THE STATUS OF SECONDARY SCHOOL PLANT MANAGEMENT IN BOLE SUB CITY, ADDIS ABABA CITY GOVERNMENT

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DEPARTMENT OF EDUCATIONAL PLANNING AND MANAGEMENT

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Abbreviation and Acronyms

AAEB - Addis Ababa Education Bureau

ESDP - Education Sector Development Program

ETP - Education and Training Policy

GEQIP- General Education Quality Improvement Program

ICT – Information Communications Technology

MOE - Ministry of Education

NGO - Non-governmental Organization

PTSA- Parent- Teacher –Student Association

SIP - School Improvement Program

SPSS - Statistical Package for Social Sciences

Abstract

The study investigated the state of school plant management in a sample of secondary schools in Bole Sub City. Three research questions guided the study. The design of the study was descriptive survey. The population consisted of all the 12(100%) principals and 80(100%) of teachers in the sampled secondary schools. The researcher used both observational schedule and a questionnaire as instrument for data collection. The finding shows that; the teaching learning resources are available in most schools and in particular, materials related to classroom instruction are adequate. However, laboratory facilities, manuals, clinics, students dining hall and pedagogical centers are inadequate in most schools. Internet facilities in most schools are inadequate. Based on the findings, was recommend that government should allocate more funds to equip the laboratories, manuals and clinics, pedagogical centers, latrines/toilets for students and student dining hall. Addis Ababa Education Bureau and Ethiopian Telecommunication Corporation give more weight to support and regulate schools internet facilities and Education Bureau should provide training for school principals for enhancing facility-managing skills. Finally, it recommended among others that while governments should allow school administrators to perform their duties, the government should build maintenance cost into the educational budget to take care of deterioration of the school plant.

CHAPTER ONE

INTRODUCTION

This introductory chapter presents the background of the study, statement of the problem, significance of the study, ob jectives of the study, research questions, purpose of the study, and scope, organization of the study and operational definition of terms.

1.1. Background of the Study

School plant management in any organization is the effective and efficient deployment of an organization's resources when they are needed. Such resources may include human, financial, material, inventory production or information technology (Adetoro 2009).Resources also include material, human and financial made available in the realization of organizational goals, the degree of provision and utilization may affect the performance of such an organization. Education could be described as the universal means by which knowledge, skills and relevant attitudes are imported by those who possess them and acquired by those who need it through interaction between the two parties at some particular place on by some other means (Onuka2009). Education involves the teacher and the learner as well as the use of certain resources. Management of these resources is germane to the sustainable development of educational system. Babalola (2006) noted that good educational managers must carefully and effectively handled educational resources (particularly money materials and machines including computers, teaching technology and internet facilities) put under their custody.

Adeogun (2002) identified education resources as financial, material, human, physical resource centers. They are the sum total of the input that goes into the education system. The management of these resources involves proper planning, coordinating the activities of the concerns so that all works towards the achievement of set goals. The success of any educational system depends on the availability of resources and on how these resources are judiciously and prudently managed.

Teaching is a complex and demanding task that requires highly specialized skills, knowledge and resources to impact significantly on student learning. Babalola (2011)again observed that for proper teaching and learning to take place, there must be adequate infrastructure. Several studies have shown that a close relationship exists between the physical environment and the academic performance of students.

The school facilities consist of all types' of buildings for academic and non-academic activities, equipment for academic and nonacademic activities, areas for sports and games, landscape, farms and gardens including trees, roads and paths. Others include furniture and toilet facilities, lighting, acoustics, storage facilities and packing lot, security, transportation, ICT, cleaning materials, foodservices, and special facilities for the physically challenged persons. These facilities play pivotal roles in the actualization of the educational goals and objectives by satisfying the physical and emotional needs of the staff and students of the school.

The school plant is made up of the school land and all the physical structures on it. It refers to the school site, the building, the playgrounds, the equipment and other material resources provided in the school for effective teaching and learning operations, (Onourah, 2004).

