



**Addis Ababa University**

**College Of Education and Language Studies**

**Department of Educational Planning and Management**

**The Implementation of the E-School Project Management System In  
Government Primary Schools of Addis Ababa City Administration**

**By: Hawultu Tilahun Awoke**

**A Thesis Submitted to Addis Ababa University College of Education and  
Language Studies Department of Educational Planning and  
Management in Partial Fulfillment of the Requirements for the Degree  
of Master of Arts in Educational Leadership and Management**

Aug. 2025

Addis Ababa, Ethiopia

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## **ACRONYMS AND ABBREVIATIONS**

ASTs- Advanced Skills Teachers

ESDP – Education Sector Development Program

MOE – Ministry of Education

NAGs - National Administration Guidelines

NSA- Netherlands School Leaders Academy

OECD- Organization for Economic Co-Operation and Development

SDPRP- Sustainable Development and Poverty Reduction Program

SPSS- Statistical Package for Social Science

## ***Abstract***

*Educational projects are of great interests to the Stakeholders, government and the beneficiaries. Among other projects, technology based projects are among the highly funded projects by the government and others. This study sought to investigate the implementation of the e-school project management system in government primary schools of Addis Ababa city administration. 254 schools were having been under e-school project. The study adopted a mixed-method research design specifically convergent design method with a target population of 254 schools. From these schools, principals and ICT professionals (227) were selected by stratified sampling technique, to select Education bureau level; Information System division employees (6), Sub city data management team leaders (11) purposive sampling method and total of 244/569 were selected. Questionnaire and document analysis were used to collect primary was used and secondary data from the target population. The study found out that existing planning practices of e-school, stakeholder involvement, schedule management and monitoring and Evaluation had significant influence on the implementation of the e-school project management system. The study concluded that existing planning practices of e-school, challenges of the implementation of e-school, monitoring and evaluation; project stakeholders impact in the implementation of the e-school project management system. The findings also established an e-school project not being implemented according to the set timelines, budget provision, and quality. Consequently, the study recommended that the implementation agency should ensure proper mechanism for project planning, consultative forums for stakeholder involvement, well laid out implementation and clear structures for monitoring and evaluation are in place for effective implementation.*

# CHAPTER ONE

## Introduction

### 1.1. Background of the Study

Education is a powerful instrument that unlocks the door to prosperity of a nation. Information and communication technologies are among the main enabling tools of modern civilization. These days, it is an integral part of our lives. Globally, the economy needs ICT infrastructure for its activities such as the facilitation of trade and commerce (Hua&Heristein, 2003). E-school is a necessary element of an education system that enables policy makers to make critical modifications to the system in order to improve the quality of education” (Abdul-Hamid, 2014).

*“Recently, E-school is defines as: Ensemble of operational processes, increasingly supported by digital technology, that enable the collection, aggregation, analysis, and use of data and information in education, including for management and administration, planning, policy formulation, and monitoring and evaluation. E-school helps to streamline the flow of information, eliminate duplication of information for decision making, provide information for policy dialogue and facilitate the use of relevant information in decision making by planners at all levels” (UNESCO, 2010).*

school data can also be used in financial planning, improving exam performance, instilling discipline, nurturing the student talents, comparison to other schools, reporting to authorities, minimizing the wastage of students as well as making the school projections. Well-functioning E-school can ensure achievement of national goals to provide quality education, which is the basis for facilitating economic growth and sustainable development. (Luena, 2012) Many countries around the world have spent significant resources but still struggle to accomplish a functioning E-school. On the other hand, countries that have created successful systems are harnessing the power of data to improve education outcomes (Abdul-Hamid, 2017). As Tegegn (2003) indicated an effective E-school should consist a life cycle of data collection, data processing, data analysis, publication & feed-back.

In Turkey E-school is a dynamic, expanding, thriving, sustainable, and computerized; web based Student Information Management System for Turkey's Centralized Education System that provides documents for schools in order to cope with student data. It is developed by using innovative web based software and database technologies for enhancing Reporting Module, Parent Notification Module, and Timetabling Module (Mehmet.2023).

It provides school and educational administrators, policy makers and teachers with easy management of students' information procedures and those processes function fast and economic by automation which lessens bureaucratic procedures. It is now more accurate to find out the students not registered, the absentee and also to monitor the academic success, physical and cognitive development, behavioral patterns. The system helps the administrators, teachers and policy makers make accurate, fast analysis and decisions about such as immediate needs and development of education system by enabling them to carry out their task easily, efficiently, and timely manner (Mehmet.2023)..

E-school results in a more accurate, clean, legible and organized data over the long term by improving information characteristic of students. This system makes data processes easier by checking the sameness of data items within multiple fields, establishing a mutual relation between them, executing mathematical operation on them, and fetching only the data that matches each single principle. The education statistic is strengthened and reliability is improved by producing more relevant, reliable and timely data (Abdul-Hamid, 2017).

E-school plays an important role in expediting preparation of academic research, policies development studies, strategic plans and projects by referring emerging organizational issues and providing appropriate, valuable and accurate information. It is easy to consider administrative and functional scalability of Education System for district, province, regional and national based( Mehmet.2023)..

Making centralized exams and enrollment procedures automated removes many difficulties and time consuming manual bureaucratic processes. By Non-Attendance and Catch-Up Module, the students under risk of absenteeism can be determined and so the required precautions can be taken easily in time have even provided training to teachers to ensure that schools succeed (Abdul-Hamid, 2017).

In new education and training policy of Ethiopia one of the principles of policy implementation shall be based on the Modern technology and competitiveness: Implement the education and training policy based on modern technology support and competitiveness. That means the implementation of the policy must be considering technology (education and training policy of Ethiopia; 2023)

In the ESDP VI, the education system is progressively implementing and using digital technology for assessment and examinations; an online education and training program for teachers and school management; data acquisition, processing and management in the education sector; and digitally strong schools (ESDP VI, 2020-2025).

Education plays a major role in the development of a country. It is a public good for social, political and economic transformation. Therefore, in the digital age, students must be equipped with the digital knowledge and skills to contribute to the development of their country. Therefore, the use of technology in schools is becoming common in different countries.

To fill the gaps and create an education system that produces productive and creative students who are sufficiently competent in the global market, ESDP VI foresees a paradigm shift to transform the education system through the effective and efficient use of digital technology. To achieve this, four sub-components are designed: ICT infrastructure for effective teaching and learning, enhancing the capacity to use digital technology through institutional capacity building, digital content development and digital learning for inclusive access to education.

Therefore, by implementing the activities listed in each sub-component, digital technology will be used for assessment and examinations, the education and training programs for teachers and head teachers, data acquisition, processing and management in the education sector, and the gradual creation of digitally strong schools (ESDPVI, 2020-2025)

Although there had been some statistical reports before, Ethiopia's effort to establish modern education management information system started at the end of the 1980 by the name "Education Information System Project" with the assistance from SIDA. At the half of 2024, E-school in Addis Ababa is managed by a body called the E-school project under the head of the Education Bureau and has the mandate of preparing/developing software to, consolidating data, preparing and developing software for data management (AACEB, 2024).

On the other hand, Addis Ababa Education Bureau E-school team is involved in data capturing and using for different purposes such as provide data for the Federal Ministry of Education. Since 2004, Ethiopia implemented the computerized ICT model known as Stat.Educ2, based on the assessment of the country's education management system. Ethiopia's Education Management Information System has grown in recent years. Now, E-school is available at city levels, and with support from the respective ICT directorates and offices, are collecting and processing education performance data which can be used for enhanced service delivery (MoE, 2024). This created favorable conditions for E-school process at all levels of education system and at federal level it's structure is ICT Directorate in the year 2015. More authority and responsibility is given to Addis Ababa education bureaus, sub city and schools, which is under implementation in Addis Ababa education system as well. Recently, in last 2024, ICT & E-school team are integrated as one directorate and responsible for E-school activities such as collecting & analyzing data, writing the report, and disseminate to all stakeholders.

The rational of E-School project were enhanced administrative efficiency through streamlined processes, Provide centralized institutions management platform, Improved access to educational resources and materials, Facilitates personalized and adaptive learning experiences, Promotes collaboration and communication among School and College stakeholders, Enables anytime, anywhere access to learning materials and information, Enhances data management and reporting capabilities, Empowers educators with tools for effective teaching and assessment.

## **1.2. Statements of the Problem**

Technology project management system implementation is a complex project in technology innovation and organizational change management (Kumar et al, 2002; Markus & Tanis, 2000) and it is not an easy task. It requires the coordination of many activities of an organization and a close cooperation of employees, managers, IT specialists, business analysts, consultants, and Vendor Company. Furthermore, the e-School project management system implementation differs from the traditional systems implementation in scale, complexity, organizational impact, user's participation, cost, and business impact.

The implementation of e-School project management system in organizations is an enormously complex undertaking. It is a high-risk project that needs to be managed and planned properly because it can affect nearly every aspect of school performance and functioning.

Another challenge is to identify the factors that determine the success of the implementation of e-School project management system are these areas and operations which should be focused on primarily to achieve the most satisfying results of the e-School project management system implementation. It seems that the theory of success factors gives good basis for stating what criteria should be followed during implementation project.

A study conducted by Nah and Delgado (2006) identified critical factors for School project management system implementation. These factors are: plan and vision, change management, School project management system composition, management support, project management, infrastructure, the organization, financial, and monitoring and evaluation. Since this study was based on a developed country which is significantly different from a developing country like Ethiopia.

Aldammas & Al-Mudimigh (2005) classified eleven factors affecting school project management system implementation. These factors are: school project management system team work and composition, top management support, effective communication, project management, plan and vision, project champion, appropriate the project and legacy systems, project process reengineering and customization, change management program and culture, software development testing and trouble shooting and monitoring and evaluation. This study was also conducted in Saudi Arabia which is a far more developed country compared to Ethiopia.

E-School project management system is newly emerging technology and getting popularity in Addis Ababa. However, the challenge facing many schools implementing e-School project management system in Addis Ababa is ensuring that the School project management system projects are implemented successfully, and the benefits of the system are realized. E-School project management system implementations in Addis Ababa are recent phenomena and there are knowledge gaps in the area. E-School project management system implementation in these schools have been marred by delay of schools time beyond scheduled time frame, completion of projects with excessive over budget and functionality problem of E-School project

management system as showed by finding of research conducted by Belachew and Kifle, (2015). Addis Ababa Education Bureau begins E-School project management system implementation in June, 2024. Phase by phase and comprehensive E-School project management system and continue now. Based on the internal company report, at the completion of School project management system implementation, it run over budget, delayed beyond project time schedule and performed below company's expectation (Addis Ababa Education Bureau, 2024).

Therefore, the aim of this research is to determine the Factors affecting the implementation of the e-school project in government primary school Addis Ababa administration. To the best of the researcher's knowledge, no study had been conducted in Addis Ababa education bureau regarding factors affecting the E-School project management system implementation. This study is to determine the implementation of the e-school project management system implementation in Addis Ababa education bureau.

### **1.3. Research Questions**

1. What are the existing Planning practices of e-school project management system implementation in government primary schools of Addis Ababa?
2. What is the extent of stakeholder's awareness about e-school project management system implementation in government primary schools of Addis Ababa?
3. What are the major challenges that hamper effective implementation of e-school project management system in selected government primary schools of Addis Ababa?
4. What monitoring and evaluation mechanisms are in place to assess the implementation process of the e-School Project Management System, and how effective are they in ensuring project success?

### **1.4. Objective of the Study**

#### **1.4.1. General objective**

The general objective of this study is to investigate the implementation of the e-school project management system in government primary schools of Addis Ababa city administration.

### **1.4.2. Specific Objectives**

1. To assesses existing Planning practices of e-school project management system in the selected Addis Ababa city government primary schools.
2. To analyze the extent of stakeholders' awareness about e-school project management system in Addis Ababa city.
3. To identify the major challenges that hampered the implementation e-school project management system in Addis Ababa city.
4. To identify the mechanisms of monitoring and evaluation of the implementation of e-school project management system in government primary schools at Addis Ababa city administration.

### **1.5 Significance of the Study**

Contemporary education involves widespread use of Information Communication Technology for quick and effective communication, which leads to improved students results. The existence of E-School project management system implementation in primary school in Addis Ababa Education Bureau increases the sustainable overall development of schools.

Therefore, this study is demonstrating how and what the way of implementation of E-School project management system in primary school. The study is important because it would help the government to assess the challenges in implementation of E-School project management system implementation Addis Ababa City, so that the decision to continue or stop it can be made. Additionally, the study's outcomes will benefit to improve and to evaluate its project management performance; the concerned government body will know how the project performance is in line with the targeted mission and objectives of the government. The study will also provide valuable information to government and other interested parties like the NGOs; Civic organizations who would like to come on board to help poor children get their Information Communication Technology education. In addition, the study will be important because the findings would provide information that will be essential to a number of stakeholders.

## **1.6 Delimitation of the Study**

The scope of this research centers on Implementation of the e-School project Management System in Primary Schools of Addis Ababa city Administration. The field of technology is very broad and so is the same with management for both school and non-school areas. But the topic narrows down the research scope to Implementation of e-School project Management System in Primary School of Addis Ababa city Administration. On that account, the research project will focus specifically on the implementation of e-School Management System project in Primary School of Addis Ababa city Administration.

## **1.7 Limitation of the Study**

It is obvious that research work cannot be totally free from limitation. The following are some limitations. One apparent limitation was that most of the school principals, vice principals, Sub City and city were busy and had no enough time to respond to questionnaires and interviews. Some of them who have enough time were also reluctant to fill in and return the questionnaire as per the required time. Another limitation was lack of recent and relevant literature on the topic, especially on Ethiopian condition. There is shortage of books or lack of updated related literature in the area. This might have affected the richness of the study in scope and depth. However the researcher overcame those limitations by devoting his time, consuming his finance and searching materials from neighboring universities.

## **1.8 Organization of the Study**

This thesis work has five chapters. The first chapter includes introductory part with background of the study, background of the project, statement of the problem, research objective, research questions, and significance of the study, limitation of the study, and scope and delimitations of the study. Chapter two is composed of the review of various books and journal articles to base the study on existing literature. This chapter discusses relevant issues to build understanding of the subject matter. Chapter three contains the details of the research methodology to gather and analyses data from which findings are drawn. Chapter four contains the analysis of the data gathered by means of data collection methods and instruments indicated in the methodology part.

The last chapter discusses about summary, conclusion and recommendation. The references used in the study, interview guide and questionnaire used are included in the Appendix section.

## **1.9 Definition of Key Terms**

The terms used in this study may convey a different interpretation in a different context. Therefore, to avoid some possible confusion, the following are operational definitions of some of the terms used in this study.

**E-School:** - is a powerful school management system in Ethiopia, designed to simplify school administration, student registration, and academic performance, e-School is here to help your school thrive in the digital age.

**Financial Resources-** All the money, either liquid or solid that is needed to meet all the expenses that are geared towards seeing ICT projects become a reality.

**ICT Infrastructure:** tools requirements for ICT/hardware and software/ that enable a network to function, e.g. electricity, rooms, computer laboratories, computers, internets and plasma TV.

**Implementation of ICT in education** -Adopt or execute or take action has officially planned, or Interest in and use of ICT in education appears to be growing.

**Information Communication Technology** - in this paper refers to the computer and internet connections used to handle and communicate information for learning purpose. (Arifa 2020).

**Infrastructure Facilities** -A set of interconnected structural elements that provide framework supporting an entire structure of development. Include buildings, laboratories and electrical connections.

Public primary Schools -State funded educational institution.

**School Administrative Practices** -Refers to ways and procedures of directing the operation of a given project and the entire decision making process.

