determine in what format data should be produced and the time period in which it should distributed.

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Utilization of EMIS data, one of the important messages to emerge from the experience is the need to ensure close links between data collection and utilization, unless managers at the decentralized level can see the utility of data they are collecting, they are not likely to be committed to this process. Linking operational plans to budgets can also encourage utilization of EMIS data. Not only does this ensure managers at decentralized levels appreciate the importance of using EMIS data to formulate strategies, it also provides a mechanism for linking plans to local needs. The evidence in this section also pointed to the important facilitation role played by the Ministry in supporting the collection and utilization of data at the state level. This provides states and districts with the technical knowledge to determine what data is collected and to a limited extent how it is used, as opposed to having a top down approach imposed by head office. Only through adopting such an approach is it possible to ensure that different layers of the education system have a sense of ownership and commitment to using EMIS outputs in the policy process.

CHAPTER THREE

3. The Research Design and Methodology

This part of the report presents the research design and methodology employed accordingly the method of research, source of data ,sample population and sampling techniques, instrument and procedures of data collection and methods of data analysis are entertained.

3.1 Research method

The descriptive survey research method was employed to study the problem. According to Keeves (1990), descriptive method of research is a fact finding study with adequate and accurate interpretation of the findings. It describes with emphasis what actually exist such as current conditions, practices, situations or any phenomena. Besides, descriptive method helps to draw valid general conclusions. Particularly, descriptive survey research method is one which is commonly used in educational research. Since this study was concerned with current practices of management and planning of information systems in education sector the use of descriptive method to identify what is on the ground and interpreting and reveals problems or abnormal conditions was indispensable.

3.2 Source of data

Both primary and secondary data sources were employed in the study. The primary data were collected from city administration education bureau, sub city and kebele education offices, process owners, team leaders, experts, primary and secondary school principals and record officers.

The secondary data were obtained from documents like the Education Statistics Annual Abstracts published by the Addis Ababa City Administration Education Bureau, and annual Abstract of the Ministry of

Education, plan documents, reports, etc. masters' thesis and books and internet sources were also used as secondary sources.

3.3 Sampling Techniques

In Addis Ababa City Administration, there were 10 sub city education offices, 99 kebele education offices, 46 governmental secondary schools and 106 primary schools and 1 education bureau. Since this study was concerned with education information planning and management, the target/study populations were those dealing with this area. Because principals, record officers, educational officials, plan experts were dealing in the management and planning of educational management they were taken as the major sources of information.

Table1 Sample Schools, Offices and Respondents Taken in the Study

Organization	Responsibility	Population	Sample	%
Addis Abeba Education Bureau	Officials/Process owner	12	12	100
	Plan experts	4	4	100
Sub city Education offices	Officials/ leaders	40	16	40
	Plan experts	10	4	40
Kebele Education offices	Leaders	99	20	20
Secondary schools	Principals	62	18	29
	Record officers	67	18	27
Primary schools	Principals	145	42	29
	Record officers	106	21	20
Total		545	155	30

The first step in the sampling process was to determine the sample size. As can be seen from the above table out of 545 total populations a sample of 155 (30%) was taken. Due to the nature of the population understudy, different sampling techniques namely multistage, simple random sampling and purposive sampling were employed.

The first stage in the sampling process was to determine the respondents group and size from Addis Ababa education bureau. Accordingly, 12 officials and 4 experts were selected using purposeful sampling method. These groups were selected purposefully by the virtue of their position and roles in the planning and management of information system. At the same time these groups are the one with better knowledge as compared to others who were working in educational institution and could provide pertinent information in the subject understudy.

The second stage of sampling was the sub city education offices. As there were ten sub cities in the city administration it would be difficult to include all in the sample in terms of time and cost. Thus, using simple random sampling method four (forty percent) were selected. The selected sub cities were Addis Ketema, Ledeta, Arada and Gulele. From these sub cities the actual respondents to the study were selected using purposive sampling, because respondents should be those dealing with information management. From each of the sub cities 4 officials and 1 plan expert were drawn. Thus, from the four sub cities 16 officials and 4 plan experts were selected.

The third stage of sampling was kebele education offices. Taking 5 kebeles from each of the four already selected sub cities a total of 20 kebeles were selected using simple random sampling method. Respondents were selected using purposeful sampling; one respondent from each of the kebele was

drawn. Purposeful sampling was used, because those included in the study must be from those who have knowledge of the subject understudy.

The final sampling stage was school. The same sampling procedure was followed to select schools. Out of the schools within the selected four sub cities 18 secondary schools and 21 primary schools were selected using simple random sampling method. To select respondents from the schools, purposeful sampling method was employed. This sampling technique was selected because it allows to obtain information from those who are concerned in the information management. Thus, from secondary schools 18 record officers and 18 principals and from primary schools 42 principals and 21 record officers were drawn.

3.4 Data gathering Tools

The data collection instruments used to collect relevant information were questionnaire; interview, documents and observation checklist.

Questionnaire with both close and open ended items were used to collect relevant information. This was so because the respondents were principals, record officers, experts and heads of the respective institutions and so they were very literate. They could read and answer the questions with ease. Besides, a questionnaire is not only better to secure factual information about opinions and views but also serves as an appropriate instrument to obtain a variety of opinions within a relatively short period of time. The open ended Question items were few in number, because this instrument was used for in-depth studies. The closed ended questions were used in order to obtain factual data. Two sets of questionnaires were administered to collect data from record officers and principals at school level, officials and experts at education office level.

Apart from the data obtained from the questionnaire, an interview was employed as an instrument for collecting pertinent information for the study. For qualitative and in depth information, interviews were held with key educational officials. This instrument was selected because, it would help the researcher to gain more complete and valid information from people who have knowledge of the problem understudy. It would also enable the researcher to derive questions immediately from the responses given from the interviewee. A contact summary form was used to record the information associated with each contact made in the collection of data, interview made with experts and head of education bureaus.

In addition to the questionnaire and interview, observation was conducted to gather data. Observation data gathering method was used to supplement or verify information gathered by questionnaire and interview. This instrument was used to look at things like the timing of information dissemination, because the researcher works closely to the education bureau and knew the things going on. Moreover, for issues that require more clarification and additional information checklists have been used. furthermore relevant documents were analyzed to support data from other sources.

3.5 Procedure of data collection

After the preparation of the questionnaire, the questionnaires were given to experts working in the education information system unit of the Ministry of Education. They were consulted to assess, review and make judgments concerning how well the items in the questionnaires represent the intended content area. They were asked if all the items were clear to them, if the number of items were adequate enough to collect data about all aspects of information planning and management; if all the items were objective and not biased except for a few unavoidable essay questions; if the questions were interesting not boring. They commented that some questions were not

clear and some of them were overlapping questions. Then those commented items were revised. And finally it was submitted to the advisor and based on the comments given modification was made. Before the main study a pilot test was carried out in a high school, two elementary schools and in a sub city education office. To this effect the data collection has been carried out after checking the appropriateness of the instrument.

After this process was completed the objective of the study was put in clear and understandable statement in order to avoid confusion. More over, assistance of friends for the distribution and collection of questionnaire was partly involved. Questionnaires were then distributed personally by the researcher and by the help of some friends to the sample respondents. After distributing the questionnaire, the interview time was arranged with education bureau plan and budget work process head and experts, and interview was conducted. After a few days, the distributed questionnaires were retrieved in the same manner as the distribution. Out of 155 total questionnaires distributed, 132 (84%) of them returned with responses. Out of 96 questionnaires distributed to schools, 80 (83%) were returned and out of 61 questionnaires distributed to education offices 52(85%) were returned. After the collection of questionnaires, the next task was the data analysis. This was done by the help of computer. To eliminate errors made by respondents a check was needed to be made about the completeness, accuracy and uniformity.

The data collected through questionnaires and interviews, was summarized and put into appropriate tables for presentation. It was from these tables the analysis and interpretation of data followed.

3.6 Method of Data Analysis.

The analysis of data collected passes through different stages. The data gathered by the help of various instruments were analyzed quantitatively and qualitatively.

The responses given to closed ended items of the questionnaire were tallied and converted into frequency, percentage and mean and then categorized and tabulated. The statistical tools to be used on certain variables such as age and educational level frequency counts with their frequency percents were used. When the variables were not counted such as adequacy, efficiency, extent, seriousness of the problem and normal, or average was needed to be known mean was computed. The quantitative data were presented in tables and analyzed using frequency, percentage, mean and grand mean.

The data collected through interview, open ended questions and documents were analyzed qualitatively by descriptive statement. The primary task was data reduction that was coding the interview record. To code evidence obtained by these data collection procedures the use of numerical classification system was used. Opinion differences were treated by analyzing interview responses. The researcher tried to integrate interview responses with that of questionnaire responses.

CHAPTER FOUR

4. Presentation, Analysis and Interpretation of Data

The fourth chapter of the thesis is divided into two main parts. Accordingly; the first one deals with the general characteristics of the respondents and the second one is about the analysis of the planning and management of information system. The respondents were experts, principals and process owners of the education offices and schools in AA.