According to Abraham (2003), School plant means all facilities and equipment's within the school, which used by the members of the school community

The school plant made up of the following:

- Buildings: classrooms, administrative blocks, library, laboratories, health blocks, kitchen, examination hall, dining hall, assembly hall, clinics, rest rooms, toilets, hostels, store, staff rooms, workshops.
- Educational equipment: Equipment in the laboratory such as computers, chalkboard, chalk, chart flannel graph, beakers, burette, pipettes test tubes, thermometers, weighing balances, map, glass jars, globes, etc.
- Classroom equipment such as chairs, desks, tables, chalkboards, dusters, washes hand basin, napkins, chalk etc.
- Office equipment: Cupboards, generator, typewriter, photocopying machines, etc. and Landscape, trees, grasses, lawns, hedges and accompanying paths

- Playgrounds: Football, volley ball, basketball and badminton, tennis court, swing and slide ground etc.
- Security facilities: Walls, gates, alarm system, phones, visitors' books
- Utilities: Electricity, pipe-borne water/borehole and transport facilities
- Sports facilities: Football, table tennis, basketball, etc...

Ethiopian Government has been great effort to improve the access, quality, and efficiency of the country's education system, since the revision of the Ethiopia Education and Training Policy (ETP) in April 1994. However, Inadequate facilities, insufficient training of teachers, overcrowded classes, shortage of books and other teaching materials, all indicate the low quality of education provided. This implies that there might be some challenges/ obstacles and much has been improve the quality of education in schools.

The Ethiopian Federal Ministry of Education (MOE) has currently become aware of the problems that hinder the provision of quality education and has become cognizant of the importance of launching the School Improvement Program (SIP). To meet this objective, MOE has issued General Education Quality Improvement Package (GEQIP) for general educational program, which formulated in 2006 and has implemented as a package since 2007. The package comprises six major pillars called programs; namely, Curriculum Improvement Program, Teachers Development Program, Educational Leadership Performance and Organization Improvement Program, School Improvement Program, Civic and Ethical Education Program, and Information and Communication Technology Expansion Program (MOE, 2007). These entire packages geared towards the improvement functions of schools. It has developed on the assumption of realizing the improvements in the overall practices of schools and student's achievement.

The actualization of the goals and objectives of education require the provision, maximum utilization and appropriate management of school facilities. Fenker (2004) stated that facilities management is a process that ensures that buildings and other technical systems support the operations of an organization. The International Facilities Management Association (2002) described facilities management as the practice of co-ordination of the physical workplace with the people and the work of the organization; it integrates the principles of business

administration, architecture and the behavioral and engineering sciences. School facilities management is the application of scientific methods in the planning, organizing, decision-making, co-ordination and controlling of the physical environment of learning for the actualization of the educational goals and objectives. This involves among other things, collective decision making in relation to selection of site for establishment of new schools, design and construction of new school plants including grounds, renovation and modernization of old plants, provision of equipment for academic and non-academic activities, maintenance of all facilities and review of management practices and processes.

Management is the organization and mobilization of all human and material resources in particular system for attainment of set objectives. It is the process of ensuring judicious allocation of available organizational inputs (human and material resources) through planning, organizing, directing, controlling and procuring for maximizing results. This means producing goods and services derived for the achievement of organizational set objectives, (Obi & Ezegbe, 2002). In the school organization, the material resources have to do with the school plant. Thus for the attainment of educational objectives, there should be adequate provision and maintenance of the school plant.

Furthermore, advances in science and technology, necessitate that the school manager should adopt modern methods of facilities management. This will improve the quality of teaching and learning. A direct relationship exists between the quality of school facilities provided and the quality of the products of the school.

The physical environment of a school is a major determining factor in the attainment of its objectives. It is now obvious that the problems generated by poor planning, insufficiency non-availability and poor maintenance of the school plant can no longer dismissed by a wave of hand. There seems to be no culture of school facilities maintenance in Schools. However, the maintenance of school facilities appear to vary between schools as opinions differs in maintenance activities between schools. Improvement in the management of school plant - the school buildings and teaching equipment and the expectation that societal educational objectives and needs realized in the plant is therefore desirable and expected. This is the onus of this research work.

1.2. Statement of the Problem

Now a day's quality of education has found to be the challenges of many developing countries including Ethiopia. Education system in Ethiopia has been suffering from access, equity, quality and relevance, efficiency, educational leadership practices and organization problems (MOE, 2005). The above problems caused dissatisfactions from stakeholders and suggestions and recommendations should forward from educators for change in the education system. Regarding to this MOE (2007) suggested that it is widely acknowledged achievements in access have not accompanied by sufficient improvements in quality. In response to this SIP Guidelines(2010) stated that schools to experience sustained improvement, it is probably necessary that school staff and their surrounding communities take responsibility for their own improvement. However, for schools to be able to take such improvement actions they need to have supported by experts and supervisors in administration and they need to receive some funds.