**School vision-** Planning, organizing and funding, Staff development and ICT infrastructure, Implementation, improving access and equity, Maintenance and sustainability of ICT infrastructure in schools, Legal and moral issues of ICT in school, Education theory, pedagogy and curriculum improvement and General School administration(Arifa. 2020).

**Stakeholders** -Are individuals/groups/firms/organizations that have either direct or indirect interest in the ICT projects. They include the students, teachers, government, NGOs, politicians, religious leaders among others.

**Teachers ICT skill-** having- knowledge of ICT or understanding of internet use, computer use and application ICT in education (Al Mofarreh. 2016).

## **CHAPTER TWO**

### **REVIEW OF RELATED LITERATURE**

#### **2.1. Definitions of Project**

Scholars gave a variety of definitions to a project upon their concern of profession. Harvey defined a project as a group of tasks performed in a definable period to meet a specific set of objectives (Harvey, 2002). A project has been also defined as “A complex, non-routine, one-time effort limited by time, budget, resources, and performance specifications designed to meet customer needs (Gray, 2020). A project is also regarded as a business case that indicates the benefits and risks of the venture, demonstrating a unique set of deliverables, with a finite life - span, by using identified resources with identified responsibilities (Bradley, 2002).According to (Wysocki, 2014) a project is defined as a sequence of unique, complex, and connected activities that have one goal or purpose and that must be completed by a specific time, within budget, and upon its specification. A project has been defined in PMDPro (2013) guideline as an organized endeavor that accomplishes a specified non-routine and low-volume task. The common definition for a project is “A temporary endeavor undertaken to create a unique product, service or result” (PMBOK, 2021).

A unique product of a project refers to the key characteristics of the results. Though, it might have similar elements, processes, and results with other similar projects. It means the individual, location, design, environment, people involved, and the overall situation is unique to the given individual project. The temporary nature of a project indicates a project has a specific beginning and end. The end can be when the objective is achieved or cannot be met or terminated because of a variety of reasons. But the deliverables of a project might last for years and centuries (PMI, 2017).

There are many ways to classify a project. Based on the location and scope of a project it can be classified as a national development project or a rural or urban development project. Based on the resources it can be classified as a national development project or a rural /urban development project. Based on resources it can be infrastructural, production, service, or mobilization projects. Based on size and scale it can be classified as normal, crash, or disaster projects. Based

on ownership it can be a governmental, nongovernmental, or joint venture project. Similar to these, projects might have numerous categories accordingly (Mishra & Tarun, 2021). Similarly, Projects in NGOs vary with each other depending on their objectives. Social Empowerment, infrastructure improvement, service development, and environmental conservation programs are some of the initiatives that NGOs take responsibility for. They might also participate in political issues indirectly with the permission of the host country (PMDPro, 2013).

## **2.2 Project life cycle**

The life cycle of a project consists of phases that connect the beginning of a project with its end to provide better management control through appropriate links to the ongoing operation of performing organizations (Adrienne, 2019). Every project goes through a serious set of activities or phases starting from initiation to completion. A standard project typically has four major phases called initiation, planning, implementation, and closure. Altogether, these phases represent the path a project takes and identify the logical sequence of activities that accomplish the project's goals or objectives from the beginning to its end (Adrienne, 2019). The exact sequence of project life cycle diagrams can vary considerably between industries and organizations. Different organizations have project life cycles that are represented by different designs which might be in circular models, linear models, or modified spiral models though their overall objectives are the same (PM4NGO, 2020).

Project cycles can also be classified as predictive, iterative, incremental, adaptive, or hybrid based on their time frame determination (PMI, 2017). PMBOK (2017) guidelines also stated any standard project has 4 phases. These are initiation phase, planning phase, execution (implementation) phase and closing phase. Similar to other projects in the context of ID projects, a project goes through several progressive phases that lead from the identification of needs and objectives, through the planning and implementation of activities (Golini, Kalchschmidt & Landoni, 2015). PMDPro (2013) subscribed to its own six- step project phase model for development projects. These are Project Identification and Design phase, project set up phase, Project Planning phase, Project Implementation phase, Project Monitoring, Evaluation and Control phase, and End of Project Transition phase. The PMD Pro guide line splits the initiation phase into two. The first one is the project identification and design phase where the scope and

objectives of a project is defined, stakeholders are identified and the project's charter is developed. Next, the project set up phase proceeds where specific objectives and the project charter are agreed upon.

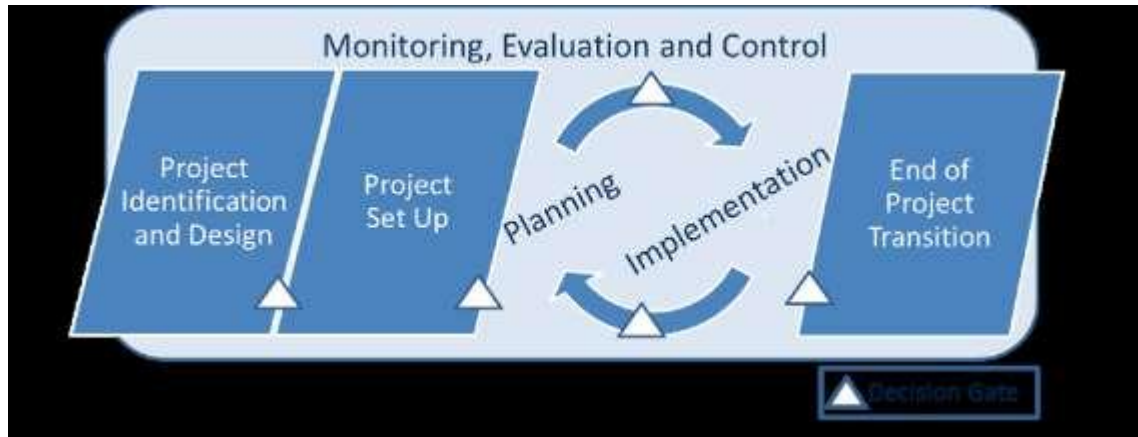


Fig 1. The PMD Pro project phase model (PMDPro, 2013)

### 2.3 Project management in Education (PM)

Project management in education has become an essential part of many educational programs, as it has proven effective in improving students' problem-solving, decision-making, and communication. Project management in education is an essential part of the curriculum for students pursuing careers in various fields. Several studies have investigated the impact of Project management in education on students' learning outcomes and subsequent job performance (Austin et al., 2013). Project management is a complex discipline that involves the planning, organizing, and execution of projects (PMI, 2017). It is a skill in high demand in today's workforce, and it is becoming increasingly important for students to develop these skills for success (Nieto-Rodriguez, 2019). The benefits students gain from learning Project management skills cannot be overstated. These skills can help students improve their problem-solving, decision-making, planning, organization, communication, collaboration, and adaptability (Zhang & Ma, 2023). Project management in education allows students to work effectively in teams and manage their time and resources. In addition, learning PM can help students prepare for the workforce in many different industries. A quick look at LinkedIn demonstrates the increased roles seeking project

managers and Project management skills. Students can gain a competitive edge when applying for jobs after graduation by learning these skills in higher education (PMI, 2021).

PM is increasingly valuable in the contemporary workforce, and educational institutions must integrate these skills into the curriculum while allowing educators to explore and learn PM concepts.

Project management processes and teamwork also enhance communication. Students who participate in Project management training become skilled communicators, which may give them the competitive edge they need to succeed in a project-based economy. This economy emphasizes flexibility, innovation, and a International Journal of Curriculum Development and Learning Measurement results-driven approach, with projects playing a central role in driving organizational success. Most of these necessary skills are central to the successful performance of Project management.

Antonio Nieto-Rodriguez's (2019) book, *Lead Successful Projects*, offers a comprehensive examination of the evolving landscape of the modern economy, examining a substantial shift towards a project-based business structure and moving away from traditional, operationally-focused business models that were prevalent in the past. This transition emphasizes the growing significance of PM skills, which are now considered essential in several sectors of the economy. According to Nieto-Rodriguez, possessing these skills is no longer considered a professional asset but a critical requirement. His insights into this shift provide valuable information about the changing dynamics of the economy and the increasing importance of Project management.

The growing emphasis on flexibility, innovation, and a results-driven approach characterized by the shift towards a project-based economy further supports the need for learning these skills early in life. Thus, Project management training is becoming essential for a wide range of professionals.

## **2.4. Project management processes**

According to PMBOK (2017), Knowledge Areas and Process Groups are the two main categories in the area of Project management that are considered as a backbone. Process Groups are methods through which one executes the processes required to do the project management. The

application and integration of these rationally organized sets of project management processes makes the project objectives pragmatic. Since every project is unique in its own manner the process groups must be used accordingly to fit the project. All processes are linked to the outputs they produce. The outputs of an individual process can be either input to another process or become a deliverable of the project phase. Adjustments in one process group might affect the other one also. The five project process groups which are identified by PMI, (2017) are explained as follows.

Initiating process: - This process aims to define a new project or the new phase of the existing project after getting authorization to start. Activities like setting clear phases of the activity, initiating the participating team members, allocating the budget, and choosing stakeholders are some of the activities that are performed in this process PMI, (2017).

Planning process:- This process is responsible for limiting the scope of the project, refining the objective that the project aims to achieve, and defining the actions towards achieving those objectives PMI, (2017).

Executing process:-In this process different activities related to integrating and coordinating people and resources are executed based on the project plan PMI, (2017).

Monitoring and controlling process:-as its name implies this process performs activities related to following up, reviewing, and regulating the progress of the project. Following the plan, it also rules out areas that require a change of plans and initiates the required changes or improvements on the project management plan PMI, (2017).

Closing process group:-This process group makes sure that all tasks are completed in each process group then formally closes the phase, the project, or the contract PMI, (2017).

### **2.4.1. Project Planning**

Planning process entail making informed decision pertaining to what is to be done, whose responsible, how and when it should be done. It's a process used to determine action course in order to achieve desired results. It is important in bridging the gap between the current state and what needs to be accomplished thus making it possible for event to take place within projects

which could have not happened. Planning therefore is essential in the first stage of the project. According to Moodley (2002), the major aim of planning in the initial stage is to ascertain that objectives of the project and goals are attained. Each project is unique in terms of objectives, timelines, costs, and needed resources (Bartol, 1991). This is an indication that educational infrastructure projects are also different in terms of time, resources, budgetary allocations among others based on the nature of the project. Project planning also anticipates future events and makes informed to decision pertaining to best course of action. Project planning produces future action scheme, in order to attain results, at specified cost, in certain duration of time. It aims at influencing, exploiting, controlling, directing the extent and speed to which change is achieved and might deliberate to bring about change within its decision making.

Planning process is deliberate and mindful determination for purposes of formulating design and sequence of event for purposes of attaining project objectives. It's systematic and thus helps in decision making on events happening future, it also determines objectives of project activities and necessary steps needed to achieve them. Therefore, planning is the processes of selecting and relating factual matters and making assumed decision pertaining to the future through formulation and visualization of project activities necessary for purposes of attaining project outcome. Therefore, it helps in deciding project future and ways of making it happen. Numerous studies have established that the planning process is essential to attain organizational success.

### **2.4.2 Project scope management**

Scope is the way to describe the boundaries of the project. It defines what the projects deliver or not deliver in clear terms. Ambiguity in scope leads to confusion among project stakeholders with regard to what to expect and what not to expect from the project. A clearly identified scope helps stakeholders share a common understanding of the benefits of the project and the work required to successfully deliver project outcomes and outputs (PM4, 2020). Project Scope Management incorporates the processes involved in defining and controlling what is or is not required in the project to complete the project successfully (PMI, 2017). This process ensures that the project has identified goals and objectives that have been documented and each objective has a well-defined set of indicators to monitor their progress (PM4 2020).

**Scope Planning Management:** It is the process of creating a scope management plan that documents how the project and product scope is defined, validated, and controlled. The key benefit of this process is that it provides guidance and direction on how the extent of the work can be managed throughout the project (PMBOK, 2017). This process helps to manage any changes to the project which might alter the resources or schedule of the project. If this critical process is not well managed the project manager might deal with scope creep .which means when the project manager decides to take additional work from stakeholders without a corresponding increase in time or budget which is one of the leading causes for project failure (PM4ngo, 2020).

**Collecting Requirements:** This is the process of defining, documenting, and managing stakeholder needs and requirements to meet objectives. Primarily this process provides the foundation for defining the project scope. (PMBOK, 2017)

**Defining Scope:** It is the process of developing a detailed description of the project and product. The primary purpose of this process is to describe the product, service, or result boundaries and acceptance criteria (PMBOK, 2017). Errors in scope definition often result in unnecessary work being included in the project which results in errors to occur in budget and time estimates. These estimated failures can result in schedule slips and hence finally cost overruns (PMD Pro, 2013).

**Creating Work Breakdown Structure:-** WBS is a central tool of project managers in most sectors, it is relatively unknown in the development sector (PMDPro, 2013). WBS Is the process of subdividing project deliverables and project work into smaller and more manageable components (PMI, 2017). Breaking the project down into a hierarchy of work tasks makes it easy to define the time and budget of the project. The primary purpose of this process is to provide a framework for what has to be delivered (PM4ngo, 2020). The WBS includes a level of comprehensiveness and detail that is often absent in the logical framework. There might be additional categories of work included in the WBS that were not included in the logical framework. The WBS is intended to provide the level of specific detail that is often missing in the logical framework (PMD, 2013).

**Planning Quality Management:** This is the process of identifying quality standards for the project and its deliverables, and documenting how the project can demonstrate fulfillment

with quality requirements. This process provides guidance and direction on how quality can be managed and verified throughout the project (PMI, 2017).

**Managing Quality:** This is the process of translating the quality management plan into executable quality activities that incorporate the organization's quality policies into the project which implies the execution of the quality plan (PMDEV 2020 & PMBOK 2017). This process includes quality audits performed by the project team during every project deliverable and reevaluating the quality standards and any assumptions made in the quality plan. In development projects Quality assurance focuses on prevention measures during the project implementation phase and checks to see that project staff, consultants, or project partners are following the quality standards. In certain conditions meeting quality standards could mean meeting legal and regulatory standards set by the local government or the donor agency (PMDEV, 2020).

**Quality control:** This is the process of monitoring and recording results of executing the quality management activities to assess performance and ensure the project outputs are complete, correct, and meet predetermined specifications and customer expectations. The primary purpose of this process is to verify that all the project deliverables and the work meet the specified requirements by key stakeholders for final acceptance. The Quality Control process determines if the project outputs do what they were intended to do. Those outputs need to comply with all applicable standards, requirements, regulations, and specifications (PMI, 2017). Quality control outputs include a quality management plan, quality audit reports, and quality improvement records (PMDEV, 2020).

### **2.4.3 Resource mobilization in Project Management**

Project cost management is one of the most important aspects in project management that require much attention since its mishandling can lead the project into a complete failure. It can affect the end result by either not meeting the performance requirement set by the sponsor or a total cancelation of the entire project if not carefully managed. It is the process of estimating how much the whole project will cost by breaking down the project into component and determining the cost (Mintzer, 2002). This is done by taking into account the entire scope of the project i.e. all the activities needed to be done in the whole project, the materials and equipment involved as well as the labor factors. In his 2009 edition, Kerzner identified some tools and

techniques that can be used for project budgeting which include recent experience in similar work, professional and reference material, market and industry surveys, knowledge of the operations and processes, estimating software and databases if available and interviews with subject matter experts (Kerzner, 2009).