4.1 Characteristics of the Respondents.

The major categories of respondents involved in this study were two, namely; experts and officials working at the education offices and principals and record officers working at school level. Most of the questions were common to both types of respondents except few questions specific to their types. The researcher believes that the respondents have direct relationship with the matters understudy and as a result they were considered to be relevant as main source of information for the study. By describing the characteristics of the respondents, it is possible to know some background information about the sample population participated in the study. Thus in this sub topic, the sex, qualification and years of experience subject specialization of the respondents are summarized as follows

Table 2 Respondents' Sex by Education Offices and schools

Sex	Educational offices			Schools		Total
	Bureau	KifleKetema	Kebele	Secondary	Primary	
Male	8	12	13	15	27	75
Female	4	8	7	14	24	57
GPI	0.5	0.7	0.5	0.93	0.88	0.76

(Parity index 1 indicates female = male)

The general information of respondents was analyzed. As it is indicated in the table, the gender parity index of respondent's fall within 0.5 - 0.93 and the aggregate parity index was 0.76. The gender parity index for sub city was 0.7 and bureau and kebele was 0.7. The gender parity index for secondary and primary schools was 0.93 and 0.88 respectively. When gender parity index equals to one it indicates female participation is the same as men. From this one can conclude, although participation of women was relatively better at school level, that their participation in decision making and information related activities was lower at education office level. This might have occurred due to social, cultural and political factors imposed on females.

Table3: Distribution of respondents by Educational Qualification and Work Responsibility

Item No	Qualification	Work responsibility					Total
		School principals	Record officers	Team leaders	Experts	Process owners	
1	Secondary school completers		8				8
			6.1%				6.1%
2	TTI		11				11
			8.3 %				8.3%
3	College diploma	35	12				47
		26.5%	9.1%				35.6%
4	BA/BSC	14		20	19	6	59
		10.6%		15.2%	14.4	4.5%	44.7%
5	MA/MSC				5	2	7
					3.8%	1.5%	5.3%
Total		49	31	20	24	8	132
		37.1%	23.5%	15.2%	18.2%	6.1%	100%

Of the 132 respondents, 59 (44.7%) earned BA/BSC and 7(5.3%) earned MA/MSC. Others, 47(35.6%) were college diploma holders, 11(8.3%) have

earned TTI certificate. The remaining 8 (6.1 %) were secondary school completers.

As can be seen from the above table, all and some of the team leaders, experts, and process owners have completed undergraduate and postgraduate studies. At school level, record officers, the main actors in the management of educational information were 12th grade completers and TTI certificate holders and a maximum of college diploma holders. Other things being equal, personnel with higher educational level are assumed to have better capacity of managing and prepare EMIS planning. This implies record officers which were assigned to perform educational information were from lower educational background and lacks capacity to perform their duties. This in turn may affect the process of information management activity and lead to poor quality data /information production.

Table 4 Distribution of Respondents by Subject Specialization

Item No	Work responsibility	Subject specialization					*Total*
		IT	**Statistics**	**Maths**	**EDPM**	**Others**	
1	School principals			1	15	33	49
	%within work responsibility			2.0%	30.6%	67.3%	100.0%
2	Record officers					31	31
	%within work responsibility					100.0%	100.0%
3	Team leaders			3	7	10	20
	%within work responsibility			15.0%	35.0%	50.0%	100.0%
4	Process owners				6	2	8
	%within work responsibility				75.0%	25..0%	100.0%
5	Experts	1	1		11	11	24
	%within work responsibility	4.2%	4.2%		45.8%	45.8%	100.0%
	Total	1	1	4	39	87	132
		0.75%	0.75%	3%	29.5%	65.9%	100%

With regard to subject specialization, out of 20 team leaders 10(50%) and from 8 process owners 6 (75%) have qualification related to the area of work. Out of 49 school principals 15(30.6%) were trained in the position they held currently. Of the experts 11 (45.8%) were educational planning and management graduates and 2 (8.4%) were IT and statistics. As can be seen in the table, none of the record officers working were trained in the area they work.

From this one can understand, all of the personnel working in information processing activities at school level and the majority of personnel at the higher hierarchy of the system were working with out having the necessary knowledge for the position they held. This might occur as a result of when assigning personnel of educational information system, their subject of specialization was not considered.

Table 5 Distribution of Respondents by Work Experience in the Present Position

No	Work responsibility	Service year in the present position				Total
		1-3	4 -6	7-9	10& above	
1	School principals	25	17	6	1	49
2	Record officers	8	18	4	1	31
3	Process owners	1	4	3	-	8
4	Experts	24	-	-	-	24
5	Team leaders	6	14	-	-	20
Total		64 48.48%	53 40.15%	13 9.84%	2 1.51%	132 100%

As to the work experience related to the present position of the respondents 64 (48.48%) fall below 3 years. The other 53(40.15%) were in the service category of 4 -6, and 13 (9.84%) were in the category of 7-9, the other 2 (1.51%) were in the category of 10 & above. Most of the respondents

64(48.48%) had service of 3 & below in the position they were engaged. This shows that the majority of principals, officials, record officers and experts served for few years in the position they held. This distribution of service might show that personnel working in EMIS had no adequate experience in planning and management of information. The reason could be due to transfer and turnover.

4 2 Analysis of Planning and Management of Information System

As clearly indicated in the literature, management of EMIS is concerned with the control over the structure, processing and delivery of information. Information management is the collection and management of information from one or more sources and the distribution of that information to one or more users. As planning is one aspect of management, it is one of the major responsibilities of managers at all levels of the organization. In relation to planning and management of information system Thus the whole part of the analysis is concerned with planning and management of EMIS in the Addis Ababa city administration.

4.2.1 Utilization of information

To secure information on the extent of utilization of educational information, the researcher organized the issue into three thematic areas, namely purpose of educational information, demand of information and type of information requested. Respondents were asked to respond on the given questions and organized it in the following three tables.

Table 6 Distribution of the Responses on the Purpose of Educational Information

No	Purposes of information	Mean		*Grand mean*
		Schools	**Education offices**	
1	Plan educational activities	2.23	3.87	3.05
2	Management	4.56	4.98	4.77
3	Reporting	4.67	4.06	4.40
4	Monitoring and evaluation	2.75	3.62	3.18
5	Allocate resources	2.61	3.46	3.03

(>4 =Very high , 3-4 = high , <3 = low)

As table 6 depicts, the mean value for management and reporting was greater than 4 as rated by schools. The mean value for planning, monitoring and allocation of resources was less than 3. A mean value grater than 4 indicates information was prepared for planning and management and a mean value below average indicates that the purpose of information was not used for planning, monitoring and allocation of resources..

When it comes to education office level, planning, management, reporting, monitoring and allocation of resources had mean value greater than 3 (above average). This implies that there was better utilization of information by education offices than schools.

The literature review indicates that the major objective of an information system is to contribute to user output by providing timely information for use in managerial decision making and control. An EMIS therefore, should generate information for users such as management and administration, research and planning, monitoring and evaluation and to all decision-making levels of the education system. Information is collected in order to manage and keep the education system in check, for the definition of

priorities, the planning and formulation of policies, and for the follow-up and evaluation.

Table7 Distribution of Responses on the Demand of Information by Users

No	Items	*Respondents*					
		Schools		**Education bureau**		**Total**	
		Fr	%	**Fr**	%	**Fr**	%
1	Managers	76	95	52	100	128	97
2	Planners	34	42.5	40	76	74	56
3	Researchers	68	85	49	94	117	89

As it is shown in the above table, out of 132 total respondents 128 (97%) of them replied that data/information was requested by managers. The number of respondents who replied "the information is requested by planners and researchers" were 74 (56%) and 117 (89%) respectively. The percentage of school respondents who replied "information is requested by planners" were 34 (42.5%). The educational planning activity at school level is normally performed by the school principal (manager), but the respondents may not consider the principal as a planner. From the information obtained through interview, data/information was requested from every corner. Apart from managers, planners and researchers different units from within the organization and out side the organization such as Addis Ababa University and others were requesting information. This implies that there was a need for utilization of data.

Table 8 Mean Distribution of the Responses on the Type of Information Requested

Item No	Type of information	Mean		Grand mean
		School	Education office	
1	Student enrollment	4.32	4.65	4.49
2	Pupil-teacher ratio	4.90	3.86	4.38
3	Pupil-achievement	4.84	3.72	4.28
4	Pupil-section ratio	4.33	3.83	4.08
5	Pupil-textbook ratio	4.62	3.39	4.05
6	Promotion, repetition ,and dropout rate	4.57	3.55	4.10
7	School facilities(water, latrines, clinic and library	3.41	3.89	3.65
8	Expenditure by type	2.67	3.48	3.07

(>4 = regularly requested, 3-4 = Sometimes, 2- 3 = rarely requested,< 2= no request)

The above table shows that data/information on student enrollment, pupil-teacher ratio, pupil achievement, pupil-section ratio, pupil-textbook ratio, promotion, repetition and dropout rate have grand means ranging from 4.05 - 4.49. These were, therefore, identified by respondents as regularly requested at all levels of EMIS. On the other hand, data/information on expenditure by type and school facilities have grand means falling in the range classified as sometimes requested.

In addition to this the interview response revealed that information demand coming from every angle and all these type of information were requested by users. From this one can see that there was a need of educational data/information. Thus, this requires high effort of educational management information personnel to satisfy those needs.