Schools exist for the purpose of teaching and learning. Human and material resources are deploying for this purpose. School facilities are the material resources provided for staff and students to optimize their productivity in the teaching and learning process. The realization that the transfer of knowledge does not only take place in the four walls of the classroom from the teacher to the students but rather that learning takes place through discovery, exploration, interaction with the internal and external environment has necessitated the creative and innovative development of teaching and learning facilities that reflect these changes.

There has been a tremendous growth in students' population without corresponding growth in the number of facilities because of economic depression and corresponding rise in cost. This has put much pressure on existing facilities. Thus, it appears that school facilities have allowed decaying. There seems to be no culture of school facilities maintenance in Bole Sub City Secondary Schools. The lack of learned and shared patterns or knowledge created by sets of people for expressing and responding to the social realities around them, culture is neither restricted to the urban nor rural schools.

It is uncommon these days to see some classrooms full of potholes on the floor comparable to the scenes on the roads. Children scarcely find space to sit or move about. Lack of ceiling makes

classrooms extremely hot for learning activities in hot weather. Some buildings have sagging roofs on them. When facilities not maintained, they constitute health hazards to the users of the facilities. Teachers on their own will not perform effectively without facilities. The students' academic performance will be negative affected, the nature of the school will be at its lowest fade and human and materials resources will be waste. in the view of importance of school facilities to the attainment of educational objectives and minimize wastages that the study investigated such activities in school since the importance of the school plant is not doubt in Bole Sub City schools, a change for the better needs not be over emphasized. The problem of this study therefore is what the state of school plant is and what strategy has been adopting to improve its management.

1.3. Objectives of the Study

1.3.1. General Objective

The main objective of the intended study was to assess the nature of physical resources as well as management strategies to achieve the desired objectives in government secondary schools of Bole sub-city in Addis Ababa.

1.3.2. Specific Objectives

The specific objectives of the study were:

- To assess the physical and material resources in secondary schools
- To find out management strategies about the school plants in the secondary schools.

1.4. Basic Research Questions

The study tries to find answer to the following basic questions in relation to the efficiency of the physical facilities management:

1. What material resources are available and how adequate are these resources in secondary schools?

2. In which ways has been these resources being managed?
3. What strategies have been suggesting for proper management schools' physical resources (school plants) managed?

1.5. Significance of the Study

The result of this study helps to raise the standard of education in schools having made useful suggestions on how to improve the management of the school plant. This study will hopeful reveal to the government and school administrators the problems facing the management of school pant and how they can be solved in Bole Sub City secondary schools. The study will thus expose the various contributions that government, school authorities, teachers and parents can make to ensure effective management of school plant in secondary schools.

To the students, this study is significant because programmers of instruction these days have their specific demand for facilities. The Ethiopian education system places much emphasis on academic and technical programmers requiring specialized facilities. As a result, the processing of educational inputs (students) would demand for facilities that are at the utmost production. The realization of this lies in a well-managed school plant. The students hopeful will benefit from a conducive and well-equipped environment that according to Adesina (1989) is a prerequisite for high academic performance. This study will also serve, as a resource material for students to find out the extent and implicate owns of utilization of the suggested strategies and for comparative studies on same topic in another school.

The finding of this study indicates secondary school administrators with more strategies, which can help them to achieve desired goals and objectives. Be adequate it to say that if the result of this work will implemented, it will assist in educational management in secondary schools in Bole Sub City, Addis Ababa.

The government of Ethiopia today is interested in equipping the secondary schools with physical facilities. This work will expose the condition of the plant to the stakeholders whom it was believe would improve the quality and provision of school plant. If the recommendations of this study will implemented, the government expenditure on material resources in the school will

reduced. This is so since good management of school plant will help to protect their financial investments in the school.

The findings of the study will serve as base line data and source of concern for future researchers.

1.6. Delimitation of the Study

The researcher has found that it is very important to delimit the scope of the study to a manageable size in order to investigate the issue thoroughly. Therefore, this research has been confined only two first cycle (grade 9 & 10) and one preparatory (grade 11 -12)government secondary schools in a single Sub-city (Bole Sub-city) for the sake of in-depth analysis with genuine investigation on the state of school plant were restricted to availability and adequacy of material resources in the school. This work also covered some managing skills and strategies for proper management schools' physical resources (school plants) in secondary schools.