There are two ways that a project budget can be planned according to Mintzer (2002). It can be done either by top down or bottom up budgeting. The top down budgeting is the method which starts with the estimation of the entire project then allocating funds to the various components of the project or from the top management to the lower-level managers. An example could be that of a big project from large corporations or a government budget for a certain ministry (Mintzer, 2002). On the other hand, bottom up budgeting is where budget is started from the team members of the project and the works they need to do taking into consideration including miscellaneous and make the estimations going up through to the total budget. This method is commonly used in smaller projects like those of NGOs as it is able to give the project manager a clearer view as to how much the whole project will cost knowing all the tasks that need to be performed in the project (Mintzer, 2002).

This means that, in order to make a good budget for a project, it is important that the project manager is able to identify all the requirements in the project so that the scope of the project is clearly defined. Failure to identify some items in the project can have negative implications on the project since their acquisition price may be increased as the time draws close as compared to that of those which were adequately researched before purchase or hire (Mintzer, 2002).

Development project resource management can improve schedule performance by increasing the quantity of resources, productivity and utilization. Total resource quantities and associated productivities are often limited and difficult or expensive to improve, leaving resource utilization as a primary management tool to reduce project durations. Managers can have a large effect on resource utilization through the policies they use to allocate resources among development activities, even when the total quantity and productivity of resources are fixed. For example a design manager can impact when all design components are completed by allocating the optimal fraction of the available designers to the initial design of components, checking

designs to identify needed changes, and the correcting or improving of component designs (John, 2007).

John (2007) indicated that applying too few resources to any given activity slows progress and applying too many can cause crowding that reduces productivity and wastes resources that could be used more efficiently by other activities. Therefore the effective and efficient allocation of scarce resources among development phases and among activities within phases is a realistic management opportunity for improving project schedule performance.

Sterman's (2000) description of policies as decision-making rules is adopted here. In this context resource allocation policies are formal heuristics or guidelines which managers use to make individual decisions about where to apply resources. For example the critical path method mantra is an informal resource allocation heuristic that could be formalized into a policy of filling all resource needs of critical path activities before allocating resources to other activities. Improved understanding of how resource allocation policies impact project schedules can improve performance.

Despite the potential of improving resource allocation policies to reduce development durations, relatively little research has investigated allocation policy design. Resource allocation policies can include many types of information, including resource needs across activities and time, productivities of resource types, and resource availability. The current work focuses on how three policy features impact development project durations: (1) whether to base allocations on current or future conditions, (2) how quickly to adjust resources and (3) how much control to exert over resource adjustment speed (John, 2007).

The design of resource allocation policies is difficult because of the inherent characteristics of development namely: iteration and delays in implementing allocation decisions. Development processes are iterative by nature. Iteration creates closed loop flows of work in which defects or optional changes for improvement are discovered, changes are made, and the work is checked or tested again for additional change requirements. Iteration can greatly magnify the total work effort needed for completion because rework can expose or create additional change requirements, which creates more rework etc. An emerging body of product innovation literature deploys the design structure matrix (DSM) methodology to explore the iteration and

allied interdependence problems (Sosa et al., 2004). This methodology accounts for iterations by mapping the dependencies between a value chain of innovation tasks in terms of precedence, information exchange requirements and probability of rework. Browning and Eppinger (2002) have explored a network using simulation to assess costs and schedule risks. Helo et al. (2004) have deployed DSM with systems thinking methodology to assess economic impacts of uncertainty within feedback loops and studied a number of alternatives in decision-making to possibly avoid iterative situations.

Effective and efficient resource allocation for iterative projects or project phases is difficult because of challenges in accurately predicting the sizes of work backlogs, specifically the amounts of work that must be initially completed, work to be inspected or tested to discover change requirements, and work to be reworked. These work backlogs evolve during projects.

Consider, for example a design phase without the benefits or burdens of starting with previously developed work. At the beginning of the phase all work packages must be initially completed and none are yet available for quality assurance or rework. As work is designed the design backlog (and the need for designers) decreases and the quality assurance and rework backlogs (and their resource needs) increase, but at different rates. The quality assurance and rework backlogs later decrease as work is approved and designs finished. The dynamics of rework cycles make work backlogs difficult to predict. Given the limitations of human cognition (Simon, 1996), especially in managing dynamic systems (Senge, 1990), managers cannot predict resource needs accurately enough for effective resource allocation.

Delays in making allocation decisions, implementing reallocations, and productivity ramp-up of re-allocated resources also make resource allocation policy design difficult. Resource adjustment delays can be large due to the number of information and physical activities that must occur for a complete change in allocation, the time requirements for those activities, and the prerequisite information needs in those processes. Intuitively, managers should incorporate resource adjustment delays into allocation policies. But several types of managerial errors can thwart these efforts, including the previously discussed challenges in predicting the sizes of multiple interacting backlogs, the uncertain sizes of actual delays, and the lack of understanding of how demand forecasting and allocation delays impact performance (Yassine et al., 2003)

assume there are no resource allocation delays, that these exchanges are perfectly synchronized, or both.

Resource allocation can be based on a simple heuristic that is, allocating resources to each development activity in the same proportion that the activity's current backlog contributes to the total backlog (Repenning, 2001). This policy is attractive for at least three reasons: (1) current conditions are relatively easy to observe and use, (2) current conditions are easier than forecasted demands to defend to policy critics and (3) basing allocations on current conditions and direct proportions is cognitively simple. But such a policy has at least two important defects. The policy fails to include the impacts of future changes in backlogs and the growth in total effort required due to rework. In contrast, Joglekar and Ford (2005) recommend basing allocations on estimates of future resource demands that are continuously adjusted based on current conditions. This approach partially addresses the challenges posed by allocation delays.

#### **2.4.4 Project Communications Management**

Communication process is essential since the entire world revolves around it and it is defined as the process involving who says what and to whom it is said and in which channel with which effect (Lasswell, 2018). Communication goes with exchanging information from one point to another in the project in an effective and efficient manner. There are numerous concepts and definitions regarding communication in the project, what matters it is how it is used in the management of the project to enhance effective implementation of the project. Communication is very vital tool to enhance management process. Behind the success of the large projects there is a network of effective communication which starts working at the start of the project, continues for its entire lifespan to provide regular updates as notifications of how implementation has to be done to increase performance capacity. Therefore, a good communication has to enable understanding of the strategy of the organization to enhance better commitment and lower resistance to change that leads to effective implementation of the project. The internal communication has vital strategic impact on the external communication with the stakeholders who work in supplying the customers.

In fact, the understanding of the stakeholders is dependent to ones of the employees. Hence, the communication done internally help to build the reputation of the project through provision of competitive advantage and ensure that strategic issues get solutions (Dortok, 2016).

Communicating through different means of sharing information among the members of the team is as well described by its level of openness, frequency, structure and formalization of the exchanged information. A pretty of time is required for communication in terms of preparation and planning before its occurrence in order to be formal due to schedule of meeting and meeting status whereas a communication initiated spontaneously such as short emails and quick phone calls is taken as informal and it is need among project team members because it eases sharing of ideas, discussions and evaluation of the team in a quick and efficient manner. Additionally, members of the team in the project does direct communication with no intermediaries because mediators are time consuming which can also cause faulty transmission. To share information openly is also very vital for the project because structure, frequency and formalization are not only the means that the project can dependent on, because lack of openness make a hindrance to sharing experience and knowledge that can be used in implementation and execution of project team tasks

### **2.4.5 Project risk management**

All projects are risky since they are unique endeavors with varying degrees of complexity. Risk deals with the uncertainty of the events that could affect the project. Risks can lead to cost, scheduling, or performance issues and may create other types of adverse consequences for the organization. Organizations should choose to take project risk in a controlled and deliberate manner to create value while balancing risk and reward. Project Risk Management aims to identify and manage risks that are not tended to by the other project management processes. When unmanaged, some risks have the potential to make the project out of the plan and fail to achieve the defined objectives. The objectives of project risk management are to increase the likelihood and/or impact of positive risks and to diminish the probability and/or impact of negative risks to optimize the chances of project success (PMBOK, 2017 &Doval, 2019).

**Planning risk management:** This process describes how to conduct risk management activities for a project. The organization's risk management framework is reviewed and adapted

to define the project risk management plan at project initiation. This process deals if the degree, type, and visibility of risk management are proportionate to both positive and negative risks as well as the importance of the project to the organization and other stakeholders. (PMBOK 2017 & Doval, 2019)

**Identifying Risks:-** Risk identification deals with finding all possible risks that may impact the project, and documenting their characteristics throughout the project. The project team members identify the potential risks using their own knowledge of the project, its environment, or from similar experiences of the past project. The tool for recording all the risks identified during the project is the risk register, which is stored in the central server of the project. The primary intent of this process is the documentation of existing individual project risks and the sources of overall project risk. It also brings together information so the project team can respond appropriately to the identified risks. (PMBOK 2017, PM4DEV 2020 & Doval 2019)

#### **Performing Qualitative m and quantitative Risk**

**Analysis:** Qualitative risk analysis assesses the importance of the Identified risks and develops prioritized lists of these risks for further analysis or direct mitigation. The team assesses each identified risk for its probability of occurring and its impact on project objectives. The key advantage of this process is to make an effort on high-priority risks. Quantitative risk analysis is a way of numerically estimating the probability that a project meets its cost and time objectives based on simultaneous evaluation of the impact of all identified and quantified risks (PMBOK, 2017 & PM4DEV, 2020).

**Planning Risk Responses:-** This is the process of developing options, selecting strategies, and agreeing on actions to address overall project risk exposure, as well as to treat individual project risks. The project manager and the team identify which strategy is best for each risk, and then design specific actions to implement that strategy. This process also allocates resources and inserts activities into project documents and the project management plan as needed (Doval, 2019)

**Implementing Risk Responses:** This is the process of implementing agreed-upon risk response plans throughout the project. The primary purpose of this process is to ensure the

agreed-upon risk responses are executed as planned to address overall project risk exposure, minimize individual project threats, and maximize individual project opportunities (PMI, 2017).

**Monitoring Risks:** Risk monitoring and control keeps track of the identified risks, residual risks, and new risks. It also ensures the execution of risk response plans and evaluates their effectiveness. Risk monitoring and control continue for the life of the project. The list of project risks changes as the project matures, new risks develop or anticipated risks might disappear. The primary purpose of this process is to enable project decisions to be based on current information about overall project risk exposure and individual project risks (PMBOK, 2017 & PM4dev2020).

#### **2.4.6. Project Stakeholder Management**

Stakeholders are individuals who own an impact or get impacted by the project. Project stakeholders can include clients, end users, contractors, consultants, labor unions, line organizations, public authorities, financial institutions, insurance companies, controlling organizations, media, third parties, and competitors (Pedrini&Ferri, 2019). Stakeholder management involves all the processes required in the identification of stakeholders, and the analysis of their expectations and influences as well. The key to effective stakeholder engagement is a focus on continuous communication with all stakeholders, including team members to understand their needs and expectations, address issues as they occur, manage conflicting interests and foster appropriate stakeholder engagement strategies in project decisions and activities. (PMI, 2017)

Identifying stakeholders: This is the process of identifying project stakeholders regularly and analyzing and documenting relevant information regarding their interests, involvement, interdependencies, influence, and potential impact on project success (PMI, 2017). The major project stakeholders are identified before the project is incorporated. A project is initiated with the major stakeholders in mind. In addition to the major stakeholders, there are almost always minor ones who don't seem significant but have an outsized ability to create project issues relative to their financial stake in it (Barreca, 2020). The main purpose of this process is to enable the project team to identify the appropriate focus for the engagement of each stakeholder or group of stakeholders periodically (PMI, 2017).

Planning stakeholder engagement: This process involves developing appropriate management strategies to effectively involve stakeholders throughout the project life cycle, based on an analysis of their needs, interests, and potential impact on the success of the project. Based on the project management plan, the stakeholder register, the environmental factors of the company, and the organizational assets, the project manager is in a position to develop the stakeholder management plan. This plan, which is a component of the project management plan, serves to determine the frequency and range of information provided to stakeholders (Rahai, 2017).

Managing stakeholder engagement: This is the process of communicating and working with stakeholders to meet their needs and expectations, addresses issues, and foster appropriate stakeholder involvement. Primarily this process allows the project manager to increase support and minimize resistance from stakeholders (PMI, 2017).

Monitoring stakeholder engagement: This process consists of an overall follow-up of the relations with the project's stakeholders and the adaptation of strategies and plans for their involvement. This process is supported by the project management plan, the major problems registry, work performance data, and project documents. The main objective of this process is maintaining or boosting the efficiency and effectiveness of stakeholder engagement activities as the project evolves and its environment changes throughout the project (PMBOK, 2017 & Rahai, 2017).

### **2.4.7. Project Monitoring and Control**

Project monitoring and control ensures that the implementation of project is undertaken in accordance with the terms and conditions (Cherop, 2016). Monitoring and control provides timely reports of all the significant project milestones and also coordinates internal monitoring and evaluation of the supply chain function in respect of the project being undertaken. Meredith and Mantel (2012) cited time (schedule), cost (budget) and scope (performance) as the key project items that need to be monitored and controlled.

Time and cost of public projects are clearly prescribed in the public procurement plan format (Chanzu&Kaswira, 2016). According to section 47 (b) of the public procurement and oversight authority (PPOA) act 2005 and Regulation 31 of the Procurement Regulations (2006), public project contract variation is effective only if the price variation is based on the prevailing price

index obtained from Central Bureau of Statistics or the monthly inflation rate issued by the Central Bank of Kenya. Further, the quantity variation for goods and services must not exceed 10% of the original contract quantity while the quantity variation for works must not exceed 15% of the original contract quantity. The price or quantity variation can only be executed within the period of the project implementation as per the contract.

Project monitoring and control process should be perceived as a closed-loop system with revised plans and schedules following corrective actions. According to Brown & Hyer (2010), the planning-monitoring-controlling cycle is continuously in process until the project implementation is completed. As such, the monitoring and control process should be constructed as an integral part of the organizational structure of the project. Brown & Hyer (2010) highlight the importance of defining the key factors to be monitored and controlled in terms of scope, cost and time and the boundaries within which they should be controlled. They view monitoring as many tracking system from a simple checklist to sophisticated dashboard style approaches, for identifying variances from the original plan (Brown & Hyer, 2010). Chandra (2010) observed that as part of the planning process, a public project team should agree on the appropriate approach for monitoring key performance indicators (KPIs) during the life of the project implementation.

The concept of project control refers to the set of processes, decisions, and actions involved in responding to public project variances. Project control portends a project change management process for deciding when changes are appropriate and when to stay the course. Chandra (2010) identified project characteristics as a key factor that undermines effective project monitoring and control which tends to ultimately impact on the level of project implementation success. Project characteristics encompass the project's size, complex undertakings involving many organizations and people rendering it difficult to keep track of physical performance and expenditure on hundreds or even thousands of activities relating to the project (Chandra, 2010). Project characteristics poses more challenges of coordination and communication difficulties in cases where several organizations and people are involved in the implementation of the same project.

Frese (2012) concurs that effective project implementation requires continuous monitoring and measurement of time, milestones, people and equipment schedules. According to Reiss (2012),

properly done project monitoring and control will give the first hint that initial planning may not be going according to schedule..

#### **2.4.8. Technical Competency in Project Management**

Murch (2001) suggested that project managers should possess sufficient technical knowledge and skill to perform their jobs. This is particularly vital in the construction industry where the 12 majority of projects undertaken are highly technical and complex, and an understanding of engineering and scientific principles is essential. In such an environment, the project manager should have at least a working level understanding of the technical challenges the project team is facing. Technical skills enhance the ability of the project manager to lead and manage through an understanding of the complex issues that persist during a project life cycle. In a study conducted by Posner (1987) and cited by Meredith and Mantel (2002), successful project managers were seen as having relevant experience or knowledge about the technology required by the project, but seldom were effective project managers seen as technical experts. Posner (1987) advocates that reliance on only “technical expertise” was often found to be detrimental because it decreased flexibility and a willingness to consider alternative perspectives. However, project managers do need to be sufficiently well versed in the technology to be able to ask the right questions and acquire adequate insight in an attempt to manage outcomes.