4.2.2 The Status of Educational Information System in Planning

As it is indicated in the review of related literature, the objective of education information system planning is to develop an EMIS strategic plan to ensure a successful implementation, and achieve high performance that is sustainable over time. Without planning, there are no criteria by which to measure individual, departmental, or organizational performance. At the beginning it is important to identify what is needed to achieve by engaging in strategic planning. Specifically we need to know what our vision is and where to reach; this is to be stated clearly in the plan document. In line with this respondents were asked to reflect on how education information system planning was performed and it is discussed in here under..

Table 9 Distribution of Responses on the Practice of Education Information Planning

Item No	Activities	Means				
		School	Kebele	Kifle ketema	Education bureau	Grand mean
1	Prepare long term planning	1.31	1.12	1.26	1.35	1.26
2	Prepare annual planning	1.25	1.87	1.8	3.80	2.18
3	The EMIS plan is prepared on the basis of the organizational plan	1.47	2.91	1.72	3.60	2.42
4	Need assessment is made before data collection	1.32	1.56	1.02	2.89	1.70
5	Participation is made in EMIS plan preparation	1.23	1.38	2.4	2.91	1.98

(>4=mostly done,3 - 4=Partially done,2-3 =poorly done, < 2 Not done)

According to Addis Ababa City Administration Education Bureau respondents' "prepare EMIS annual planning" and "The EMIS plan is based on the organizational plan" weigh a mean value of 3.80 and 3.60 respectively. Need assessment and team work in plan preparation had a mean value of 2.89 and 2.91 respectively, which was below the average

value and it would indicate that the activity was poorly performed. Preparing long term planning had a mean value of 1.26 which implies that the work was not completely done. As to the Responses, given by all other respondents out side the education bureau, on the preparation of annual and long term planning, need assessment and participation on plan preparation show below a mean value of 2. Generally speaking, the planning activities were poorly performed at higher level and not at all performed in all the other hierarchies of the Addis Ababa city Administration education information system.

On the other hand, the results of the interview from education bureau revealed that though there was some kind of trial to prepare plan, it was done only for the sake of fulfilling formality. Information management activities were not the intention of each respective institution understudy. They further assured that they didn't have special information system planning which addresses the various beneficiaries. There was no tradition of assessing the needs and interests of the beneficiaries. The only activities they were doing were collecting data from the lower level and pass it to the next authority in the hierarchy. The data gathered in such way directly sent to the Ministry of Education for the preparation of Annual abstract. The collectors were not even aware of the importance of the data. As long as the census questionnaire was designed by ministry of education they didn't make any minuses or pluses to change the situation. Instead all the chains simply receive data from the schools and pass them to the ministry of education except some sort of analysis done by education bureau. Although, effort was made to prepare annual plan at education bureau level, it can be taken for granted unless it addresses the user's needs. This may imply that EMIS plan activities were not performed to a required degree at all levels starting from city administration down to school level.

As indicated in the literature part, planning the information system has two components; a long range plan for three to five years or longer and a short range plan for one year. Developing and implementing effective plans requires a team effort within an organization. Identifying the users' information systems requirements is an important issue for effectively managing the information system function. A very important fundamental concept of information system planning is that the organization's strategic plan should be the basis for the management information system strategic plan.

When one compare the practice with the literature there is a gap between what is and should be in terms of planning. This might have occurred due to lack of capacity to prepare plan on the part of the personnel or it may be due to Lack of attention offered to EMIS plan may bring about negative effect on the whole process of information management.

4.2.3 Procedures Followed in the Collection and Dissemination of Information.

Activities in EMIS follow a certain established steps. EMIS procedure begins with an appraisal of the needs, followed by data processing, analysis, and dissemination. This issue covered a wide area of analysis which was organized under the tables namely, the existence of organizational structure, EMIS cycles, data collection methods, information dissemination strategies, dissemination of information existence of EMIS oversight committee and school record system.

Table 10 Distribution of Responses on Organizational Structure

No	Items	Respondents									
		Education bureau		Kifle ketema		Kebele		School		Total	
1	Does EMIS have a special unit?	Fr	%	Fr	%	Fr	%	Fr	%	Fr	%
	Yes	11	91.66	15	71.43			6	7.5	32	24.24
	No	1	8.33	6	28.57	19	100	74	92.5	100	75.76
	Total	12	100	21	100	19	100	80	100	132	100
2	Who is accomplishing EMIS activities?										
	School principal							62	77.5	80	100
	Teacher										
	Expert	12	100	21	100	19	100	-	-	52	100
	Record officer			-	-	-		80	100	80	100
	Secretary	-	-	-	-	-	-	-	-	-	-

Table, 10 shows the status of EMIS in the organizational structure and as to who accomplishes the work. As it is indicated in the first item, respondents were asked to reflect whether the respective EMIS under study had a special unit or not. Majority of educational bureau respondents 9 (75.0 %) and 14 (66.7%) from sub city level replied that there was a special EMIS unit. When it comes to kebele and school level, the result was reversed. All of the kebele 19(100%) respondents and the majority of the school 74 (92.5%) replied that there was no special unit established in the respective organizations. Out of the total 132 respondents, the majority of them 100(75.76%) replied that there was no special EMIS unit established for information processing activities.

Interview results, on the other hand, have shown that at all levels, starting from the education bureau level up to school level, there was no independent EMIS unit established for processing data/information. At education bureau level for example the information related activities were

performed in the budget & plan section. At sub city level the information activities were performed in the planning section. At kebele level there was no established EMIS unit, but the work was performed together with other sectors. At school level the information activities were performed in the record offices.

Beside the interview, information obtained from schools through an open ended question revealed, EMIS was not an independent unit that stands for the purpose of educational information activities. The record office purpose was to keep students file, to collect and distribute rosters, report cards, mark lists and keep records of students. These fact may testify that there weren't independent EMIS units established for their sake at all levels of the hierarchy.

As it is shown in item 2 of table 10, respondents were asked to respond on the responsible person for the information processing activities. Accordingly, the bureau and education offices responded that the activity was accomplished by experts. On the other hand all respondents from the schools replied that the work is performed by record officers. Of these same respondents 62 (77.5%) of them again replied that the work was performed by the school principals. This indicates that both record officers and principals were involved in EMIS activities. Developing and implementing effective EMIS requires a team effort within an organization.

Table 11 Distribution of Responses on EMIS Cycles

No	Activities	Mean		Grand mean
		Education offices	Schools	
1	Need assessment	1.33	1.21	1.27
2	Data collection	4.21	4.34	4.28
3	Data analysis	4.04	2.34	3.19
4	Information dissemination	3.42	1.38	2.40
5	Feed back	1.23	1.05	1.14

(>4=Mostly done,3-4 =Partially done,2-3=Poorly done,<2=Not done.)

As it is indicated in item 1 of table 15 the mean value for need assessment as rated by education offices and schools was 1.33 and 1.21 respectively. This implies that the activity of need assessment was not done at all, both at educational offices and school level.

Interview results from education bureau experts indicated that there was no tradition of assessing the needs of users. What they do was receive questionnaire from the ministry of education and collect information on that basis of the questionnaire, they couldn't go beyond that to collect, analyze & disseminate information. One of the first tasks of EMIS manager is to identify what information is required by users.

Item 2 show that the mean value of data collection at educational office and school level is 4.21 and 4.34 respectively. The aggregate mean value also shows above 4. Thus information collection activity was mostly done by both school and education bureau level.

Item 3 shows, data analysis by education bureau level had a mean value of 4.04 and at school level 2.34. The difference in opinion might have occurred

due to their work status. From the information obtained through interview, data analysis was mostly done at bureau level. With regard to data analysis all the other hierarchies starting from sub city up to school level did little. After data collection activity was done by the schools it passes through kebele and sub city with little or no analysis and finally sent to Addis Ababa education bureau.

Lesson drawn from Ghana shows that analysis of education data was decentralized at the district level, with the centre taking on support and quality assurance roles. There is an active involvement of district offices in the development, distribution and analysis of information collected using the census questionnaire. This created a sense of ownership on the part of district offices and enabled them to determine some of the question asked in the census and to also start using the data for their own planning processes.

As can be seen from item 4 of table 11, dissemination of information had the mean value of 3.42 at education office level and 1.38 at school level. From this one can see information dissemination was partially done by the higher levels; and it was not totally done at school level.

As can be seen from the last item of table 11 the value for feed back was below 2 both at education offices level and at school level. Beside, the aggregate mean value was also below 2. From this one can understand that feedback was not taken as part of EMIS activity at all levels of the hierarchies.

Table 12 Mean Distribution on the Application of Data Collection Methods

No	Data collection methods	Means		Grand mean
		Education offices	Schools	
1	School census	4.78	3.89	4.33
2	Survey	1.47	1.55	1.51
3	Administrative documents	1.78	1,02	1.40

(>4=highly used , 3-4 =moderately used, 2-3= Minimum use, <2 not used)

As shown in table 12 of item 1-3, concerning data collection methods school census had a grand mean value of 4.33.Whearas survey and systematic transmission of administrative documents had a grand mean value of 1.51 and 1.40 respectively. A mean value above 4 implies that the method was used highly. From this one can understand that school census method was highly used for collection of data. Survey and systematic transmission of administrative documents were not used to collect education data. From this one can understand that not using an appropriate type of information collection instrument like survey method may bring about the dissemination of un timely data.