1.7. Limitation of the Study

Some of hindering factors while activity this study were unavailability of participants, lack of well-organized data and endless bureaucracy especially in some selected schools. It would be better that this research encompass more number of schools from other sub-cities, however, due to temporal and financial constraints, the study has only addressed three secondary schools which are located in Bole sub city. The researcher did not see any deep standardized instrument for studying the state of school plant and the strategies to improve its management but managed a self-developed and then validated reliable instrument for the study. Only some items of the school plant were investigated. More items and other sources of information would have been involved in the study for a more detailed coverage of the content. Moreover, the study would be more explanatory, if it were analyzed using some advanced statistical methods.

1.8. Operational Definition of Terms

Maintenance (of equipment) – action taken to retain the equipment in serviceable condition or to restore it to serviceability when it is economically repairable

Physical facilities– Classrooms, libraries, laboratories, workshops, the land, buildings, and improvements of campuses, athletic fields, and other plots used for the activities of a school, includes buildings for instruction and administration, libraries, gymnasiums, power plants, and other buildings and equipment and furniture of such buildings .

Principals: a director of secondary school form grade 9 up to grade 12.

School Plant– All the physical property of a school, which includes the school site, buildings, and the various school facilities

Status – is a mark of the organization, situation.

1.9. Organization of the Study

This study is consisting of five chapters. The 1st chapter deals with back ground of the study, statement of the problem, objectives of the study, basic research questions, significant of the study, delimitation of the study, limitation of the study, operational definition of terms and organization of the study.

the 2nd chapter deals with review of related literature with the study of concepts of management and school plants, the importance of school plant in the institutions, school plant managements, facilities management relations, impact of schools plants on the implementation of education programme, influences of schools plants on learners and teachers, impact of the physical conditions of school plants, the school plant and local community members, physical and material resources in schools, methodologies for facilities management, school plant maintenance, promoting school plant maintenance culture and the role of the school administrator in plant management.

The third chapter deals with the research design and methodology. This chapter is presents the research design followed in conducting the study, the source of data, the sample population and sampling techniques carried out for the selection of responses, the type of instruments used to collect the data, the procedure pursued and the method applied to analyze the data.

The fourth chapter deals with presentation, analysis and interpretation of data obtain from the sample design. It consists of two main parts. The first part consisted on the demographics characteristics of the respondents while the second part attempts to answer the basic questions raised in the research. Briefly, this chapter devote to analysis and discussion of the data.

The fifth chapter is confined summary of the finding, the conclusion drawn from the finding and the recommendation forwarded based on the results of the study.

CHAPTER TWO

REVIEW OF RELATED LITERATURE

This chapter deals with review of related literature with the study of concepts of management, and school plants, Concepts of Management. The Importance of School Plant in the Institutions, School Plant Managements, Facilities Management Relations, Impact on the Implementation of Education programme, Influences on Learners and Teachers, Impact of the Physical Conditions of School plants, and The School Plant and Local Community Members covers. Finally, the review assesses Physical and Material Resources in Schools, Methodologies for Facilities Management, School Plant Maintenance, Promoting School Plant Maintenance Culture and the Role of the School Administrator in Plant Management.

2.1. The Concept of Management

Management is the primary force within any organization that coordinates of its various systems in relation to its objective. "Management is the art of getting things done through and with people in formally organized people" (Koontz 1961). "Management is a district process consisting of planning, organizing, actualizing, controlling, determining, accomplishing stated objectives by the use of people and other resources" (Terry 1971).

Management according to Akubue (1991) is methods where a group of people at the highest level of organization plan, organize, communicate, co-ordinate, control and direct the actions and activities of people who work for the organization towards the achievement of organizational goals. Ogbonnaya (1997) citing Donnelly observed that management is a process undertaken by two or more individuals to coordinate the activities of others to achieve results not achievable by an individual acting alone. In their own contributions, Obi and Ezegbe (2002) stated that management is the process of ensuring judicious allocation of available organizational inputs (human and material resources) through planning, organizing, directing, controlling and processing for the purpose of maximizing results producing goods and services derived for the achievement of organizational set objects. Management exists in many organizations such as educational institutions to make resources productive in order that organization may achieve its

goals. Obi (2004) conceives management as the process of planning, organizing, directing and controlling the activities of an enterprise (organization) to achieve specific objectives. Managers at every level of the organization perform these functions at varying degrees. Thus, Adesina (1990) label management as the organization and mobilization of all human and material resources in a particular system for the achievement of identified objectives of the system.