A research conducted by Monson (2000) concluded that technical expertise does not correlate directly to successful Project Management. This is commonly reflected in the organizational structure as the most technically competent personnel are frequently used as project consultants rather than as project managers.” Monson claims that it is no accident that significant problems in PM arise in engineering related professional areas. Engineers, as well documented, are taught with a curriculum that generates a correct answer (outcome based) without partial credit allotted for the work supporting the final answer (process based). For example a research study related to project characteristics conducted by Williams (2000) implied that as technical complexity increases, the likelihood of project success diminishes. 13 The bottom line is technical competence (the ability to solve complex engineering or scientific problems) serves to enhance the project manager’s credibility with customers, senior leadership and the project team. However it is not apparent that the project management’s credibility is the most critical factor for project

management competency. Orvis (1987) indicated that the core skills of engineers relate to the application of logic and engineering principles since scientists and engineers often perform numerical calculations. Their operations range from the single task of determining the value of a function to the complex task of numerically integrating a differential equation – tasks that require considerable skill, time, and energy.

## **2.5. Challenges and Overcoming of Project Management in Education**

### **2.5.1. Challenges of Project Management in Education**

Challenges of managing projects in education are explained by the specific character of the sphere: very often, a number of people working in educational institutions are far removed from the business environment, teamwork, or latest technology, which makes the process of managing academic projects much more difficult. This is why it's so important to choose the right approach to project management to ensure the successful completion of projects. Let's consider some challenging examples of project management in education. The issues listed below are among the most common project management challenges, at the same time; they are driven by specificity of the educational sphere (<https://www.epicflow.com>).

**Improper project planning in education:** The backbone of a successful project is thorough planning. It involves setting clear goals, defining roles, estimating time and costs required for project implementation, planning resources and project processes. As for educational institutions, you can't imagine their work without lots of planning, too: lesson plans, curricula, timetables, etc. However, planning a project is a different story, which requires certain knowledge as well as consistency, scrupulousness, and a clear idea of how the end result is to be achieved. People working at educational institutions who are eager to start implementing their projects may neglect the phase of their detailed planning or not pay enough attention to it (<https://www.epicflow.com>).

**Inability to respond to changes quickly enough;** There has been a lot of change in various aspects of education over the past few decades, but the most drastic change occurred in 2020 with the COVID-19 pandemic – it's transition to online teaching and learning. This process was really painful both for students and educational institutions and was accompanied by a number of challenges – from technical issues to inability to master the new mode of teaching and learning

quickly enough. As for managing projects in education, such an approach is relatively new to the educational sector, which requires acquisition of new skills (e.g. work in a team, a lot of communication related to the project, planning, etc.) by the managerial and teaching staff of an education institution (<https://www.epicflow.com>).

Of course, we cannot but mention difficulties associated with digitalization. Educational sector has not been very quick in the adoption of new technology. Like in other industries and spheres, the COVID-19 pandemic has accelerated this process forcing teaching and managerial staff to master necessary tools as quickly as possible. However, a great number of workers weren't ready for such an abrupt change towards a lot of online working. It can be still difficult for them to adapt, which, in particular, creates hindrances in the process of implementing various educational projects.

Lack of human resources for project management for education; this challenge is typical for a great number of companies and organizations, whether it is a fast-developing IT company or a state institution. As for educational institutions, the issue of insufficient staffing can be explained by the following factors: new professions and knowledge areas emerge faster than it's possible to find a corresponding teacher who'd be ready to work at the educational institution, which gets complicated by time-consuming procedure of obtaining a license for corresponding educational services; The job of a teacher, especially at the educational institution, is not quite popular with young people, therefore as elderly staff members retire, it can be difficult to find substitutes for them as quickly as needed. There also may be numerous reasons why staff members refuse or are not able to participate in educational projects (Mehmet. 2013).

Budget constraints; in a number of countries, the sphere of public education is associated with underfunding: domestic governments, being the main source of funding, don't provide sufficient financial resources for educational needs. For this reason, educational institutions often lack enough financial and material resources for their projects, e.g. computers, equipment, software, etc. The situation has only got worse with the pandemic outbreak: according to the report, there is a significant slowdown in public education spending across the globe (Mehmet. 2013).

Changing educational project requirements; Educational standards and requirements are changing as time goes on, which together with digitalization trends or peculiarities of national educational

systems can lead to changing requirements to the projects being managed. For example, ex-USSR countries are still in the process of transition to up-to-date international educational standards, and these changes can be introduced throughout the academic year. Another source of changing requirements is the inconsistency between the requirements of different departments of an educational institution. In all fairness, this challenge is not as common as in, for example, product development projects, but it shouldn't be neglected anyway.

Difficult to measure success; When it comes to the educational projects that involve interaction of teachers and students, their final result may to some extent depend on students, which brings some uncertainty about the final outcome. For example, in projects that are aimed at gaining knowledge or forming certain abilities or skills in students, it may be rather difficult to assess the real result: the final assessment may not provide the truthful overview of the results obtained, and it's difficult to trace whether the chosen approach was really effective over the long run. Besides, much depends on students and their efforts to master certain skills. These factors make it sometimes difficult to analyze the final outcomes of the implemented project and use this experience for future projects (Polat&Arabaci, 2013).

Other challenges in education project management; managing projects in any area of human activity means dealing with people who are different in their behavior, thinking, past experience, etc. Therefore, other challenges of educational projects for the most part may be caused by human factor: for example, no project is immune to setting unrealistic expectations, establishing unrealistic deadlines, or miscommunication between project participants. Proper communication among project team members plays a crucial role in efficient project management, which is why it's so important to address this and other complex challenges in educational project management (Polat&Arabaci, 2013).

### **2.5.2. Overcoming Of PM Challenges in Education**

Anyway, all of the above-mentioned key challenges don't mean that you cannot succeed with your educational projects: these are quite achievable objectives. Applying a variety of project management techniques will provide a great help.

Start with detailed planning; you can't overestimate the importance of planning as it's an essential stage of the project lifecycle and allows you to some extent avoid further challenges like budget overrun, lack of resources, project delay, etc. If possible, involve other participants of the project into the planning process and establish clear goals, requirements, roles and expectations of all the parties involved (Akinloye, Adu, &Ojo, 2017).

Provide assistance to those who need it; Some of the employees may find it difficult to use certain software, be not accustomed to teamwork or struggle with other issues, so the best solution would be to provide them with assistance and support on their way to mastering new skills. Explain the benefits of project management and applying techniques and tools to those who doubt their usefulness (Akinloye, Adu, &Ojo, 2017).

Manage available resources; what makes project management efficient is the opportunity to deliver projects successfully by means of reasonable utilization of the available resources, even when there is a lack of them. Use resource management techniques (allocation of resources, leveling and scheduling).

Prioritize the tasks, so that the team members will be focused on the tasks of the highest priority at a particular moment.

Control projects; Implement data-driven project management into your educational organization's processes to get the desired project management outcomes. Project control is one of the most important aspects of project management together with analyzing resource performance in real time. Don't check individual tasks of every resource, but keep track of key projects in your portfolio. In fact, project management software can provide great assistance in tracking project progress (Polat&Arabaci, 2013).

Establish procedure for changing requirements; changing requirements may lead to scope creep, delays or even complete failure of a project. So every project participant should be aware that no changes can be made without following the established procedure involving the analysis of consequences that these changes will have on the project flow. Sometimes, you may need to go back to the initial plan and analyze what has led to budget overrun and eliminate this factor.

In other cases, it would be reasonable to engage more human resources: the educational context makes it possible to engage students, volunteers, or interns into the educational projects.

Think of requesting more financial resources, if possible (GoSchooler Writer September 16, 2021).

Final words; as we can see, despite the educational sector faces numerous challenges, most of them are quite manageable by means of numerous project management techniques. Of course, there are always some factors we cannot influence, or the ones that require more attention and thorough work, especially in the specific context of an educational institution. But despite possible challenges, the educational sector in general and educational institutions in particular can benefit from the application of project management and reach their organizational objectives faster, as implementation of project management provides them with an opportunity to be responsive to society's increasing demands for high-quality educational services (Akinloye, Adu, &Ojo, 2017).

## **2.6. E-School**

### **2.6.1. Definition of E-School**

A study in Turkey shows how teachers and the principal believe that the e-school system is adequate in terms of administrative relations, student affairs, and student report card work time (Polat & Arabaci, 2013). A developed web-based information system for school management provides leverage for schools that need the application to facilitate learning, teaching, and administration quality and effectiveness. It is always necessary to have a modern school management system information system (Pavlović, Randić & Paunović, 2014).

It is necessary to keep school records and manage them properly because it is an important aspect of the school's leverage in terms of keeping things in their rightful place to ensure quality processing and record-keeping. This will also help school managers in their decision-making process and to also enhance the implementation of usable records in schools that will lead to cost savings, transparency, easy accessibility, accountability, and retrieval of required information from their storage (Akinloye, Adu, &Ojo, 2017). The key areas that need to be present in a school information management system are open standards, interoperability, transition, accessibility, cost efficiency, statutory-based innovations, and usability (Strickley, 2011).

e-School is an on-premise and cloud-based solution that helps educational institutions handle accounting, class management, scheduling and other administrative processes on a centralized platform. Professionals can track the daily attendance of students and teachers, approve leave requests and generate monthly reports. E-School provides a dashboard, which allows staff members to view their schedules, upload class notes, create assignments and edit personal information according to requirements. Managers can record inventory, process payroll and automatically notify teachers, students and parents about upcoming events through SMS.

E-school is a complete, end-to-end Solution for your Institute (School, College, University, Academy, Coaching Center, etc.). E-School is an Online, Web/Cloud based System which enables you to manage your School efficiently. It's not only simplifies and automate the routine tasks, but also provides you more control, visibility and reporting with future trends & analytics. (<https://www.eschool.pk/>)

E-School is a powerful educational system with all backend administration functions of the educational institute and online application to bring management, administration, parents, teachers and students on a common interactive platform. It significantly reduces staff time spent on administrative tasks, also helps to improve data consistency and efficiency. E-School is a result of our years of research in education sector. We have developed this system in a very efficient manner so that we can customize it easily for any educational institute's specific requirements. We are working on few new add-on modules keeping in view the future needs of education sector. Pakistan's No. 1 School Management System (<https://www.eschool.pk/>)

The e-school management system is an online information management tool that helps with various school tasks. It helps schools such as colleges, universities, and even online schools to enhance their procedures. The system does this by automating jobs such as data input and analyzing data. Automation helps educational organizations save time and resources. It eliminated the need for manual supervision, therefore, cutting down on human resource costs as well. The scope of the e-school management system depends on the package that an organization would procure. In overview, this system should be able to cover basic tasks. These tasks include admissions, communication, online activities, and payroll processing. (GoSchooler Writer September 16, 2021)

### **2.6.2. Good Features of e-school management system**

There is a wide variety of e-school management systems to choose from. They offer different but similar services. So, before getting one make sure that you are choosing the best-fit system.

Admissions Management Admission is seen as one of the most important parts of school operations. It is often defined as just the enrollment procedure; however, admissions go beyond that. This stage involves attracting new prospects or leads, turning them into successful clients, and guiding them until they are officially enrolled in a class. The e-school management system should be able to simplify this and make the procedure easy for all parties. For example, the system should be able to handle student inquiries or questions regarding the admission process. Automating the response to student queries can help increase the conversion rate. The conversion rate refers to the number of inquiries that successfully turned into enrollments (GoSchooler Writer September 16, 2021).

Second, the e-school management system is also expected to handle student information management. After admission, the student directory must be updated with the new enrollees. It is highly recommended to have a system that can do all these processes. It ensures that the admission stage is smooth and continuous. Provide timetable management, communication tool, library management, mobile application, online classes and exams, online payments, employee information management, attendance, payroll, produces reports (GoSchooler Writer September 16, 2021).

### **2.6.3. Advantages and Disadvantages e-school management system**

**Advantages** Here are some of the advantages of a school management system. Saves Time, Easy File Management, Data-Driven Policies

**Disadvantages** everything that we enjoy has its own share of disadvantages. In a school management system, the disadvantages come from the fact that it is technology-based. As technology is still evolving, there are still aspects where it can be improved.

The most common disadvantage of this system is the need for an internet connection. Although we are, relatively, in a technologically advanced society, not everyone has an internet connection. So, educational organizations may often be faced with internet connection problems.

The second disadvantage may be the lack of knowledge of school staff. A tool won't be able to offer its full potential if users do not know how to navigate it. That is why it is highly advisable to get software that is user-friendly. You may also opt for one in which developers offer 24/7 customer support. This way, all concerns can be solved immediately.

Many factors can affect the use of e-school systems, Infrastructure, Financial constraints, Technical skills, Policies, Teacher perceptions, Student factors Perceived self-efficacy, Perceived usefulness, Perceived ease of use, Attitude, System usage, Personal innovativeness(Mehmet D. 2013)

## **2.7. Critical analysis**

The researcher analyses the following theses, “**Assessment of Educational Management Information System (EMIS) Implementation in Oromia Regional State, Ethiopia**” (Wubnesh M, 2020) as the purpose of this study was to assess the implementation of EMIS program in Oromia Regional State. The study follows descriptive design and a mixed research approach. Regarding data gathering method, the study employs a survey method of data gathering tools like questionnaire, interview, focus group discussion, document analysis & observations. Cluster sampling and multi-stage random sampling technique was used for sampling school level population and purposive sampling techniques were used for sampling EMIS data producers (EMIS staff) and EMIS data users (stakeholders). The Total sample population selected for this research were, 380(272 school directors & 25 EMIS staff and 83 EMIS stakeholders) from a total of 908 population selected from 6 zones 12 woredas, 219 primary schools & 26 secondary schools in Oromia Regional State. For this study, primary & secondary data was collected from school principals, Woreda, zonal, regional education offices and respective Stakeholders.

The frequency counts and percentages were used to analyze the background information of the respondents. Whereas the quantitative data obtained in relation to main questions of the study was analyzed by using mean scores with standard deviation. The scores of each item was statistically

organized and imported into Statistical Package for Social Sciences (SPSS-20) to obtain sum, mean value and standard deviation. The finding of this study reveals that, the implementation status of enabling environment for implementation of EMIS was evaluated as an emerging stage, while system soundness, quality data and education data utilization were evaluated as Established stage and the overall status as moderate level. The main gaps identified were lack of legal- framework, lack of accountability & responsibility for data, absence of data-driven culture, shortage of modern ICT materials & infrastructures, and the system is non-dynamic & not elastic, communication between data producers and data users was very limited. The study recommends that, Oromia Education Bureau must have legal framework with a clear legal mandate to collect information from all education and training institutions and bodies. The bureau should shift data collection, data analysis & data dissemination techniques from manual to modern web- based application and online technology. The data architecture and its blue-print should be prepared and implemented in the region. The statistical report should be customized to users need and effective dissemination strategy should be designed (Wubnesh, 2020).