As indicated in the literature, educational information can be collected in different ways but the collection process depends upon the kind of problem. For example, periodic or selective surveys based on a representative sample of schools has significant advantages, one of which pertains to its cost, which is relatively lower compared to school censuses. Above all, it speeds up the availability of data. Untimely data has been one of the weaknesses of information systems in a number of countries, hindering information from being used in planning and decision-making.

Table 13 Mean Distribution on Information Dissemination Strategies.

No	Dissemination media	Means		Grand mean
		Education offices	Schools	
1	Statistical year book	4. 98	2.76	3.87
2	Internet website	1.87	1.05	1.46
3	C-D Rom	1.59	1.02	1.30
4	Specific reports	4.61	2.67	3.64
5	Written memorandum	3.45	2.66	3.05

(>4 = Regularly used, 3-4 =Mostly used,2-3 =Little used,<2 = not used)

As it is shown in table 16, as rated by the education offices the mean value for statistical year book and specific reports were 4.98 and 4.61 respectively. A mean value for written memorandum was 3.45 and for internet website and C-D Rom were 1.87 and 1.59 respectively. As rated by schools, the mean values for specific reports, written memorandum, statistical year book, C-D Rom and internet-website range from 1.05 to 2.67 which was below average.

Responses from open end items were analyzed on this issue. Their result indicated that most widely used information dissemination media were statistical year book, written memorandum and specific reports. Internet website and C-D Rom were not stated as a media from this one can understand that these two important dissemination medium namely, internet website and C-D Rom were not utilized as a means of dissemination at education level.

Dissemination refers to the action of distributing information using a variety of media, ranging from the traditional annual abstract of statistics to the use of the world-wide-web. One of the best means of supporting dissemination is to develop a dissemination strategy, which should identify the information requirements of the target audience.

Table 14 Distribution of Responses on Information Dissemination

No	Item	Respondents					
		Education offices		Schools		Total	
		Fr	%	Fr	%	Fr	%
1	Managers	52	96	78	97	128	97
2	Researchers	-	-	-	-	-	-
3	Planners	48	92	-	-	48	92
4	Schools	46	54			46	54
5	Experts	38	52			38	52
6	Parents			6	7%	6	7%
7	Teachers			-	-	-	-

Table 14 shows that majority of educational offices respondents replied that information was disseminated to managers, planners, schools and experts. The majority of school respondents replied that information was disseminated to managers only.

Despite this, facts in the literature indicate that dissemination includes reporting to relevant clients within or outside the organization. Internally information will have to be disseminated to planners, decision makers, decision support systems, experts and educational administrators at all levels. This is important because progress towards creating informed decision making environment can be effected and internal users will be aware of the importance and role of information in educational development

Table 15 Distribution of Responses on the Existence of EMIS Oversight Committee and School Record System.

No	Items	Respondents				
		Education bureau	KIfle ketema	Kebele	Schools	Total
1	Have you established EMIS committee?					
	Yes	-	-	-	-	-
	No	12 (100%	20 (100%)	20 (100%)	80 (100%)	132 (100%)
2	Is the school recording system in line with the census questionnaire?					
	Yes	3 (25%)	2 (10%)	5 (35%)	49 (61.25%)	59 (44.69)
	No	9 (75%)	18 (90%)	15 (75%)	31 (38.75%)	73 (55.31%)

As it is indicated in table 15 of item 1 respondents were asked whether oversight committee was established in their respective EMIS. Respondents of all levels (100%) have assured that there was no established EMIS supervision committee.

As indicated in the literature effective EMIS requires the collaboration of many individuals and units. A coordinating body, made up of representatives from as many stakeholder groups as possible, is needed to provide EMIS policy guidance and maximize its impact on the education system. Such an oversight committee should be made up of data providers, data users, information managers, researchers and policy makers. This includes input from policy-makers, researchers, donor partners, NGOs, government agencies, etc. Secondly they monitor the progress of data and information and address impediments to its free flow both into the EMIS and out of the EMIS and ensure that data was integrated successfully.

Item 2 indicates the response on the recording system of schools in considering the census questionnaire of the city administration education bureau. Majority of the respondents from the education bureau 9(75%), from sub city education office 18(90%) and from kebele 15(75%) replied that the school record keeping systems were not aligned with the census questionnaire. On the other hand, the majority of respondents, 49(61.25%) from the school replied that the record keeping was in line with the census questionnaire.

As literature review indicates record keeping at schools influences data accuracy, timeliness and relevance. If school records are well organized, the accuracy of survey completion is improved. If records are structured along similar lines to the survey instruments themselves then the available information at the school will be directly relevant to the information required by surveys. Well managed school records also assist with timely completion and return of surveys, because they make it an easy task each year to complete the surveys. Thus, the mismatch of school record keeping and the census questionnaire may affect the quality data produced.

4.2.4 The manpower resources in EMIS

As indicated in the literature it is essential to have qualified and trained staff to rely on. At the regional level, statisticians capable of verifying and consolidating information and of analyzing and disseminating them, are indispensable.. Training seminars for personnel should be organized in parallel with the setting up and the development of EMIS. With regard to this issue the adequacy of employees and the level of training they acquired were treated under this subtitle.

Table 16 Distribution of Responses on the Adequacy of EMIS Employees and Defined Responsibilities

N0	Items	Respondents									
		Education bureau		Kifle ketema		Kebele		School		Grand mean	
1	Adequacy of employees(mean)	3.57		3. 21		1.68		2.34		2.54	
	(>4=very adequate, 3-4 = adequate, 2-3=inadequate, <2 very inadequate)										
2	Is there clearly defined responsibility given to personnel?	Fr	%	Fr	%	Fr			%	Fr	%
	Yes	9	75	14	66.7	4	21	2	2.5	29	22
	No	3	25	7	33.3	15	79	78	97.	103	78
	Total	12	100	21	100	19	100	80	100	132	100

As can be seen in item 1 of table 16, respondents were asked to reflect on the adequacy of the number of employees. According to their response, the mean value for education bureau and sub city was 3.57 and 3.21 respectively. The mean value for school was 2.34 and the least mean value was 1.68 which stands for kebele. The grand mean shows that 2.54 mean value. It can be concluded that information personnel were inadequate.

The interview response reveals that employees working in the information system were not intended to serve the information system, but those working in the system were employed for doing other activities. The employees working at bureau and sub city level were expected to serve the plan and budget work activities. Whereas employees working at school level were wished for record keeping activities. At kebele level there was no personnel assigned for information related activities. They explained that there was lack of specialist experts assigned for the information related activities even at educational bureau level. Of all the Education bureau education development, plan & budget support work processes experts,

except one all were not information management specialist. From this one can wind up the education management didn't obtain appropriate attention for information management activity. This in turn may affect the quality of data /information collected and produced.

Item 2 of Table 16, shows whether there were defined responsibilities or not given to personnel. As it is indicated in the table, the majority 103(78%) of the respondents replied that there were no defined responsibilities only 29(25%) of the respondents replied that there were defined responsibilities. Respondents at bureau and sub city level majority 9(75%) and 14(66.7%) respectively replied that there were defined responsibilities whereas, majority of the respondents at kebele 15 (79%) and school level 78 (97.5%) replied that there were no defined responsibilities. This implies that the roles and responsibilities at kebele and school level were not defined as opposed to at education bureau and sub city level.

Table 17 Distribution of Respondent on Training of Information Management

	Areas of Training	Education offices	Schools	**Total**
1	Is there any training in the area of information management?	Frequency/Percent		
	Yes	38 73%	13 16%	51 38.63%
	No	14 27%	67 84%	81 61.37%
		Mean		Grand Mean
2.	Training in policy	3.96	1.54	2.75
	Computer training	3.88	2.65	3.26
	Information management	3.50	1 20	1.85
	Best practice in EMIS	2.40	1.15	1.77

(>4 = Very .good, 3-4 = good, 2-3 = poor ,<2 Very .poor)

As is indicated in table 17 of item 1, respondents were asked if training were given to information personnel. Majority 38(73%) respondents from education offices replied that information management training was given. In the case of schools, the majority 67(84%) replied that training was not given. The aggregate result shows 81(61.37%) of the respondents said that training was not given in the area of information management. The interview conducted confirmed that training on information management was not given to schools and the training for higher levels were not sufficient.

Item 2 of the same table indicates on which area training of information was offered. At education offices level the mean value of training in policy, computer training and information management ranges from 3.50 – 3. 96 and the mean value of best practice at this level was 2.40.

As indicated by school respondents the mean value of training in the specified areas was below 2. It would indicate that training on information was not given to schools in the specified areas except the provision of computer training. This could be as a result of poor management of educational management.

4.2.5 To what extent is accurate, relevant and timely data disseminated to users?

Educational statistics plays an important role in providing relevant and reliable information for making rational decisions, enhancing planning and programming, supporting monitoring and evaluation, and helping policy and strategy reviews within the education system. The dissemination of information through annual abstract was analyzed in the following table.

Table 18 Responses on the Disseminated Information via Annual Abstract

No	Status	Mean		
		Education offices	School	Grand mean
1	Availability	4.31	3.45	3.88
2	Timeliness	1.56	1.20	1.38
3	Accuracy	3.08	2.76	2.92
4	Reliable	3.17	2.45	2.81
5	Completeness	3.45	2.05	2.75

(>4=Very good, 3- 4=good, ,<3=Poor)

As can be seen from the above table, except timeliness which had 1.58 mean value all the others criteria namely, availability, accuracy, reliability and completeness had a mean value above average for education offices. On the other hand the response made by schools indicated that accuracy, reliability and completeness were below 2 except availability which had a mean value above average. Thus, the response made by education offices and schools match on the availability of information and lack of timely information. On the other hand the response for accuracy, reliability and completeness was contradictory. The education offices rated above average which implies that there was accuracy, reliability and completeness criteria in the dissemination of information through Annual abstract. The school respondents on the other hand showed the reverse.

To further look into this issue data was taken from document. The obtained information from 1999 E.C (2006/07) Addis Ababa educational Abstract and Ministry of education Abstract was analyzed. Addis Ababa primary education enrolment ratio of females for the year 1997 and 1998 E.C was 100.1%, 102.3% respectively. The net enrollment rate is the best way of measuring organized on-time school participation and is a more refined indicator of school and enrollment coverage in terms of explaining the

proportion of pupils enrolled from the official age group. NER is calculated by dividing the number of properly aged primary students (for Ethiopia ages 7-14) by the number of children of school going age (7-14). NER is usually lower than the GER since it excludes over-aged and under-aged pupils. It is normally calculated as the number of pupils in a given educational cycle expressed as a percentage of the population of related age. Therefore, in actual practice the number of pupils in the school system cannot exceed the number of the total population of a given age. From this one can infer that the disseminated data through annual abstract be deficient in accuracy and reliability.

From interview and observation result dissemination of information actually occurs a year and half past to the academic year. The previous year (2000E.C) education information was not produced until the period of this report. Instead of that the 2006/07(1999E.C) education Abstract was used as a source of information. From this it may be clear that the dissemination of information was at the wrong time.

Table19 Treatment of Different Data/ Information Seekers.

Is there appropriate treatment of different information needs accordingly?							
No	Item	Education Offices		Schools		Total	
		Fr	%	Fr	%	Fr	%
	Yes	15	28.85	11	13.75	26	19.70
	No	37	71.15	69	86.25	106	80.30

Respondents were asked whether users of information were treated according to their needs or not. As can be seen from the above table majority of the respondents 37(71.15) from education offices and 69(86.25) from schools replied "no ". From this one can understand that there was a perception by respondents that one type of data treatment could address

the problem of different kind of information interests and needs. This might be due to lack of knowledge

From the literature, there are different levels at which managers need and use information. The type of information needed may differ depending on the type of user that is obliged to serve. Some users are satisfied with the yearly abstract or quick book references of only numbers and some indicators. Others need detailed analysis. Some services given are as collaborative services.

4. 2. 6 Problems of EMIS.

Problems of management and planning of educational information constrain in the efforts made by schools and education offices to harmoniously integrate all sources of information and provide them in a synthesized manner to the users. The major problems related to management and planning of EMIS could be varied but for this purpose problems related to utilization and the filling of annual census questionnaire were treated here under

Table 20 Problems Related to Utilization of Information

No	Problems	Means		
		Education offices (N=52)	Schools (N=80)	Grand mean
1	Lack of awareness on the importance of information.	3.89	4.32	4.10
2	Lack of available information	3.68	3.54	3.61
3	The information is incomplete	3.29	3.71	3.50
4	Unreliable information	3.12	4.48	3.46
5	Lack of timely information	3.76	4.62	4.19

(>4= serious problem, 3-4 = Moderately serious, <3 = Not serious)

As can be seen in table, the grand mean for Lack of awareness on the importance of information and lack of timely information had a grand mean value of 4.10 and 4.19 respectively. Thus, lack of awareness and lack of timely information were taken as serious problems by respondents. All the other problems namely lack of available information, lack of reliable information and lack of complete information were rated 3.46-3.61 and taken as moderately serious problems. At all levels the problems were rated as serious and moderately serious .Consequently this may show that all the problems listed above existed in both educational offices level and school level, except some degree of differences . This may imply that the dissemination of data/ information lacks accuracy and timeliness.

Table 21 Problems Related to Filling Annual Census Questionnaire

No	Problems	Mean		Grand mean
		Education offices	Schools	
1	Lack of guidebook on how to fill the questionnaire	3.18	4.23	3.70
2	Lack of awareness on the importance of the census	3.58	3.37	3.50
3	Lack of training on how to fill the questionnaire	3.43	4.70	4.06
4	Lack of clarity of the items	1.65	2.51	2.08
5	The presence of items asking questions not available in schools	1.52	2.54	2.03
6	Lack of time	3.75	3.82	3.78

(>4=Very serious, 3-4 =Serious,2- 3 = Less serious ,<2 = Not serious)

The grand mean for lack of training on how to fill the questionnaire was 4.06 as very serious problem. The grand mean for lack of awareness on the importance of the census, lack of guidebook on how to fill the questionnaire and lack of time ranges 3.50 - 3.78 for a serious problem. Lack of clarity of items and presence of items asking questions were not available in schools range from 2.03 - 2.08 as less serious problem.

As can be seen from the table, lack of training on how to fill the questionnaire was a very serious problem and lack of guide book on how to fill the questionnaire, lack of awareness on the importance of the census and lack of time were serious problems. Lack of clarity of the items and the presence of items asking questions not available in schools were less serious problems.

Despite this fact, the responses of the open ended items and interview have shown the comments on the problem of filling the census questionnaire problems were created by the schools. Respondents have answered that they couldn't get the right data from the schools on time. The schools also could not able to take the census questionnaire & return it instantly.

CHAPTER FIVE

5. Summary, Conclusions, and Recommendations

This chapter deals with the summary of the findings, the conclusion drawn from the findings, and recommendations forwarded, that may help to improve the management and planning of EMIS in Addis Ababa City Administration.

5.1 Summary

The collection, processing, management, utilizing and dissemination of data require systematic and skillful approach, because decisions are made based on data. The accuracy and appropriateness of the information collected and analyzed plays a significant role in the utilization of data for planning and management. These days the management and planning of education information system has a number of shortcomings. Dissemination of accurate, relevant and timely data has been the major problem of EMIS.

The general objective of this study was to assess the practices of the planning and management of education information systems at different hierarchies of Addis Abeba city Administration. In order to address this purpose the following basic questions were formulated.

1. What are the current practices of EMIS planning?
2. What procedures are followed to collect and disseminate educational information?
3 To what extent is educational information utilized for planning and management ?
4. To what extent are accurate, relevant and timely data disseminated to users?
5. Does the system have the manpower capable of doing the planning and management of education information system?

6. What are the major problems of planning and management of educational information systems and possible solutions?

The descriptive survey method was employed. Samples were drawn from education bureau, kifleketema education offices kebeles and, schools. A variety of sampling techniques, multistage, purposeful and random sampling was employed. Questionnaires, interviews, and documents were used to collect the necessary data. The obtained data were analyzed using statistical tools of percentage, mean, and grand mean.

5.1.1 Characteristics of the Respondents

The gender parity index for sub city was 0.7 and bureau and kebele was 0.7. The gender parity index for secondary and primary schools was 0.93 and 0.88 respectively. Although participation of women was relatively better at sub city and primary education level, their participation was low at education bureau, kebele and secondary schools, in decision making and educational information activities. At school level, the main actors in dealing the management of educational information (record officers) were 12th completers and TTI certificate and a maximum of college diploma holders. Almost all the personnel working in information processing activities at school level and majority of personnel working at education offices level were serving the education information management system with out having the necessary qualification for the position they held. With regard to work experience in the present position, of all the respondents 82 (62.1%) of them fall below 3 years. The other 35(26.5%) were in the service year category of 4 -6, and 13 (9.8%) of them were in the category of 7-9, the other 2 (1.6%) were in the category of 10 & above. Majority of the respondents 82 (62.1%) had service of 3 years & below in the position they held

5.1.2 Major Findings

1. Utilization of information

a. The mean value for management and reporting was greater than 4 and the mean value for planning, monitoring and allocation of resources was less than 3 as rated by schools. A mean value grater than 4 indicates information was used for planning and management and a mean value below average indicates that the purpose of information was not for planning, monitoring and allocation of resources. When it comes to education offices level, planning, management, reporting, monitoring and allocation of resources was greater than 3 (above average). This implies that there was better utilization of information by education offices than schools.

b. The education information system was found to serve mainly for reporting purpose very little was designed to serve other educational activities, like management, planning, monitoring and allocation of resources purposes. Apart from managers, planners and researchers different units from within the organization and out side the organization such as Addis Ababa University and others were requesting information.