However the purpose of this study was to investigate the implementation of the e-school project management system in government primary schools of Addis Ababa city administration. The scope of the study was in government primary schools of Addis Ababa city administration with a target population of 154 schools that have been under e-school project. The study adopted a descriptive research design method with a target population of 154/254 schools. From these schools, principals and ICT professionals (227) by stratified sampling technique, Education bureau level, Information System division employees (6), Sub city data management team leaders (11) purposive sampling method and total 244 . A questionnaire was used to collect primary data from the target population. Data was analyzed through SPSS version 26 and relationships between variables were determined using Pearson correlation, regression and analysis of variance (ANOVA). Descriptive statistics gave a summary of the data and a description of the sample characteristics. Correlations analysis showed the relationship among the variables hence finding statistical support of the hypotheses of the study. The study found out that Existing Planning practices of e-school notably: Project Planning, Stakeholder Involvement, Schedule Management and Monitoring and Evaluation had significant influence on the implementation of the e-school project management system. The study established that the factors in the study accounted for a combined 75.4% of the total variation in implementation of the e-school project management

system. The study concluded that Existing Planning practices of e-school had an impact in the implementation of the e-school project management system. The findings also established an e-school project not being implemented according to the set timelines, budget provision, quality and scope provided by the donor agency. Consequently, the study recommended that the implementation agency should ensure proper mechanism for project planning, consultative forums for stakeholder involvement, well laid out implementation schedule for schedule management and clear structures for monitoring and evaluation are in place for effective implementation.

## **2.8. Empirical review**

Kassa, conducted a study “Assessment of the Effectiveness of ICTs for Development in Ethiopia (A case of the School Net Project)” This research attempts to discover the reason of ICT4D project failures and solutions to avoid and overcome the failures through analyzing a distance education project called ‘School Net’ in Ethiopia. The analysis of the School Net project with the ‘design-reality gap’ (Heeks 1999a; 2002a) shows the techno-centric and the top-down approach without considering the local reality is the cause of several challenges that the project faced. As a gateway to a solution to lessen the design-reality gaps, teachers’ participation is chosen since the participative approach is supported by both scholars in Information Systems (IS) and development studies.

In 2016 one study was conducted by Tirussew Belay. (member of Institute of The World Bank Group) in the title “Assessment of the Status of O-Class in Four Regional States of Ethiopia”. This project aimed at assessing the status of O-Class (profiling, identifying gaps and opportunities, and suggesting interventions) in four regional states of Ethiopia. the study find out problems relate to the very purpose of O-Class; identity concerns; infrastructural, resource and budgetary constraints; centration of orientation, professionalism somehow compromised, and problem of partnership.

The research conducted by Balcha in 2010 “ An Assessment of the Ethiopian Primary Education Sector Development Program” The main purpose of this study was to assess the performance of ESDP at primary level and to identify the major challenges and problems that have affected the

achievement of the ESDP III at national level. The study employed a descriptive survey method, and involves both primary and secondary sources of data. The finding of the study revealed that educational access and coverage have shown remarkable improvements over the last five years, between 2004/05 and 2008/09. The capacity and management-related-problems such as lack of technical support to the regions, lack of adequate training for the implementation of ESDP ,High tum-over of implementers, regional, urban/rural and gender disparity, Inefficient utilization of resources, poor quality of education, weak education planning and implementation/management capacity particularly at MoE, inadequacy of basic school facilities, shortage of qualified and experienced teachers in the second cycle of primary education in the rural areas, inefficiency of smooth student flow through the educational ladders of the primary schooling as reflected by low survival and completion rates due to drop-out and repetition problems, low quality of school infrastructure, due to a strong reliance on low-cost constructions, long home-school distance, lack of school basic facilities and materials, lack of counseling and support for students and the likes were identified as a factor that made schools environmental less child-friendly and discouraged school attendance. The socio-economic and cultural problems: family low income, drought and food shortage, child labor demand, parents' illiteracy, early marriage and the likes also affected the education of children, less commitment of the political leadership to education

The other studies conducted in 2009 by Henock. “Assessment of Sustainability of Alternative Basic Education Projects Supported by Selected NGOs in Addis Ababa” Alternative Basic Education Projects supported by NGOs have been carried out in Addis Ababa. Some projects were successful in producing lasting impact on the provision of Alternative Basic Education. However, many projects could not support themselves and operate in sustainable manner after project handover is made to the community and the NGOs ceased their support. The problems faced to the project are technical, financial, institutional, economic, social and environmental/actor constraints contribute to the failure to sustain the projects. The study shows that the communities' capacity to operate the project in sustainable manner is questionable mainly because of weak financial and institutional capacity.

Mehmet. ( 2013) in Hacettepe University, Turkey conducted a study “The Contributions of E-School, a Student Information Management System, to the Data Processes, Environment, Education and Economy of Turkey” In this paper, it is elucidated what E-school is and how

student information management has been handled in Turkey's education before and after E-school. It emphasizes on the contributions of E-school not only to dynamics in education like teachers but also to data processes, environment, Turkey's Education System and economy.

E-school creates change and transforms ICT use in education. The system gives a clear picture of education and provides lasting impact on a significant scale. It provides school and educational administrators, policy makers and teachers with easy management of students' information procedures and those processes function fast and economic by automation which lessens bureaucratic procedures. It is now more accurate to find out the students not registered, the absentee and also to monitor the academic success, physical and cognitive development, behavioral patterns.

The system helps the administrators, teachers and policy makers make accurate, fast analysis and decisions about such as immediate needs and development of education system by enabling them to carry out their task easily, efficiently, and timely manner. As a result, it helps them focus on the educational aspect more, the learning needs of students.

E-school results in a more accurate, clean, legible and organized data over the long term by improving information characteristic of students. This system makes data processes easier by checking the sameness of data items within multiple fields, establishing a mutual relation between them, executing mathematical operation on them, and fetching only the data that matches each single principle. The education statistic is strengthened and reliability is improved by producing more relevant, reliable and timely data.

E-school plays an important role in expediting preparation of academic research, policies development studies, strategic plans and projects by referring emerging organizational issues and providing appropriate, valuable and accurate information. It is easy to consider administrative and functional scalability of Turkey's Education System for district, province, regional and national based.

Making centralized exams and enrollment procedures automated removes many and Catch-Up Module, the students under risk of absenteeism can be determined and so the required precautions

can be taken easily in time. By saving almost 150 million papers spent for 16 million students, Turkish Education has become a more sustainable eco-friendly system.

Considering all the advantages economically, especially saved time while handling student information, the public expenditure of money on student information management decreased at noteworthy. The saving is transferred in improving the quality and development of education.

With all outstanding contributions, E-school can be an example for other countries. Finally, by gathering new generations' whole education and behavior data at a center, E-school helps make efficient plans and take precautions for the future of the nation.

The EMIS informs those invested in education outside of traditional institutions about the state of the education system and students' progress in school (Pedro et al., 2019). Therefore, the EMIS allows non-formal institutions to collect and evaluate data on student performance and involvement, allowing them to pinpoint problem areas. For instance, EMIS is used by Bridge International Academies to monitor students' engagement in class based on where they are seated. The teacher can keep track of how often each student took part in the activity, and then give extra attention to the children who typically do not (Bridge International, 2017). Data on student attendance and performance in the classroom is crucial to improving the quality of instruction, and EMIS plays a key role in this process (Durnali, 2013). Keeping tabs on student attendance and performance at non-formal schools, which is often difficult to do in informal settlements where these schools are commonly located, is made much easier with EMIS. It's important to recognize that several factors prevent students who aren't enrolled in formal education from consistently attending class. It was previously difficult to map out student-specific obstacles to school attendance and learning; now, with the advent of EMIS, this is now achievable (UNESCO, 2014). Permanently absent students in non-formal settings can be monitored in relation to their academic performance, and tailored interventions can be created as needed. Zaidi (2014) agrees, arguing that the EMIS is especially important for non-formal schools because of its capacity to divide data for each student, which is then utilized to create individualized treatments. To rephrase, EMIS may be even more important in non-formal schools with significant absenteeism than in traditional schools (Ruto et al., 2010). Teachers' capacity, abilities, and ability to present excellent learning content to students have all been improved as a result of the EMIS (Carlson

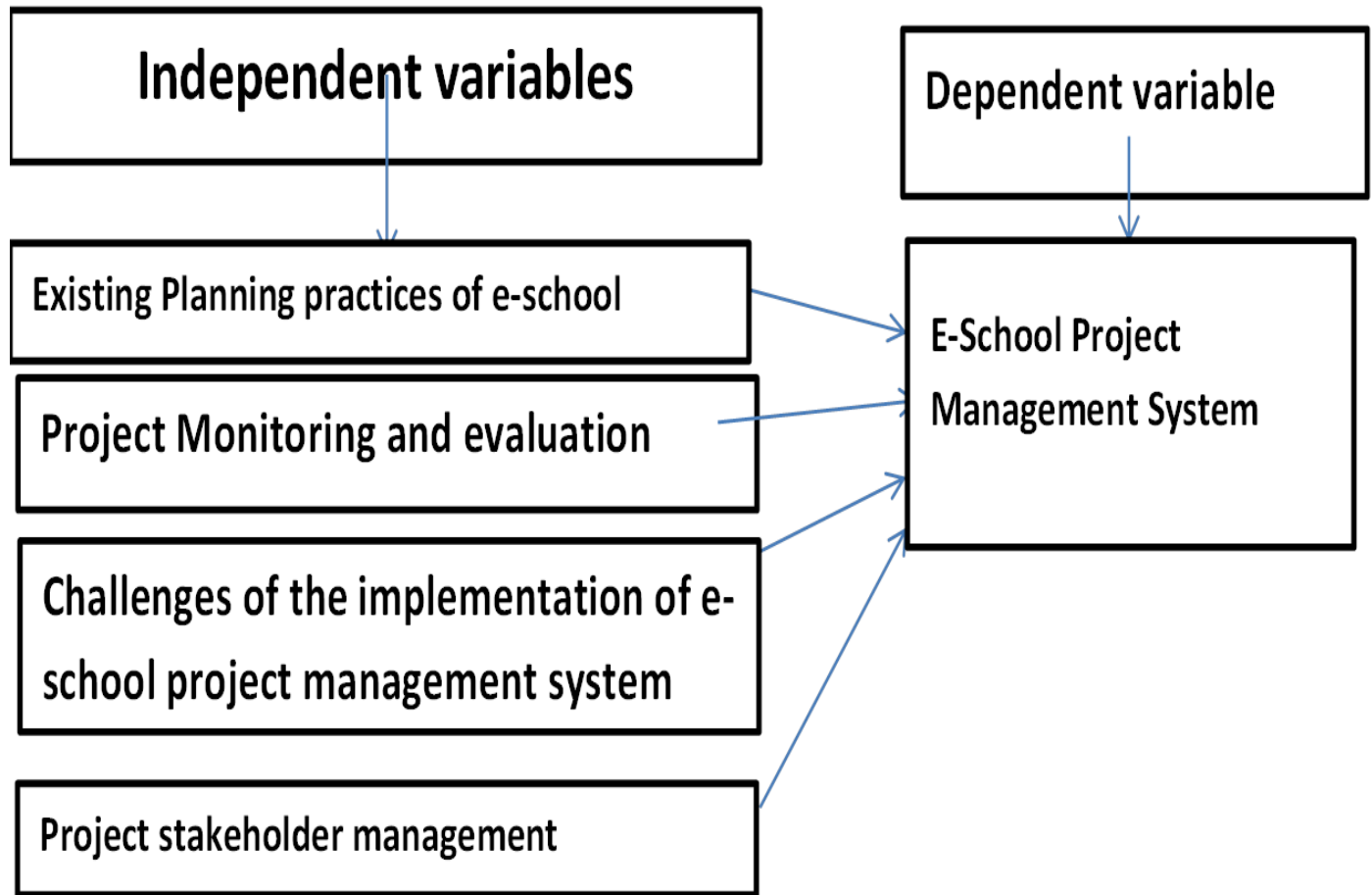
&Gadio, 2002), which has a multiplicative effect on students' non-formal learning, involvement, and performance. Ojwang (2010) argues that with the use of EMIS, educators can collaborate with their superiors to design lessons and frameworks that promote student engagement and retention. Standardized content, such as when and how to ask questions, how to engage inactive students, and how to provide feedback to students, is delivered to teachers' digital platforms via EMIS, which is especially beneficial for non-formal schools (Hanemann, 2021). Adopting EMIS platforms is a step in the right direction for non-formal schools looking to improve their pedagogical use of IT (Ng'ang'a, 2010; Chunwijitra, 2013). This is crucial because it allows classroom instructors to raise the bar for student learning. Dighe, Hakeem, and Shaeffer (2009) conducted research in Malaysia and found that using EMIS allowed teachers to better convey complex concepts to pupils using scripted content. Therefore, it may be argued that EMIS makes it simpler for teachers to personalize and exchange learning materials, lesson plans, diversifying teaching, making Ng'ayo, Sitawa, and Mutisya, (2023) [ww.ijscdc.org](http://ww.ijscdc.org) 21 students the Centre of the classroom, and bringing the real world into the classroom. It is important to remember that EMIS is not a replacement for the hands-on, experiential learning that comes before or after reading or watching a video. Therefore, giving students access to authentic, hands-on learning opportunities is crucial. Binginlas (2009) argues that teaching students how to function in the digital age requires a focus on incorporating EMIS into the classroom.

## **2.9. Conceptual framework**

This was also captured in the conceptual framework which is a tabulated relationship between the independent variables and dependent variable. The conceptual framework of the study are develop from different authors findings (Chan and Kumaraswamy 1997; Wambugu, 2013; Theodore, 2009; Dainty et al, 2003; Bilczynska and Wojcik, 2014; Oyetunji and Anderson, 2006). The study is guided by conceptual framework. To this effect; the study on the Implementation of the E-School Project Management System in Primary School of Addis Ababa City Administration.

The following Figure 2.1. Which is developed by the researcher illustrates the intention of the study by relating independent variables (Implementation of the e-School project) which affecting e-School project Management System.

Figure 2.1 Conceptual Frame work



Source: own survey, 2024

## 2.10. Summary of Literature Review

Literature has revealed that the developed countries have made remarkable investment technology as well as integrating technology in their education system characterized by well formulated technology national policies and specific strategies of technology in education. On the other hand the developing countries included are rapidly and heavily investing in technology despite the challenges they face for instance drought and famine (WHO, 2012). Despite these efforts, the countries still have low internet connectivity, inadequate power supply especially in the rural areas where most schools are located coupled with regular interruptions,

low number of computers in schools, limited /no computer laboratories. This creates a digital divide between the developed and the developing countries and thus the developing countries miss out on the benefits of technology in almost all aspects including education which is the cornerstone of the economy and an avenue to break the poverty cycles on the developing countries (UNESCO, 2010).The study was done to investigate the implementation of the e-school project management system in government primary schools of Addis Ababa city administration.

## **CHAPTER THREE**

### **RESEARCH DESIGN AND METHODOLOGY**

#### **3.1. Research Design**

This study was conducted using a descriptive research design. A descriptive research design was preferred because it is primarily concerned with answering the what questions of research and it points out the prevalence of particular problems and may identify areas in need of additional research. Furthermore, this design was also preferred because it makes enough provision for protection against bias and maximizes reliability (Kothari, 2018). descriptive research approach investigates the given phenomena based on the opinion, attitude, belief and intention of the researcher. It does not generalize rather it is open for further improvements. It is used to understand why project behave in a certain way or how they respond to a given activities, by analyzing data gathered by interviews. Quantitative research is a research method that is used to generate numerical data and hard facts, by employing statistical, logical and mathematical technique.

#### **3.2. Source of Data**

The study used both primary and secondary data. The primary data were collected from the Sub City data management team leaders, schools principals, sub city data management team, Addis Ababa city Administration education bureau project leaders, schools ICT professional and others to have sufficient information about successful Implementation of the e-School project Management System in Primary schools of Addis Ababa City Administration through questionnaires to investigating of Existing Planning practices of e-school, Challenges of the implementation of e-school, Project stakeholders, monitoring and evaluation, On e-School project implementation performance from project owner point of view. The secondary data was collected from books, research journals and articles conducted on project management and other related titles, unpublished materials of Addis Ababa City Administration education bureau portal and/or internet.