2. The Status of Educational Information system in Planning

a. According to Addis Ababa city administration education bureau respondents' "prepare EMIS annual planning" and "The EMIS plan is based on the organizational plan" weigh a mean value of 3.80 and 3.60 respectively. "Need assessment and team work in plan preparation" had a mean value of 2.89 and 2.91 respectively, which was below the average value and it would indicate that the activity was poorly performed. Preparing long term planning had a mean value of 1.26 which implies that the work was not completely done. As to the Responses, given by all other respondents out side the education bureau, on the preparation of annual and long term planning, need assessment and participation on plan preparation show below a mean value of 2. Generally speaking, the planning

activities were poorly performed at higher level and not at all performed in all the other hierarchies of the Addis Ababa city Administration education information system.

b.EMIS plan activities were not performed to a required level starting from sub city down to school level. Although, effort was made to prepare annual plan at education bureau level, it can be taken for granted unless it addresses the user's needs. EMIS didn't have special information system planning which addresses the various beneficiaries. There was no tradition of assessing the needs and interests of the beneficiaries. The only activities they were doing were collecting data from the lower level and pass it to the next authority in the hierarchy

3. Procedures Followed in the Collection and Dissemination of EMIS.

a Majority of educational bureau 9 (75.0 %) and 14 (66.7%) from sub city level replied that there was a special EMIS unit. All of the kebele 19(100%) and majority of the school respondents 74 (92.5%) replied that there was no special unit established in the respective organizations. Out of the total 132 respondents, the majority of them 100(75.76%) replied that there was no special EMIS unit established for information processing activities.

b. Information management activities were not found to be the major activity of each respective institution understudy. At education bureau level for example the information related activities were performed in the budget & plan section. At sub city level the information activities were performed in the planning section. At kebele level there was no established EMIS unit, but the work was performed together with other sectors. At school level the information activities were performed in the record offices.

c All respondents at all levels have assured that there was no established EMIS supervision committee.

d. School record keeping was not in line to education census questionnaire.

e Concerning data collection methods school census had a grand mean value of 4.33.Whearas survey and systematic transmission of administrative documents had a grand mean value of 1.51 and 1.40 respectively. A mean value above 4 implies that the method was used greatly. From this one can understand that school census method was highly used for collection of data, but other methods were not employed as a method of data collection.

f. There was no information communication strategy designed to disseminate information at all levels. The only dissemination media used were Annual abstract and reports.

g. Data dissemination was done on the same fashion for different users. There was only one kind of information treatment for different interests and needs.

4. Timely, reliable and accurate information

a. The information obtained from 1999 E.C (2006/07) Addis Ababa educational Abstract and Ministry of education Abstract was that Addis Ababa primary education enrolment ratio of females for the year 1997 and 1998 E.C was 100.1%, 102.3% respectively. NER is usually lower than the GER since it excludes over-aged and under-aged pupils. It is normally calculated as the number of pupils in a given educational cycle expressed as a percentage of the population of related age. Therefore, in actual practice the number of pupils in the school system cannot exceed the number of the

total population of a given age. This indicates that the disseminated data through annual abstract lacks accuracy and reliability.

b. From interview and observation result dissemination of information actually occurs a year and half past to the academic year. The previous year (2000E.C) education information was not produced until the period of this report. Instead of that the 2006/07(1999E.C) education Abstract was used as a source of information. From this it may be evident that the dissemination of information was untimely.

5. The Adequacy of EMIS Personnel

a. Concerning the adequacy of the number of employees, the grand mean shows that 2.54 mean value. This indicates that the number of information personnel was found insufficient to run the information management.

b. Majority 38(73%) respondents from education offices replied that information management training was given. In the case of schools, the majority 67(84%) replied that training was not given. The aggregate result shows 81(61.37%) of the respondents said that training was not given in the area of information management. The interview conducted confirmed that training on information management was not given to schools and the training for higher levels was not sufficient. Lack of **t**rained man power and lack of training was a serious problem in Addis Administration education sector EMIS.

6. Problems related to EMIS

a. The grand mean of "Lack of awareness on the importance of information" and "lack of timely information" had a grand mean value of 4.10 and 4.19 respectively. Thus, lack of awareness and lack of timely information were taken as serious problems by respondents. All the other problems namely lack of available information, lack of reliable information and lack of

complete information were rated 3.46-3.61 and this implies that the problem was moderately serious.

b. The grand mean for lack of training on how to fill the questionnaire was 4.06 and it was a serious problem. The grand mean for lack of awareness on the importance of the census, lack of guidebook on how to fill the questionnaire and lack of time ranges 3.50 - 3.78 and these were also serious problems. Lack of clarity of items and presence of items asking questions were not available in schools range from 2.03 - 2.08 it was less serious problem.

5.2 Conclusions

Based on the review of related literature so far and summary of the findings following conclusions were drawn:

a. In assigning personnel of education information system, their level of education and subject specialization was not considered. Assigning personnel in information management activities from lower educational back ground may bring negative impact on the collection and production of information. Lack of trained man power and lack of training was found serious problem in Addis Administration education sector EMIS. It is essential to have qualified and trained staff to rely on. Training programs create an opportunity to inform school level data providers about the purpose of the data collection process and how the data they provide will be used. This may help to encourage ownership of the EMIS at the school level and gives data providers at this level a better idea of the kind of information that can be available to them.

b. School principals, education officials, record officers and experts served for few years in the position they held. The reason to happen could be as a result of transfer and turnover. This may in turn result to the loss of expertise. To reconstruct them requires an investment (human, material and time) that is greater than having to ensure their continuity. Further more, frequent EMIS personnel transfer will bring state of ignorance by those who are newly assigned.

c. EMIS units weren't in place at all hierarchies of Addis Ababa city administration education information system, which work mainly for the information management and planning activities. This may be due to lack of proper attention to the information management as a major activity without which other educational activities couldn't be effective. Without having the necessary structure in place one cannot accomplish EMIS activities in the required level.

d. Timely released information encourages people to make use of the information based on information outputs. The foundation for management decisions must be accurate, up-to-date information. Deliver the right quality and timely information is vital for the education system. Only with accurate reliable, complete and timely information can managers monitor progress toward their goals and turn plans into reality. Education planners need to have confidence in the data they use to develop strategies and plans. Unless information is not released timely people may tend to make decisions based on feeling.

5.3 Recommendations

According to the results of this study, education information system service in Addis Ababa Education sector has been given little or no emphasis. The first requirement for producing accurate, reliable and complete data on a timely basis is to establish an efficient and effective EMIS at all levels. Based on the findings the most important elements were pointed out as follows.

a Qualified and trained personnel should be setup if EMIS at every level of the system is to function properly and collect educational data and disseminate to its users. To enable and build an effective EMIS system and ~~capacity~~ organizational capacity must be strengthened. It is essential to have qualified and trained staff to rely on. The responsibility rests on the organizations themselves in training the employees to become familiar with the policies processes, technologies and best practices in information management. To alleviate the problem, various capacity building programs at different levels of the system should be designed and implemented for experts record officers, officials as well as school principals through short term and longer trainings. Thus, all levels of the Addis Ababa City Administration Education sector management is supposed to do the following;

- In the first place, in assigning EMIS personnel their level of education and subject specialization should be considered
- Training need assessment need to be worked out first and then the existing personnel should get training in information management and statistics courses through different phases.
- Whenever there is a vacancy for EMIS qualified personnel should enter in to the system.
- Training seminars for personnel should be organized in parallel with the setting up and the development of EMIS.

- Training should be periodically renewed to update the training and the qualification of personnel.

b. School principals, education officials, record officers and experts mobility was frequent and is a constraint that should be imperatively taken into account in the setting up of EMIS. Therefore, EMIS personnel should serve the system for a reasonable longer time before they get transfer to another place. The Addis Abeba Educational Administration of all levels therefore, should retain EMIS personnel in the system for a given period of time.

c. To produce accurate, reliable, timely and complete data EMIS plan is vital. Therefore, all the hierarchies of the Addis Ababa City Administration education management information system should prepare a long range, intermediate and a short range plan of their respective organization. For this to happen all the managers of the respective organization should make the first move.

d.. For information to be handled properly a well-built organizational structure should be in place. The Addis Ababa city administration education bureau needs to establish a strong EMIS unit that works mainly for information management.

e. The information management processes especially the collection and analysis of education data should be decentralized at sub city, kebele and school level with education bureau taking the lead and support on quality assurance roles. This requires resource and time to implement. Hence, the City Administration Bureau taking this into account should make it into effect through different phases.

f. Addis Ababa City Administration School principals should take the lead to make the record keeping at schools to match the content and structure of the annual census survey form, so record keeping should be prepared on the basis of education census questionnaire.

g. At Education Bureau level, on top of the statistical year book currently used, different dissemination media like C-D Rom and internet-website should be employed as a means of dissemination of information.

BIBLIOGRAPHY

Addis Ababa Education Bureau. (2007). *Education Statistics Annual Abstract.1998 E.C.(2005-06)*: Addis Ababa.

Addis Ababa Education Bureau. (2008).*Education Statistics Annual Abstract 1999 E.C.(2006-2007):* Addis Ababa.

Carrizo, L., Sauvageot C. and Bella N. (2003). *Information tools for the Preparation and monitoring of education plans.* Paris: UNESCO.

Cassidy, T. (2006).*Education management information systems in Latin America and the Caribbean.* Lessons and challenges. Retrieved December 06,2008,fromhttp://www.iadb.org/IDBDocs.cfm.

Davis, G.B., and Margrethe, H. O.(1985). *Management information systems.* Singapore: McGraw-Hill Book Company.

ETP.(1994). *Education and Training policy.* Addis Ababa: EMPDA.

Griffin, R.W.(2000).*Management 5th edition U.S.A:* Houghton Miffin Company.

Haiyan, H and Herstein J. (2003). *Education management information system.* Retrieved December 25,2008,from http://www.infoDev.org.

Keeves,J. P.(1990).*Educational research, methodology and measurement;An International Hand Book.* New York: Pergamon Press Plc.

Madley, K. (1987). *Management information system: Planning and decision-making.* New Delh: Parentice-Hall.

MOE.(2004). *Education Sector Development Programme. Program implementation manual.* Addis Ababa.

MOE.(2005).*Education Sector Development Program III: Program Action Plan.* Addis Ababa. Berhanena Selam Printing Press.

MOE.(2007).*Education Statistics Annual Abstract 1998 E.C.(2005-06)*: Addis Ababa. St. George Printing Press.

MOE.(2008).*Education Statistics Annual Abstract 1999 E.C.(2006-2007):* Addis Abeba: Berhanena Selam Printing Press.

Murdock, R.G., JOEL, E.R., and James, R.C. (1988). *Information systems for modern management.* New york: McGraw-Hill, company.

O'Brien,J.A .(1990). *Management Information Systems.* USA: Hoffmann Press.

O'Brien. J.A.(2001). *Introduction to information systems.* New York: McGraw-Hill.

Pearce II, J.A and Robinson, R.B. (1989). *Management.*Newyork: Mcgraw-Hill.

Plunkett, WR and Attner R.F. (1989). *Introduction to management: 3rd edition* Boston:Pws- Kent publishing company.

Sauvageot. (1997).*Indicators for educational planning*: A Practical guide. Paris: UNESCO/IIEP.

Scott,G..M.(1986).P*rinciples of management information systems.* New York: McGraw-Hill.

Stoner, A.F, Freeman, R.E and Gibert, D.K. (1989). *Management.* New Delhi: Prentice Hall India.

Tegegn Nuresu. (2003).*Education management information systems. (EMIS).* Harere: UNESCO.

Trucano,M.(2006). *Education management information system.* USA: Cambridge Education.

UNESCO. (2000). *World Education Forum: The Dakar Framework for Action.* France: UNESCO.

UNESCO.(2001). *EFA Planning guide: Southeast and East Asia: Follow-up to the World Education Forum*: Dakar: UNESCO.

UNESCO. (2003). *Information tools for the preparation and monitoring of education plans; education policies and strategies 5.* Paris: UNESCO.

UNESCO.(2006). *Information systems and educational policies: a Frame Work for Indicators* . Addis Ababa: UNESCO.

UNESCO. (2008). *Education Management Information System*: Retrieved January 13, 2009 http://www. Unesco.org/iiep.

APENDECIES

ADDIS ABABA UNIVERSITY

SCHOOL OF GRADUATE STUDIES
COLLEGE OF EDUCTION

Department of Educational Planning and management
A questionnaire to be filled by primary& Secondary School Principals, & record officers

General Direction

I would like to express my appreciation for your time and cooperation, in advance, to fill this questionnaire. The purpose of this questionnaire is to collect data for thesis entitled" The management and planning of information systems in education sector of Addis Ababa City Administration".

The success of the study will depend on the quality of your responses so you are kindly requested to give accurate and honest responses to the items presented. Your response will be kept confidential and used only for academic purpose.

N.B 1.No need of writing your name;

2. Please put **'X'** mark in the box provided where alternatives are given;
3. For any additional opinion or explanation, you are kindly requested to write Briefly as much as possible in the space provided.
4. You can provide more than one response if necessary.

- **Part I General Information**

1. Name of Kifleketema _____ Kebele _____School_____
2. School level

☐ 1- Primary ☐ 2.Secondary

3 Sex

☐1. Male ☐ 2. Female

4. Work responsibility

☐ 1. School Principal ☐ 2 Record officer

3. If other, please specify _____

5. Educational qualification

1. Secondary school graduate 4. BA/BSC

2. TTI Certificate 5. MA/MSC

3. College diploma 6. If other, please specify _____

6 Subject of specialization_____

7. Special training_____

8. Years of service in the present position _____

Part II Purposes and utilization of information

9. Do you make use of educational information in order to accomplish your activities?

☐ 1 Yes ☐ 2 No

10. From the purposes of educational data/ information below, which ones are applied in your school? Please rate them using the number indicate; **(5=Very high, 4=High, 3=Medium,2=Low,1=Not at all)**

N	Activities	5	4	3	2	1
1	Plan educational activities					
2	Management					
3	Report on the performance of the activity					
4	Monitor the attainment of goals & objectives					
5	Allocate resources					
6	If other please, .Specify _____					

11 To what extent educational information is requested by the following users? Rate them using the numbers **(5=Verygood,4=good,3=Fair,2=Poor,1=Very poor)**

No	Users	5	4	3	2	1
1	Management					
2	Planners					
4	Researchers					
5	If other please, .Specify _____					

12.To what extent the following educational data/information, is requested by users? Please rate them using the numbers to indicate: **(5-Regularly, 4- Mostly, 3- Sometimes, 2-Rarely 1-No request.)**

No	Type of data /information	5	4	3	2	1
1	Student enrollment					
2	Pupil achievement					
3	Pupil - teacher ratio					
4	Pupil - text book ratio					
5	Pupil- section ratio					
6	Promotion, repetition, and drop out rate					
7	Teachers profile					
8	School facilities (water, latrines, clinic and library.)					
9	Expenditure/ budget by type					
10	If others, Please specify _____					

13. Please specify, if any, the purpose of educational information;

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Part III Planning and management of information.

14. To what extent the following activities are performed by the information system of your school?? Please rate them using the number; **(5 Fully done, 4-Mostly done,3-Partially done,2-rarely done 1-Not done**

N	Activities	5	4	3	2	1
1	Prepare long term plan for information system					
2	Prepare annual plan for the information system					
3	The information system plan is prepared on the basis of the organization's major plan.					
4	Need assessment is made before data collection.					
5	Participation is exercised in plan preparation					
6	If other please, .Specify _____ .					

15. Is there a special unit established in your school for the information system?

☐ 1 Yes ☐ 2. No

16. Who is handling the information collection & dissemination activities in your school?

☐ 1. The school principal ☐ 4. Record personnel

☐ 2. Teacher ☐ 5 .Secretary

☐ 3 Information expert 6.If other, please specify _____

17. Is there clearly defined responsibilities given to information personnel?

☐ 1. Yes ☐ 2. No

18 How adequate are number of employees working in the information system?

☐ 1. Very adequate ☐ 4 Inadequate

☐ 2. Adequate ☐ 5 Very inadequate

☐ 3 Fairly adequate

19.Is there any training conducted on data/information management l?

☐ 1 Yes ☐ 2 No

20. If your answer for question number 19 is ''Yes" to what extent the information system personnel are trained in the following areas? Please rate them using the number indicate; **(5=Verygood, 4=good, 3=Fair, 2=Poor,1=Very poor)**

No	Areas of training	5	4	3	2	1
1	Policies					
2	Computer training					
3	Information management					
4	Best practices in information					
5	If other please, .Specify _____					

21. Is there any supervision (management) committee established in support of information system in your school?

☐ 1. Yes ☐ 2. No

22. Did your school structure the recording system in line with the education census questionnaire?

☐1. Yes ☐ 2.No

23. Listed below are the cycles of information production. To what degree they are performed by the information system of your school? Please rate them using the number indicate; **(5=Fully done, 4=Mostly done,3=Partially done,2=rarely done 1=Not done**

N	**Activities**	**5**	**4**	**3**	**2**	**1**
1	Information need assessment					
2	Data collection					
3	Data analysis					
4	Information dissemination					
5	Feed back					
6	If other please, .Specify _____					

24. Which of the following information collection methods are used by the information system?

☐ 1 School census ☐ 3.Administrative documents

☐ 2 survey ☐ 4 If other please, .Specify _____

25. Which of the following dissemination strategies are used by the information system??

☐ 1 Statistical yearbook ☐ 4 Specific reports

☐ 2 Internet website ☐ 5 Written memoranda

☐ 3 CD-Rom ☐ 6 If other please, .Specify _____

26. To whom is information disseminated?

☐ 1 Management ☐ 4 Parents

☐ 2 Planners ☐ 5 Teachers

☐ 3 Researchers ☐ 6 If other please, .Specify _____

27 . Please specify, if you have any point with regard to the planning and management of information systems?

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Part IV Accurate, relevant and timely data dissemination

28. To what extent the information disseminated through annual abstract satisfies the following criteria? Please rate them using the number indicate; **(5 =Very good, 4=good,3=Fair,2=Poor,1=Very poor)**

No	Status	5	4	3	2	1
1	Availability					
2	Timeliness					
3	Accuracy					
4	Reliable					
5	Completeness					

29. Different users have different information needs that the system should respond to it. Is this applicable in your school?