### 3.3. Sample and Sampling Techniques

The focus of study is on schools under Addis Ababa City Administration Education Bureau that are responsible for project implementation. In order to determine the sample size, the researcher used the Yamane formula which is a common formula for calculating sample size, and it is written as  $n = N / (1 + N(e)^2)$ . In this formula,  $n$  is the sample size,  $N$  is the population size, and  $e$  is the margin of error. Then, the total numbers of schools of the 11 Sub Cities who are responsible for project are 244. From the total schools the researcher selected 154 (14 school from each Sub City by giving equal chance to the sub city) schools by using the above formula and the schools are selected by stratified techniques because the stratified sampling technique is useful in ensuring that every subgroup, or stratum, within the population is adequately represented in the sample that is easily accessible to the researcher (<https://researcher.life/blog/article> December 02, 2024). That means 227 principals and ICT professionals are selected. In Sub City level there are 11 data management team leaders. In addition to that in education bureau level there are 6 Information System division employees were included. From these employees all of the samples are selected by purposive sampling method, because they are main participant of the project. Generally in this study there are 244 total participants selected from the total population 569.

Table 3.1 sampling methods of sample participants

No	Sample participant	Sampling method	Total population	Sampling size
1	principals and ICT professionals	stratified sampling technique	541	227
3	Education bureau level, Information System division employees	purposive sampling method	6	6
4	Sub city data management team leaders	purposive sampling method	22	11
5	Total		569	244

### 3.4. Data Collection tools

Instruments are tools that are used by the researcher to collect data from the sample respondents in a study (Kombo and Tromp, 2006, cited by Rechar, 2014). Both the adopted and developed questionnaires were designed and made to include both closed-ended and open-ended items and they were distributed to principal, school ICT professionals and data management team leaders.

The questionnaires were used to collect data from the education bureau level Information System division employees. Observation helps to gather crucial information that could not be obtained through questionnaires. The questionnaires are used to collect bio-data of the principal, school ICT professional and data management team leaders, background information of the schools and gather information on the e-School project Management System in Primary schools. Questionnaires collect data by asking people to respond to exactly the same set of questions. They are often used as part of a survey strategy to collect descriptive data about opinions, behaviors and attributes and In descriptive studies, structured interviews can be used as a means to identify general patterns (Saunders, Lewis, Thornhill, 2009). The questionnaires were using entailed open and closed items. Open-ended questions were provided detailed information and were ideal for obtaining data from a large number of respondents, while closed ended questions were provided structured responses, which assisted in tabulation and analysis.

### **3.5. Data Processing and Analysis**

Quantitative and qualitative methods of data analysis were employed in order to answer the research questions and to attach to the objectives. Quantitative data are collected and were entered into the computer, and were analyzed using descriptive analysis mainly; Statistical Package for Social Scientists -SPSS. Qualitative data were analyzed using content analysis method and opinions of majority were summarized. The quantitative data were collected, coded, tabulated, analyzed, described and interpreted in a manner that it supports finding of the study in terms of frequency, percentage and mean value (to compute the proportionality of individual responses of the items by assessing the scale value to each of the likert scale responses. . Before analyzing the quantitative data, the questionnaires were cross checking for completeness and consistency. And then it was analyzed with the help of SPSS version 26. Descriptive analysis is done using frequency distribution tables. Finally, the findings were summarized and presented by using different tools and were supported with further descriptions.

The information was displayed by use of tables, percent, mean, and standard deviation. Correlation analysis is used to establish the relationship between the independent and dependent variables. The purpose of doing correlation is to allow the study to make a prediction on how a variable deviates from the normal. Simple descriptive statistics (frequency distribution and mean) are used to show preliminary figures.

## 3.6 Validity and Reliability

### 3.5.1. Validity

Validity method is given when a logical link is established between the questions and objectives. To reduce subjectivity, the questionnaires were revised many times after repeatedly discussed with advisor and other external researchers. Then, developed questionnaire sent to the advisor and the correction was made based on comments. The questionnaire was evaluated and commented by different research experts and professionals. The different research professionals and classmates were asked to give comments and opinion on statements used in the questionnaire in terms of clarity and completeness.

### 3.5.2. Reliability

Calculating Cronbach's alpha ( $\alpha$ ) is common practice when multiple-item of measurement concepts or constructs are employed, because it is easier to use in comparison another estimates (Willson, 2003). Cronbach's alphas combined with inter- item correlation to determine the internal reliability of measurement instrument was used. Cronbach alpha ( $\alpha$ ) of 0.70 coefficient indicates sound and reliable measures with a Cronbach alpha close to 1 indicates greater consistency. Cronbach's alpha was calculated to study the reliability of all the items (34) each variable of the study. The four independent variables in the study were; EPLPR- Existing Planning practices of e-school, CPIM- Challenges of the implementation of e-school, PSTH- Project stakeholders ,PMEV- monitoring and evaluation.

Table 3.2 Cronbach's Alpha

<b>Reliability Statistics</b>	
Cronbach's Alpha	N of Items
.789	43
a. Dependent Variable: e-school project management system	
b. Predictors: (Constant), EPLPR- Existing Planning practices of e-school, CPIM- Challenges of the implementation of e-school, PSTH- Project stakeholders ,PMEV- monitoring and evaluation	

## 3.7 Ethical Consideration

Ethics is conducting oneself in accordance to the principles of conduct which are considered correct especially in certain profession r group (Kumer, 2005). Ethical issues concerning

research subjects are confidentiality, anonymity, voluntary and informed consent. The researcher provides anonymity by separating identity of individuals from the information collected. The researcher also to investigate the implementation of the e-school project management system in government primary school of Addis Ababa city administration. This allowed facilitation of data collection process based on clear rule, guidance and ethical consideration of the organization under the study.

## CHAPTER FOUR

### 4. PRESENTATION, ANALYSIS AND INTERPRETATION OF DATA

As indicated in the previous chapters, the objective of the study was to investigate the implementation of the e-school project management system in government primary school of Addis Ababa city administration. Therefore, this chapter deals with Presentation Analysis and Interpretation of the data obtained from the sample schools by using the data gathering tools questionnaire and document observation review to search for appropriate solutions to the basic questions of the study. The data collected through closed- ended questions from participants and school principals were presented in tables and analyzed using percentages, frequency counts and mean score. The qualitative data obtained through observation was presented and analyzed in descriptive form together with the quantitative analyses of related questionnaire items. This section of the research report is categorized in to two major parts. The first part presents the characteristics of respondents and the second part deals with the analysis and interpretation of the e-school project management system based on the data collected

#### 4.1. Characteristics of Respondents

By describing characteristics of the respondents, it is possible to know some background information about the sample population who participated in the study. The following four tables show the general characteristics (sex, age, qualification, work experience, field of study and training on school improvement program) of respondents involved in the study .

**Table 4.1:** Respondents background

Age			educational background			Sex		
19-35	36-54	55 and above	Diploma	Degree	MA Deg	Male	female	
135	101	8	39	200	5	127	117	

As can be seen from Table 1 in relation to sex distribution of Respondents, 127 (52.07%) of them were males and 117 (48.0 %) females. This indicates that the majority of the respondents are males. The number of female is also encouraging.

This shows that majority of respondents is in a young age group. The age of Respondents wee 19-35 were 135 (55.3 %) 36-54 101(41.4%) 55 and above, 8(3.3%) years old. Therefore, the

respondents are mature enough to respond to the question properly.

As to educational background of respondents, 39(16.0%) and 17(94.44%) teachers and principals were diploma holders, 200 (82.0%) of Respondents has 1<sup>st</sup> degree holders and 5(2.0%) 2<sup>st</sup>degree holders. Therefore, from the study we conclude that minimum requirement is almost satisfactory and above.

## 4.2. DESCRIPTIVE ANALYSIS

### 4.2.1. Existing Planning practices of e-school project /EPLPR/

Existing Planning practices of e-school project management system is considered as independent variable in the implementation of the project. Effective and efficient Planning practices and management play a vital role in implementing the project management system.

**Table 4.2:** Respondent Views on Existing Planning practices of e-school

No	Item	Respondents	Responses [N&%]					mean	Standard deviation
			SA	A	UD	DA	SDA		
1	More effort was spent in planning stage compared to other Stages	N %	13	22	44	111	54	2.68	1.03
			5.3	9.0	18.0	45.5	22.1		
2	Team members were well experienced in planning process	N %	17	32	47	104	44	2.70	0.98
			7.0	13.1	19.3	42.6	18.0		
3	Stakeholder /users were involved in planning stage	N %	26	35	36	67	80	2.66	1.04
			10.7	14.3	14.8	27.5	32.8		
4	Project planning tools are applied while planning	N %	21	31	45	82	65	2.86	0.95
			8.6	12.7	18.4	33.6	26.6		
5	Project managers and organizations Was well communicating during planning phase	N %	17	32	47	104	44	2.87	0.99
			7.0	13.1	19.3	42.6	18.0		
6	Activities were well developed (prepared) and defined	N %	20	31	47	85	61	2.89	1.00
			8.2	12.7	19.3	34.8	25.0		
7	Resource for project determined	N %	17	32	48	1.3	44	2.80	1.00
			7.0	13.1	19.7	42.2	18.0		
8	Project risk Identified	N %	17	32	46	1.4	45	2.74	0.99
			7	13.1	18.9	42.6	18.4		
9	The project completed with the planned budget	N %	17	30	47	83	67	2.59	1.07
			7.0	12.3	19.3	34.0	27.5		
10	Training was given for project team member/ Stakeholder	N %	7	29	27	1.9	72	2.71	1.03
			2.9	11.9	11.1	44.7	29.5		

Source; field survey and output of spss v.26 x= mean SD=standard deviation

Kerzner(2003) discussed that Project plan must be systematic, flexible enough to handle unique activities, disciplined through reviews and controls, and capable of accepting multifunctional inputs. Successful project managers realize that project planning is an iterative process and must be performed throughout the life of the project. If line managers cannot commit because the milestones are perceived as unrealistic, the project manager may have to develop alternatives, one of which may be to move the milestones. Upper-level management must become involved in the selection of alternatives. Project planning is widely thought to be an important contributor to project success.

As can be observed in item 1 of table 4.2, the respondents were asked to indicate their agreement on the question more effort was spent in planning stage compared to other Stages. Therefore 165, (67.6%) of the respondents not agreed 44 (18.0%) of the respondents Neutral 22 (9.0%) of the respondents agreed 13 (5.3%) of the respondents strongly agreed on there is More effort was spent in planning stage compared to other Stages. Consequently, respondents expressed their agreement ( $X= 2.68$ ,  $SD=1.03$ ). This means that the Project Managers Were not well experienced in Planning Processes.

In the same Table 4.2 show that respondents were asked to indicate their agreement on the Team members were well experienced in planning process. Therefore, 148 (18.0%) of the respondents not agreed 47 (19.3%) of the respondents Neutral 49 (60.65%) of the respondents agreed on there is the Team members were well experienced in planning process. Consequently, respondents expressed their agreement ( $X= 2.70$ ,  $SD=0.98$ ). This means that the Team members were well not experienced in planning process.

The above tables 4.2 indicate that the respondents were asked to indicate their agreement on the Stakeholder /users were involved in planning stage. Therefore, 157 (67.6%) of the respondents not agreed 36 (14.8%) of the respondents Neutral 61 (25%) of the respondents agreed on there is the Stakeholder /users were involved in planning stage. Consequently, respondents expressed their agreement ( $X= 2.66$ ,  $SD=1.04$ ). This means that the Stakeholder /users were not involved in planning stage. The significance level ( $p=0.00$ ) is greater than 0.05, this indicates that there is significance. Then in the table respondents were asked to indicate their agreement on the Project planning tools are applied while planning. Therefore, 147 (60.3%) of the respondents

not agreed, 45 (18.4%) of the respondents Neutral 52 (21.3%) of the respondents agreed on there is the Project planning tools are applied while planning. Consequently, respondents expressed their agreement ( $X= 2.86$ ,  $SD=0.95$ ). This means that the Project planning tools are not applied while planning.

Table 4.2 shows the respondents to indicate their agreement on the Project managers and organizations was well communicating during planning phase. Therefore, 148(60.7%) of the respondents not agreed 104 (42.6%) of the respondents disagreed 47 (19.3%) of the respondents Neutral 49 (20%) of the respondents agreed on there is the Project managers and organizations was well communicating during planning phase. Consequently, respondents expressed their agreement ( $X= 2.87$ ,  $SD=0.99$ ). This means that the Project managers and organizations were not well communicating during planning phase. In these table respondents were asked to indicate their agreements on the Activities were well developed (prepared) and defined. Therefore, 146 (59.8%) of the respondents not agreed 47 (19.3%) of the respondents Neutral 51 (20.9%) of the respondents agreed on there is the Activities were well developed (prepared) and defined. Consequently, respondents expressed their agreement ( $X= 2.89$ ,  $SD=1.0$ ). This means that the Activities were not well developed (prepared) and defined.

More over the Respondents were asked to indicate their agreement on the Resource for project determined. Therefore, 147 (60.3%) of the respondents not agreed, 48 (19.7%) of the respondents Neutral 49 (20%) of the respondents agreed on there is the Resource for project determined. Consequently, respondents expressed their agreement ( $X= 2.80$ ,  $SD=1.00$ ). This means that the Resource for project was not determined. In addition respondents were asked to indicate their agreement on the Project risk Identified. Therefore, 149 (61.06%) of the respondents not agreed, 46 (18.9%) of the respondents Neutral 49 (20%) of the respondents agreed on there is the Project risk Identified. Consequently, respondents expressed their agreement ( $X= 2.74$ ,  $SD=0.99$ ). This means that the Project risks are not identified.

In table 4.2 the respondents were asked to indicate their agreement on the project completed with the planned budget. Therefore, 150 (61.5%) of the respondents not agreed, 47 (19.3%) of the respondents Neutral 47 (19.3%) of the respondents agreed on there is the project completed with the planned budget. Consequently, respondents expressed their agreement ( $X= 2.59$ ,

SD=1.07). This means that the project not completed with the planned budget.

In the other question of table 4.2 respondents were asked to indicate their agreement on the Training was given for project team member/ Stakeholder. Therefore, 181 (74.1%) of the respondents not agreed, 27 (11.1%) of the respondents Neutral 36 (14.75%) of the respondents agreed on there is the Training was given for project team member/ Stakeholder. Consequently, respondents expressed their agreement (X= 2.71, SD=1.03). This means that the sufficient Training was not given for project team member/ Stakeholder.

#### 4.2.2 Monitoring and evaluation

For to now the way of monitoring and evaluation of the e-school project management system the collected data was presented.