☐ 1. Yes ☐ 2.No

30. Do you have any point to mention with regard to .data accuracy, relevancy, reliability and timely dissemination of information with especial reference to the information passing through annual abstract? Please specify;

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Part V Problems of EMIS

31. Listed below are problems related to the utilization of information? Please rate them, as they occur in your school, using the number to indicate;

(5=Very serious,4 = Serious, 3 = Partially serious ,2 = Less serious, 1 = Not serious)

No	Problems	5	4	3	2	1
1	Lack of awareness on the importance of information.					
2	Lack of available information					
3	The information is incomplete					
4	Unreliable information					
5	The information is not timely					
6	If other please, .Specify _____					

32. What problems have been encountered in filling the annual education census questionnaire? Please rate them using the numbers to indicate; (5-Very serious,4 – Serious, 3 – Partially serious ,2 - Less serious, 1 – Not serious)

No	Problems	5	4	3	2	1
1	Lack of guidebook on how to fill the questionnaire					
2	Lack of awareness on the importance of the census					
3	Lack of training on how to fill the questionnaire					
4	Lack of clarity of the items					
5	The presence of items asking questions not available in schools					
6	Lack of time					
7	If other please, .Specify					

33. Please list down, if any, major problems of education management information system you think left- out:

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Part VI Comments and opinion

34. Any comments or suggestions concerning the current problems of planning and management of information system, and possible solutions you would like to give;

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Addis Ababa University

School of Graduate Studies

College of Education

Department of Educational Planning and Management

This questionnaire is to be filled out by officials and experts of Addis Ababa education bureau, Kifleketma and Kebele education offices.

General Direction

I would like to express my appreciation for your time and cooperation, in advance, to fill this questionnaire. The purpose of this questionnaire is to collect data for thesis entitled" The management and planning of information systems in education sector of Addis Ababa City Administration".

The success of the study will depend on the quality of your responses so you are kindly requested to give accurate and honest responses to the items presented. Your response will be kept confidential and used only for academic purpose.

N.B 1.No need of writing your name;

2. Please put **'X'** mark in the box provided where alternatives are given;
3. For any additional opinion or explanation, you are kindly requested to write briefly as much as possible in the space provided.
4. You can provide more than one response if necessary.

Part I General Information

1. Name of Kifleketema _____ Kebele _____
2. Work Place

☐ 1. Kifleketema education ☐3.Education bureau

☐ 2. Kebele education

3 Sex

☐ 1. Male ☐ 2. Female

4. Work Responsibility

☐1.Department head ☐ 4 Information expert

☐2 Team leader ☐ 5 Process owner

☐3 Secretary ☐ 6 If other, please specify _____

5. Educational qualification

☐ 1. Secondary school graduate ☐ 4. BA/BSC

☐ 2. TTI Certificate ☐ 5. MA/MSC

☐ 3. College diploma ☐ 6. If other, please specify _____

6 Subject of specialization_____

7. Special training_____

8. Years of service in the present position _____

Part II Purposes and utilization of information

9. Do you make use of educational information in order to accomplish your activities?

☐ 1 Yes ☐ 2 No

10. From the purposes of educational information below, which ones are applied in your organization? Please rate them using the number indicate; **(5=Very high, 4=High, 3=Medium,2=Low,1=Not at all)**

N	Activities	5	4	3	2	1
1	Plan educational activities					
2	Management					
3	Report on the performance of the activity					
4	Monitor the attainment of goals & objectives					
5	Allocate resources					
6	If other please, .Specify _____					

11 To what extent educational information is requested by the following users? Rate them using the numbers **(5=Verygood,4=good,3=Fair,2=Poor,1=Very poor)**

No	Users	5	4	3	2	1
1	Management					
2	Planners					
4	Researchers					
5	If other please, .Specify _____					

12. To what extent the following educational data/information, is requested by users? Please rate them using the numbers to indicate: **(5-Regularly, 4- Mostly, 3- Sometimes, 2-Rarely 1-No request.)**

No	Type of data /information	5	4	3	2	1
1	Student enrollment					
2	Pupil achievement					
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4	Pupil - text book ratio					
5	Pupil- section ratio					
6	Promotion, repetition, and drop out rate					
7	Teachers profile					
8	School facilities (water, latrines, clinic and library.)					
9	Expenditure/ budget by type					
10	If others, Please specify _____					

13. Please specify, if any, related to the purposes and utilization of educational information;

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Part III Planning and management of information system.

14.To what extent the following activities are performed by the information system of your organization? Please rate them using the number; **(5 Fully done, 4-Mostly done,3-Partially done,2-rarely done 1-Not done**

N	Activities	5	4	3	2	1
1	Prepare long term plan for information system					
2	Prepare annual plan for the information system					
3	The information system plan is prepared on the basis of the organization's major plan.					
4	Need assessment is made before data collection.					
5	Participation is exercised in plan preparation					
6	If other please, .Specify .					

15. Is there a special unit established in your organization for the collection and dissemination of educational information?

☐ 1 Yes ☐ 2. No

16. Who is handling the information collection & dissemination activities in your organization?

☐ 1. Information Expert ☐ 4. Archive Personnel

☐ 2. Department head ☐ 5 .Secretary

☐ 3 Team leader 6.If other, please specify _____

17. Is there clearly defined responsibilities given to information personnel?

☐ 1. Yes ☐ 2. No

18 How adequate are number of employees working in the information system?

☐ 1. Very adequate ☐ 4 Inadequate

☐ 2. Adequate ☐ 5 Very inadequate

☐ 3 Fairly adequate

19.Is there any training conducted on data/information management ?

☐ 1 Yes ☐ 2 No

20. If your answer for question number 19 is ''Yes" to what extent the information system personnel are trained in the following areas? Please rate them using the number indicate; **(5=Very good, 4=good, 3=Fair, 2=Poor,1=Very poor)**

No	Areas of training	5	4	3	2	1
1	Policies					
2	Computer training					
3	Information management					
4	Best practices in information					
5	If other please, .Specify					

21 Is there any supervision (management) committee established in support of information system in your organization?

☐ 1. Yes ☐ 2. No

22. Did the schools under your supervision structure their recording system in line with the education census questionnaire.

☐1. Yes ☐ 2.No

23. Listed below are the cycles of information production. To what degree they are performed by the information system of your organization? Please rate them using the number indicate; **(5=Fully done, 4=Mostly done,3=Partially done,2=rarely done 1=Not done**

N	Activities	5	4	3	2	1
1	Information need assessment					
2	Data collection					
3	Data analysis					
4	Information dissemination					
5	Feed back					
6	If other please, .Specify					

24. Which of the following methods are used by the information system?

☐ 1 School census ☐ 3.Administrative documents

☐ 2 survey ☐ 4 If other please, .Specify _____

25. Which of the following dissemination strategies are used by the information system?

☐ 1 Statistical yearbook ☐ 4 Specific reports

☐ 2 Internet website ☐ 5 Written memoranda

☐ 3 CD-Rom ☐ 6 If other please, .Specify _____

26. To whom is information disseminated?

☐ 1 Management ☐ 4 Schools

☐ 2 Planners ☐ 5 Experts

☐ 3 Researchers ☐ 6 If other please, .Specify _____

27. Please specify, if you have any point with regard to the planning and management of information systems?

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Part IV Accurate, relevant and timely data dissemination

28. To what extent the information disseminated through annual abstract satisfies the following criteria? Please rate them using the number indicate; **(5 =Very good, 4=good,3=Fair,2=Poor,1=Very poor)**

No	Status	5	4	3	2	1
1	Availability					
2	Timeliness					
3	Accuracy					
4	Reliable					
5	Completeness					

29. Different users have different information needs that the system should respond to it. Is this applicable in your situation?

☐ 1. Yes ☐ 2.No

30. Do you have any point to mention with regard to accuracy, relevancy, reliability and timely dissemination of information with especial reference to the information passing through annual abstract? Please specify;

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Part V Problems of EMIS

31. Listed below are problems related to the utilization of information? Please rate them, as they occur in your organization, using the number to indicate;

(5=Very serious,4 = Serious, 3 = Partially serious ,2 = Less serious, 1 = Not serious)

No	Problems	5	4	3	2	1
1	Lack of awareness on the importance of information.					
2	Lack of available information					
3	The information is incomplete					
4	Unreliable information					
5	The information is not timely					
6	If other please, .Specify					

32. What problems do you encounter when preparing educational information in your organization? Please rate them using the numbers to indicate;

(5=Very serious,4 = Serious, 3 =Partially serious ,2 -=Less serious, 1 =Not serious)

No	Problems	5	4	3	2	1
1	Lack of manual how to do the job					
2	Lack of personnel assigned for the job					
3	Lack of training					
4	Lack of computers					
5	Lack of resources					
6	Turnover/transfer of personnel					
7	Lack of support from higher authorities					
8	If other please, .Specify					

33. Please list down, if any, major problems of education management information system you think left- out:

_____

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Part VI Comments and opinion

34. Any comments or suggestions concerning the current problems of planning and management of information system, and possible solutions you would like to give;

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DECLARATION

I, the Undersigned, declare that this is my original work and that all sources of material used for this thesis have been duly acknowledged.

Name: Ayalew Jifar

Signature: _____

Place: Addis Ababa University

Date of submission: June, 2009

This thesis has been submitted for examination with my approval as a university research advisor:

Name: Dr. Jeilu Oumer

Signature: _____

Date of Approval: June 18/2009