**Table 4.3:** Respondents Views about the monitoring and evaluation of the e-school project

No	Item	Respondents	Responses [N&%]					mean	Standard deviation
			SA	A	UD	DA	SDA		
1	The monitoring and evaluation plan was effective to achieve the project objective.	N %	4	9	24	109	98	2.45	1.06
			1.6	3.7	9.8	44.7	40.2		
2	The monitoring and evaluation plan had a clear level of data collection, analysis and use of its information from project to program.	N %	4	10	23	108	99	2.68	1.05
			1.6	4.1	9.4	44.3	4.6		
3	Monitoring and evaluation plans consisted indicators that are clearly linked to the objectives of the project.	N %	4	9	22	106	103	2.74	1.00
			1.6	3.7	9.0	43.4	42.2		
4	Baseline study was included in the monitoring and evaluation plan as key components.	N %	4	10	23	113	94	2.70	1.03
			1.6	4.1	9.4	46.3	38.5		
5	The organization monitoring and evaluation system was integrated with other organizational systems and processes.	N %	4	10	22	110	98	2.66	1.04
			1.6	4.1	9.0	45.1	40.2		
6	To carry out evaluations of projects, External facilitators were involved.	N %	4	11	22	112	95	2.64	1.04
			1.6	4.5	9.0	45.9	38.9		
7	The roles and responsibilities of staff in monitoring and evaluation were clearly defined and documented.	N %	5	12	39	124	64	2.62	0.99
			2.0	4.9	16.0	50.8	26.2		
8	Monitoring and evaluation staff had the required competency to discharge their roles and responsibilities in translating the monitoring and evaluation system into practice.	N %	13	21	41	112	57	2.75	0.98
			5.3	8.6	16.8	45.9	23.4		
9	Project staffs were properly trained on project Monitoring and evaluation.	N %	17	32	47	104	44	2.70	1.05
			7.0	13.1	19.3	42.6	18.0		

Source; field survey and output of spss v.26

A monitoring and evaluation system helps actors to continuously monitor and analyze the projects and programs. Beyond a "simple" management exercise of filling in indicators, the aim is to improve the steering of actions, the future final evaluation and feed into the impact measurement framework. Monitoring and evaluation is carried out with the main partners and beneficiaries involved. There are two main purposes for monitoring-evaluation: Monitoring-evaluation as a steering and learning process: the tools are an opportunity for young people, professionals or teams to take stock of where they stand. The level of achievement of the indicators gives an indication of how well the program is meeting the needs of the beneficiaries. It also helps to strengthen the steering capacities of the actors and to share a common vision. Monitoring and evaluation as accountability and reporting process: indicators are filled in at the level of partners, teams and HO in order to share a picture of what is being achieved at the moment (MENGISTU A. 2022).

As can be seen from item 1 of table 4.3 respondents were asked to indicate their agreement on the monitoring and evaluation plan was effective to achieve the project objective. Therefore, 207(84.8%) of the respondents not agreed, 24 (9.8%) of the respondents Neutral 11 (4.5%) of the respondents agreed on there is the monitoring and evaluation plan was effective to achieve the project objective. Consequently, respondents expressed their agreement ( $X= 2.45$ ,  $SD=1.06$ ). This means that the monitoring and evaluation plan was not effective to achieve the project objective. In item 2 respondents were asked to indicate their agreement on the monitoring and evaluation plan had a clear level of data collection, analysis and use of its information from project to program. Therefore 107 (43.8%) of the respondents not agreed, 23 (9.4%) of the respondents Neutral 14 (5.7%) of the respondents agreed, on there is the monitoring and evaluation plan had a clear level of data collection, analysis and use of its information from project to program. Consequently, respondents expressed their agreement ( $X= 2.68$ ,  $SD=1.05$ ). This means that the monitoring and evaluation plan had not a clear level of data collection, analysis and use of its information from project to program. The significance level ( $p=0.00$ ) is greater than 0.05, this indicates that there is significance

As we have seen table 4.3 respondents were asked to indicate their agreement on the Monitoring and evaluation plan consisted indicators that are clearly linked to the objectives of the project. Therefore, 209(85.6%) of the respondents not agreed, 22 (9.0%) of the respondents Neutral

13(5.3%) of the respondents agreed on there is the Monitoring and evaluation plans consisted indicators that are clearly linked to the objectives of the project. Consequently, respondents expressed their agreement ( $X= 2.74$ ,  $SD=1.00$ ). This means that the Monitoring and evaluation plans consisted indicators that are not clearly linked to the objectives of the project. In the same way respondents were asked to indicate their agreement on Baseline study was included in the monitoring and evaluation plan as key components. Therefore, 207 (84.8%) of the respondents not agreed, 23 (9.4%) of the respondents Neutral 14 (5.7%) of the respondents agreed on there is the Baseline study was included in the monitoring and evaluation plan as key components. Consequently, respondents expressed their agreement ( $X= 2.70$ ,  $SD=1.03$ ). This means that the Baseline study was not included in the monitoring and evaluation plan as key components. In item 5 the respondents were asked to indicate their agreement on the organization monitoring and evaluation system was integrated with other organizational systems and processes. Therefore, 108 (44.2%) of the respondents not agreed 22 (9.0%) of the respondents Neutral 14 (5.7%) of the respondents agreed on there is the organization monitoring and evaluation system was integrated with other organizational systems and processes. Consequently, respondents expressed their agreement ( $X= 2.66$ ,  $SD=1.04$ ). This means that the organization monitoring and evaluation system was not integrated with other organizational systems and processes.

More over in the above table 4.3 respondents were asked to indicate their agreement on to carry out evaluations of projects, External facilitators were involved. Therefore, 207 (84.8%) of the respondents not agreed, 22 (9.0%) of the respondents Neutral 15 (6.14%) of the respondents agreed on to carry out evaluations of projects, External facilitators were involved. Consequently, respondents expressed their agreement ( $X= 2.64$ ,  $SD=1.04$ ). This means that to carry out evaluations of projects, External facilitators were not involved. In addition the respondents were asked to indicate their agreement on the roles and responsibilities of staff in monitoring and evaluation was clearly defined and documented. Therefore, 188 (77.04%) of the respondents not agreed, 39 (16.0%) of the respondents Neutral 17 (6.9%) of the respondents agreed on there is the roles and responsibilities of staff in monitoring and evaluation was clearly defined and documented. Consequently, respondents expressed their agreement ( $X= 2.62$ ,  $SD=0.99$ ). This means that the roles and responsibilities of staff in monitoring and evaluation were not clearly defined and documented.

At the end respondents were asked to indicate their agreement on the Monitoring and evaluation staff had the required competency to discharge their roles and responsibilities in translating the monitoring and evaluation system into practice. Therefore, 169 (69.2%) of the respondents not agreed 41 (16.8%) of the respondents Neutral 34 (13.9%) of the respondents agreed on there is the Monitoring and evaluation staff had the required competency to discharge their roles and responsibilities in translating the monitoring and evaluation system into practice. Consequently, respondents expressed their agreement ( $X= 2.75$ ,  $SD=0.98$ ). This means that the Monitoring and evaluation staff had on to required competency to discharge their roles and responsibilities in translating the monitoring and evaluation system into practice. Finally, respondents were asked to indicate their agreement on the Project staffs were properly trained on project Monitoring and evaluation. Therefore, 148 (60.65%) of the respondents not agreed 47 (19.3%) of the respondents Neutral 49 (20.08%) of the respondents agreed on there is the Project staffs were properly trained on project Monitoring and evaluation. Consequently, respondents expressed their agreement ( $X= 2.70$ ,  $SD=1.05$ ). This means that the Project staffs were properly trained on project Monitoring and evaluation.

### 4.2.3 Project stakeholders

**Table 4.4:** Project stakeholders

No	Item	Respo ndents	Responses [N&%]					mean	Standard deviation
			SA	A	UD	DA	SDA		
1	Project stakeholders were known and documented.	N	17	19	45	112	51	2.30	1.06
		%	7	7.8	18.4	45.9	20.9		
2	Stakeholders were involved in Monitoring and evaluation activities.	N	17	31	48	106	42	2.50	1.10
		%	7	12.7	19.7	43.4	17.2		
3	Stakeholders engagements in the formulation of Monitoring and evaluation promote cost effectiveness	N	13	22	44	111	54	2.40	1.07
		%	5.3	9.0	18.0	45.5	22.1		
4	The organization had baselines for monitoring its stakeholders' activities	N	17	32	47	104	44	2.50	1.12
		%	7	13.1	19.3	42.6	18.0		
5	Stakeholders had knowledge of Monitoring and evaluation practices.	N	18	22	24	64	116	2.15	1.23
		%	7.4	9.0	9.8	26.2	47.5		
6	Stakeholders are involved in identification and tracking of indicators.	N	14	23	32	95	80	2.17	1.10
		%	5.7	9.4	13.1	38.9	32.8		
7	Stakeholder interests are well assessed in organization projects.	N	16	26	42	84	76	2.29	1.13
		%	6.6	10.7	17.2	34.4	31.1		
8	Stakeholders had dominated Monitoring and evaluation activities resulting to a negative influence.	N	6	9	22	111	96	2.14	1.03
		%	2.5	3.7	9.0	45.5	39.3		
9	The involvement of stakeholder influences the implementation of project	N	4	11	22	112	95	2.49	1.04
		%	1.6	4.5	9.0	45.9	38.9		

Source; field survey and output of spss v.26

Stakeholders play a significant role in project management, being the key factors that define project constraints and requirements. They range from the project team, project managers, customers, executives, and project sponsors. Their inputs are invaluable in stakeholder management, guiding the process of stakeholder analysis through their priorities and needs. An effective stakeholder management plan demands intense collaboration with stakeholders, allowing a robust exchange of ideas between internal stakeholders and external stakeholders. They act as essential decision-makers, placing a unique influence on project direction (Dwivedi D. 2021). In table 4.4 respondents were asked to indicate their agreement on the Project stakeholders were known and documented. Therefore, 63 (25.9%) of the respondents not agreed 45 (18.4%) of the respondents Neutral 36(14.75%) of the respondents agreed on there is the Project stakeholders were known and documented. Consequently, respondents expressed their agreement ( $X= 2.30$ ,  $SD=1.06$ ). This means that the Project stakeholders were known and documented. In item 2 respondents were asked to indicate their agreements on the Stakeholders were involved in Monitoring and evaluation activities. Therefore, 148(60.65%) of the respondents not agreed 48 (19.7%) of the respondents Neutral 48 (19.67%) of the respondents agreed on there is the Stakeholders were involved in Monitoring and evaluation activities. Consequently, respondents expressed their agreement ( $X= 2.50$ ,  $SD=1.10$ ). This means that the Stakeholders were not involved in Monitoring and evaluation activities.

In the above able 4.4 the respondents were asked to indicate their agreement on the Stakeholders engagements in the formulation of Monitoring and evaluation promote cost effectiveness. Therefore, 165(67.62%) of the respondents agreed 44 (18.0 %) of the respondents Neutral 35 (26.6%) of the respondents agreed on there is the Stakeholders engagements in the formulation of Monitoring and evaluation promote cost effectiveness. Consequently, respondents expressed their agreement ( $X= 2.40$ ,  $SD=1.07$ ). This means that the Stakeholders engagements in the formulation of Monitoring and evaluation promote cost effectiveness. In the same way respondents were asked to indicate their agreement on the organization had baselines for monitoring its stakeholders' activities. Therefore, 148 (60.65%) of the respondents agreed 47 (19.3%) of the respondents Neutral 49 (20.08%) of the respondents agreed on there is the organization had baselines for monitoring its stakeholders' activities. Consequently, respondents

expressed their agreement ( $X = 2.50$ ,  $SD = 1.12$ ). This means that the organization had baselines for monitoring its stakeholders' activities.

More over Respondents were asked to indicate their agreement on the Stakeholders had knowledge of Monitoring and evaluation practices. Therefore, 180 (73.77%) of the respondents agreed 24 (9.8%) of the respondents Neutral 40 (16.39%) of the respondents agreed on there is the Stakeholders had knowledge of Monitoring and evaluation practices. Consequently, respondents expressed their agreement ( $X = 15$ ,  $SD = 1.23$ ). This means that the Stakeholders had knowledge of Monitoring and evaluation practices. Additionally respondents were asked to indicate their agreement on the Stakeholders are involved in identification and tracking of indicators. Therefore, 175 (71.72%) of the respondents agreed 32 (13.1%) of the respondents Neutral 37 (15.16%) of the respondents agreed on there is the Stakeholders are involved in identification and tracking of indicators. Consequently, respondents expressed their agreement ( $X = 2.17$ ,  $SD = 1.10$ ). This means that the Stakeholders are not involved in identification and tracking of indicators.

Respondents were asked to indicate their agreement on the Stakeholder interests are well assessed in organization projects. Therefore, 160(65.5%) of the respondents agreed 42 (17.2%) of the respondents Neutral 42(17.2%) of the respondents agreed on there is the Stakeholder interests are well assessed in organization projects. Consequently, respondents expressed their agreement ( $X = 2.29$ ,  $SD = 1.13$ ). This means that the Stakeholder interests are not well assessed in organization projects.

On table 4.4 respondents were asked to indicate their agreement on the Stakeholders had dominated Monitoring and evaluation activities resulting to a negative influence. Therefore, 207 (84.83%) of the respondents agreed 22 (9.0%) of the respondents Neutral 15 (6.14%) of the respondents agreed on there is the Stakeholders had dominated Monitoring and evaluation activities resulting to a negative influence. Consequently, respondents expressed their agreement ( $X = 2.14$ ,  $SD = 1.03$ ). This means that the Stakeholders had not dominated Monitoring and evaluation activities resulting to a negative influence. Lastly respondents were asked to indicate their agreement on the Project staffs were properly trained on project Monitoring and evaluation. Therefore, 107 (43.85%) of the respondents agreed 22 (9.0%) of the respondents Neutral 15

(6.14%) of the respondents agreed on there is the Project staffs were properly trained on project Monitoring and evaluation. Consequently, respondents expressed their agreement (X= 2.49, SD=1.04). This means that the Project staffs were properly trained on project Monitoring and evaluation.

#### 4.2.4 Challenges of the implementation of e-school

This section deals with implementation of Challenges of the implementation of e-school.

**Table 4.5:** Challenges of the implementation of e-school

No	Item	Resp onden ts	Responses [N&%]					mean	Standard deviation
			SA	A	UD	DA	SDA		
1	Project was completed at the planned time.	N %	18	11	23	108	84	2.34	1.13
			7.4	4.5	9.4	44.3	34.4		
2	Project was completed within the planned budget and resources.	N %	20	10	23	107	84	2.32	1.13
			8.2	4.1	9.4	43.9	34.4		
3	The Projects had quality standard that must be met.	N %	34	18	34	104	54	2.56	1.19
			13.9	7.4	13.9	42.6	22.1		
4	Projects realized meet the planned outcomes that were intended to achieve.	N %	22	11	23	106	82	2.14	1.10
			9.0	4.5	9.4	43.4	33.6		
5	Regular project progress reports on its projects performance was given from the organization.	N %	24	42	39	91	48	2.55	1.14
			9.8	17.2	16.0	37.3	19.7		
6	Reports of a project accurately submitted to the top or delegated management decision making body of the organization.	N %	18	14	46	118	48	2.36	1.03
			7.4	5.7	18.9	48.4	19.7		
7	The management takes appropriate corrective measures in response to the feedbacks given based on the implementation of the project.	N %	12	23	36	112	61	2.27	1.03
			4.9	9.4	14.8	45.9	25.0		
8	implementation provide information to enable ongoing projects to improve future	N %	7	12	42	127	56	2.16	0.90
			2.9	4.9	17.2	52.0	23.0		

Source; field survey and output of spss v.26

The challenges are categorized based on the knowledge areas that include the five constraints Scope, Quality, Schedule, Budget, Resources, and Risks and additional factors specific to Airport Development projects. The challenges identified are not challenges of specific projects undertaken by the organization rather than perceived challenges believed to be encountered while undertaking practice of project management in the organization (Misgana Aragaw M. 2019).

As we have seen table 4.5 respondents were asked to indicate their agreement on the Project was completed at the planned time. Therefore, 194(79.5%) of the respondents agreed 23 (9.4%) of the respondents Neutral 29(11.8%) of the respondents agreed on there is the Project was completed at the planned time. Consequently, respondents expressed their agreement ( $X= 2.34$ ,  $SD=1.13$ ). This means that the Project was not completed at the planned time. In item 2 respondents were asked to indicate their agreement on the Project was completed within the planned budget and resources. Therefore, 107 (43.8%) of the respondents agreed 10 (4.1%) of the respondents Neutral 127 (50.04%) of the respondents agreed on there is the Project was completed within the planned budget and resources. Consequently, respondents expressed their agreement ( $X= 2.32$ ,  $SD=1.12$ ). This means that the Project was completed within the planned budget and resources.

On table 4.5 the respondents were asked to indicate their agreement on the Projects had quality standard that must be met. Therefore, 158(64.75%) of the respondents agreed 34 (13.9%) of the respondents Neutral 52 (21.3%) of the respondents agreed on there is the Projects had quality standard that must be met. Consequently, respondents expressed their agreement ( $X= 2.56$ ,  $SD=1.19$ ). This means that the Projects had quality standard that must be met. Additionally the respondents were asked to indicate their agreement on the Projects realized meet the planned outcomes that were intended to achieve. Therefore, 188 (77.04%) of the respondents agreed 23 (9.4%) of the respondents Neutral 33(13.52%) of the respondents agreed on there is the Projects realized meet the planned outcomes that were intended to achieve. Consequently, respondents expressed their agreement ( $X= 2.14$ ,  $SD=1.10$ ). This means that the Projects realized meet the planned outcomes that were intended to achieve.

The above table 4.5 shows that respondents were asked to indicate their agreement on the Regular project progress reports on its projects performance was given from the organization. Therefore, 139 (56.96%) of the respondents agreed 39 (16.0%) of the respondents Neutral

66(27.04%) of the respondents on there is the Regular project progress reports on its projects performance was given from the organization. Consequently, respondents expressed their agreement ( $X= 2.55$ ,  $SD=1.14$ ). This means that the Regular project progress reports on its projects performance was given from the organization. Respondents were asked to indicate their agreement on the Reports of a project accurately submitted to the top or delegated management decision making body of the organization. Therefore, 166 (68.03%) of the respondents agreed 46 (18.9%) of the respondents Neutral 32 (13.11%) of the respondents agreed on there is the Reports of a project accurately submitted to the top or delegated management decision making body of the organization. Consequently, respondents expressed their agreement ( $X= 2.36$ ,  $SD=1.03$ ). This means that the Reports of a project accurately submitted to the top or delegated management decision making body of the organization.

More over on table 4.5 Respondents were asked to indicate their agreement on the management take appropriate corrective measures in response to the feedbacks given based on the implementation of the project. Therefore, 173 (70.9%) of the respondents agreed 36 (14.8%) of the respondents Neutral 35 (14.34%) of the respondents agreed on there is the management take appropriate corrective measures in response to the feedbacks given based on the implementation of the project. Consequently, respondents expressed their agreement ( $X= 2.27$ ,  $SD=1.03$ ). This means that the management takes appropriate corrective measures in response to the feedbacks given based on the implementation of the project. Lastly, respondents were asked to indicate their agreement on the implementation provide information to enable ongoing projects to improve future. Therefore, 183 (75%) of the respondents agreed 42 (17.2%) of the respondents Neutral 19 (7.78%) of the respondents agreed on there is the implementation provide information to enable ongoing projects to improve future. Consequently, respondents expressed their agreement ( $X= 2.16$ ,  $SD=0.90$ ). This means that the implementation provide information to enable ongoing projects to improve future.

Generally all the independent variables were ranking of the delay factors according to the value of their means. The factors with means exceeding to 7.720 present a fairly high agreement of the respondents. Based on the ranking, the four most influential factors of project completion are: Poor Existing Planning practices of e-school (EPLPR) (mean= 2.50,  $SD= 4.720$ ); Poor Project Monitoring, Evaluation and Controlling System (PMEV) (mean= 2.66,  $SD= 3.688$ ); and Poor

Project stakeholders (PSTH) (mean= 2.32, SD =3.510) and Poor way to solve Challenges of the implementation of e-school (CPIM) (mean= 2.33, SD = 3.31955). It is easy to find that EPLPR is the factor having the highest value of the means. The information delays and lack of information exchange between the parties are serious problems when the project is running and encountering with deadline or important milestones. These problems lead to the different understanding about the project objectives between the parties.

Table 4.6 Ranking of the Delay Factors

<b>Descriptive Statistics</b>				
	Mean	Std. Deviation	N	rank
EPLPR	2.50	4.72098	244	2
CPIM	2.33	3.31955	244	3
PSTH	2.32	3.51082	244	4
PMEV	2.66	3.68842	244	1

EPLPR- Existing Planning practices of e-school  
 CPIM- Challenges of the implementation of e-school  
 PSTH- Project stakeholders  
 PMEV- monitoring and evaluation

## **CHAPTER FIVE**

### **5. SUMMARY, CONCLUSIONS AND RECOMMENDATIONS**

This chapter deals with the summary of the major findings, conclusions, and recommendations are present.

#### **5.1. Summary of the major Findings**

The general objective of this study was to investigate the implementation of the e-school project management system in government primary schools of Addis Ababa city administration. Research Questions were what are the existing Planning practices of e-school project management system implementation in government primary schools of Addis Ababa? What is the extent of stakeholder's awareness about e-school project management system implementation in government primary schools of Addis Ababa? What are the major challenges that hamper effective implementation of e-school project management system in selected government primary schools of Addis Ababa? What monitoring and evaluation mechanisms are in place to assess the implementation process of the e-School Project Management System, and how effective are they in ensuring project success? The total participants of the research were 244/569. Tools that were questionnaires and document analysis were used in this research. The data collected were analyzed by using percentages, frequency counts, weighted mean scores. Based on the analysis of basic questions and interpretations of data, the major findings of the study are summarized as follows;

The first objective was to assess existing Planning practices of e-school project management system in the selected Addis Ababa city government primary schools. Descriptive results revealed that the existing planning practices of e-school not well effective. The Project Managers was not Well Experienced in Planning Processes, More effort was not spent in planning stage compared to other Stages, Team members were well not experienced in planning process, Stakeholder /users were not involved in planning stage, and Project planning tools were not applied while planning. The findings also revealed that Project managers and organizations were not well communicating during planning phase, Activities were not well developed (prepared) and defined, Resource for project was not determined, Project risk was not Identified, The project was not completed with

the planned budget, there was no integrated project schedule prepared in their respective schools for the e-school project management system. Furthermore, the findings established that training was not given for project team member/ Stakeholder, Gant chart is not applicable while planning in projects, Project management software is not applicable while planning. To establish the effect of project planning on the implementation of the project, correlation analysis showed that there was a positive and strong significance.

The second objective was to analyze the extent of stakeholders' awareness about e-school project management system in Addis Ababa city. The findings established that stakeholders were not clearly identified and actively engaged in the project. It was also observed that the Stakeholders were not involved in Monitoring and evaluation activities. In addition, the study established Stakeholders are involved in identification and tracking of indicators, Stakeholder interests are not well assessed in organization projects, Stakeholders had dominated Monitoring and evaluation activities resulting to a negative influence. Additionally, the study found out that the project management team not continuously provided information on project implementation progress to the stakeholders. It was also observed that the involvement of stakeholder influences the implementation of project. Moreover, correlation analysis demonstrated that stakeholders' involvement is correlated with implementation of the e-school project management system.

The third objective was to establish the Challenges of the implementation of e-school project management systems in Addis Ababa city. The findings observed that Project was not completed at the planned time. Similarly the findings the Project was not completed within the planned budget and resources. In addition, the findings established that the projects had no quality standard that must be met. Moreover, the findings established that regular project progress reports on its projects performance was not given from the organization, reports of a project accurately not submitted to the top or delegated management decision making body of the organization. Consequently the findings observed that management took appropriate not corrective measures in response to the feedbacks given based on the implementation of the project, implementation provide information to enable ongoing projects to improve future.

The final objective was to identify the mechanisms of monitoring and evaluation in the implementation of e-school project management systems in addis ababa city. The findings

observed that the monitoring and evaluation plan was not effective to achieve the project objective, the monitoring and evaluation plan had no a clear level of data collection, analysis and use of its information from project to program. The findings also established that there was proper awareness on adopted monitoring and that evaluation practices conducted by World Bank. On the other hand, the findings observed a monitoring and evaluation staff had no required competency to discharge their roles and responsibilities in translating the monitoring and evaluation system into practice, project staffs were not properly trained on project monitoring and evaluation. Consequently, the findings established that the information obtained from monitoring and evaluation reports was used in implementation and that monitoring and evaluation conducted had improved project quality of e-school project. Correlation analysis demonstrated that monitoring and evaluation have a very strong positive significant relationship with e-school project management systems.

## **5.2. Conclusions of the Study**

The study concluded that the existing Planning practice has a significant influence on e-school project management system. Correlation and regression analysis demonstrated a positive correlation between existing Planning practices and the implementation of the e-school project management system. The study also concluded that stakeholder involvement has a significant influence on the implementation of the project. In addition, the study concluded that schedule management has a significant influence on the implementation of the e-school project management system. The study found out that Challenges of the implementation of e-school project management significant influenced the e-school project management system. Consequently, the study concluded that monitoring and evaluation have a significant influence on the implementation of the e-school project management system. The study found that the mechanisms of monitoring and evaluation also had a very strong correlation with the e-school project management system.

## **5.3. Recommendations of the Study**

The findings and conclusions of the study showed that there are some areas of e-school project management system that critically need interventions. Hence, the researcher forwarded the

following recommendations hoping that they could provide an insight on how the problems will be addressed. to overcome problems of projects the following were recommended, to keep up the good work on the practices that were considered successful, The project staff needs to get consecutive technical training to be on the same page with the management team, The management may increase the level of attention to the technical practices of project management, Processes of scope management practices like collecting requirements from stakeholders, developing scope management plan and controlling changes to the scope should be practiced so that the project would not be challenged by scope creep, Risk management processes like identifying and registering risks, prioritizing risks based on their estimated implications, monitoring the identified risks and developing a risk mitigation plan is expected from the project management team as soon as possible. Sharing the good management and other practices to other similar NGO"s is also recommended from the researcher (Yanet Wendemu. 2023).

The study recommends that the e-school project management system should set up mechanism for which they will be able to oversee that all project management practices are implemented to ensure successful project implementation.

Additionally, the study recommends e-school project should ensure there is a project planning committee to forge the way in which the education projects are implemented.

As such proper mechanisms need to be laid out for stakeholder involvement such as having consultative forums, communication channels for information gatherings and feedback to ensure there is continued but controlled engagement throughout e-school project implementation process.

The study recommends that Challenges of the implementation of e-school project must check like planning time, budget, resources, quality standard, reports, etc. are solve.

The study further recommends that the implementation of e-school project should ensure that all the activities in implementation phase are well within the planned schedule.

The study finally recommends that there should be well established structures for monitoring and evaluation. These should be designed to factor in every stage of project implementation.

The implementation e-school project should have measurable goals at every stage to enable monitoring and evaluation of the extent to which implementation is successful or not.

Further monitoring and evaluation would help to determine whether additional strategies could be employed to enhance the process.

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## Appendix



### **Addis Ababa University College of education Department of Educational Planning and Management**

#### **Dear Respondents,**

I warmly greeting. I would like to forward my gratitude in advance since you are giving your kindness, time and appropriate response. The purpose of this questionnaire survey is to determine “**Implementation of the e-School project Management System in Primary School of Addis Ababa city Administration**” This is to inform that this research question will belongs for in partial fulfillment of master of arts (MA) degree in Educational Planning and Management from Addis Ababa University Ethiopia. All the information you provide in this question mare survey will be used For academic purpose only that is used as an input for this master thesis research and all of your responses you provide here will kept confidential. Finally the quality and accuracy of this study is totally depending on your responses therefore, please, providing your responses wisely the general instructions are:

- ✓ You are not expected to write your name
- ✓ Please put this mark (✓) to your response
- ✓ Please provide only one answer each item.

#### **Contact:**

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**Thank You! So match for your cooperation.**

**Questions to school principals, school ICT professionals and  
Sub city data management team leaders Education bureau level  
Information System division employees**

**Part One: Demographic profile of respondent**

1. Gender :- male  Female
2. Age:- Below 1  19-35  36-54  55 and above
3. Educational level junior school  High school  certificate   
Diploma  Degree  Master's Degree

**Part Two: Questions**

INSTRUCTION: Based on your perceived values experience, fact, and your general observation please your agreement and disagreement level of following points which are the Implementation of the e-School project Management System. Using the key (where strongly disagree =5, Disagree =4, Neutral =3 , Agree=2, strongly agree=1). Please tick (√) appropriately according to the extent which you agree or disagree with the statements in.

No	Description	alternative				
		1	2	3	4	5
	<b>Existing Planning practices of e-school</b>					
1.	Project Managers Were Well Experienced in Planning Processes					
2.	More effort was spent in planning stage compared to other					
3.	Team members were well experienced in planning process					
4.	Team members were well committed in planning stage					
5.	Stakeholder /users were involved in planning stage					
6.	Project planning tools are applied while planning					
7.	Project managers and organizations Was well communicating during planning phase					
8.	Activities were well developed (prepared) and defined					
9.	Resource for project determined					
10.	Project risk Identified					
11.	The project completed with the planned budget					
12.	Integrated project schedule prepared					
13.	Training was given for project team member/ Stakeholder					
14.	The project scope is well defined before execution					
15.	Gant chart is applicable while planning in projects.					

16.	Project management software is applicable while planning.					
17.	Project managers were involved in planning phase of the					
2	<b>Challenges of the implementation of e-school</b>					
18.	Project was completed at the planned time.					
19.	Project was completed within the planned budget and resources.					
20.	The Projects had quality standard that must be met.					
21.	Projects realized meet the planned outcomes that were intended to achieve.					
22.	Regular project progress reports on its projects performance was given from the organization.					
23.	Reports of a project accurately submitted to the top or delegated management decision making body of the organization.					
24.	The management takes appropriate corrective measures in response to the feedbacks given based on the implementation of the project.					
25.	implementation provide information to enable ongoing projects to improve future					
3	<b>Project stakeholders</b>					
26.	Project stakeholders were known and documented.					
27.	Stakeholders were involved in Monitoring and evaluation activities.					
28.	Stakeholder's engagements in the formulation of Monitoring and evaluation promote cost effectiveness.					
29.	The organization had baselines for monitoring its stakeholders' activities.					
30.	Stakeholders had knowledge of Monitoring and evaluation practices.					
31.	Stakeholders are involved in identification and tracking of indicators.					
32.	Stakeholder interests are well assessed in organization projects.					
33.	Stakeholders had dominated Monitoring and evaluation activities resulting to a negative influence.					
34.	The involvement of stakeholder influences the implementation of project					
4	<b>monitoring and evaluation</b>					
35.	The monitoring and evaluation plan was effective to achieve the project objective.					
36.	The monitoring and evaluation plan had a clear level of data collection, analysis and use of its information from project to program.					
37.	Monitoring and evaluation plans consisted indicators that are clearly linked to the objectives of the project.					
38.	Baseline study was included in the monitoring and evaluation plan as key components.					
39.	The organization monitoring and evaluation system was integrated with other organizational systems and processes.					
40.	To carry out evaluations of projects, External facilitators were involved.					
41.	The roles and responsibilities of staff in monitoring and evaluation was clearly defined and documented.					

42.	Monitoring and evaluation staff had the required competency to discharge their roles and responsibilities in translating the monitoring and evaluation system into practice.					
43.	Project staffs were properly trained on project Monitoring and evaluation					

3. Additional idea-----  
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