In any organization such as educational institutions, someone must fill the position and role of the leader. The leader (principal) guides the orderly and efficient handling of the affairs of the institution. The school administrators have the duty to procure and manage human, financial and material resources for effective implementation of the school programmers and for maintenance of the school. Principals themselves do not produce finished products or services; instead, they direct the teacher to do these things. Principals use the functions of planning, organizing, directing, controlling, etc. to manage teachers, materials and capital resources. The primary goals of the principal's effort are to reach the goals set by the educational institution.

In Obayi (1998) view management as the process through which an organization's strategy has formulated and implemented through the organization of work, people, finance and technology. An organization's strategy according to him consists of what and how, over the long term, what its objectives are how they has achieved through the utilization of human, financial and technological resources. In agreement, Obi (2003:2) citing Richman and Farmer, said "Management involves strategy, innovation initiating about change, creative, problem solving and decision making, actively seeking out alternatives and opportunities, reformulating resources, negotiating, resolving conflicts, dynamic or active leadership, diplomacy, statesmanship and a high degree of risk taking and entrepreneurship'.

Managers are therefore, those who bring together the money, people, materials and machineries necessary to operate an organization. Such managers must plan, organize the enterprise, direct the activities of employees and control the overall organization's operations. To do this, managers must decide how things are too has done for results to be achieved. One rationale for resource management in educational institutions is to ensure the provision and prudent use of available human, financial and material resources. Suffice it therefore to say that school management is the process of achieving educational objectives through efficient utilization of

available human and material resources. In this respect, the material resources include the school plant.

According to Weihrich and Koontz (1999) define it as the process of designing and maintaining an environment in which individuals, working together in groups, efficiently accomplish selected aims. A common idea in these and many other definitions is that management is goal-directed. These definitions convey the idea that management involves a series of on-going activities, individuals and groups working together using resources efficiently and effectiveness. All these ideas and terms are applicable to the management of the school plant.

2.2. The Concept of School Plants

Some writers define the school plant in terms of these characteristic features or physical components of schools. Adeboyeje (1994), for instance, defines it as the buildings, classrooms, and corridors, playgrounds and other lands. Some other writers however, prefer to define it in terms of its functions. Hagman (1956) defines the school building as an instrument in education. Knezevich (1975: 562) states that the school site and the school building are part of the broad concept known as the school plant. This implies that the term 'school plant' is more than the school building and the piece of land on which it is situated. For our present purposes, the term means the school building, all materials, furniture and equipment attached and unattached to the building; all structures and features on the school site, including paths, roads, parking lots, playgrounds, open grounds, trees, flowers and other objects used for implementing or supporting the implementation of an educational programme.

School facility has observed as a potent factor to quantitative education. The importance to teaching and learning of the provision of adequate instructional facilities for education cannot be over-emphasized. The dictum that "teaching is inseparable from learning but learning is not separable from teaching" is that teachers do the teaching to make the students learn, but students can learn without the teachers. According to Akande (1985), learning can occur through one's interaction with one's environment. Environment here refers to facilities that are available to facilitate students learning outcome. It includes books, audio-visual, software and hardware of educational technology; so also, size of classroom, sitting position and arrangement, availability

of tables, chairs, chalkboards, shelves on which instruments for practical are arranged (Farrant, 1991 and Farombi, 1998).

According to Oni (1992), facilities constitute a strategic factor in organizational functioning. This is so because they determine largely the smooth functioning of any social organization or system including education. He further stated that their availability, adequacy and relevance influence efficiency and high productivity. In his words, Farombi (1998) opined that the wealth of a nation or society could determine the quality of education in that land; emphasizing that a society that is wealthy will establish good schools with quality teachers, learning infrastructures that with such, students may learn with ease thus bringing about good academic achievement. Writing on the role of facilities in teaching, Balogun (1982) submitted that no effective science education programme could exist without equipment for teaching. This is because facilities enable the learner to develop problem-solving skills and scientific attitudes. In their contribution, Ajayi and Ogunyemi (1990) reiterates that when facilities would provided to meet relative needs of a school system, students will not only have access to the reference materials mentioned by the teacher, but individual students will also learn at their own paces. The net effect of this is increased overall academic performance of the entire students.

Knezevich (1975) aptly describes the school plant as the space interpretation of the curriculum. According to him, the curriculum finds its physical expression in the construction and arrangements of the school plant. The number and types of equipment and materials available, the sizes of learning spaces within the school building, their relations to each other, and nature of the learning environment, all have an influence on the methods and quality of teaching and learning. Outside the school buildings and other structures, the size and nature of the school site determine, largely, the type of outdoor instructional and recreational activities that can take place in the school.

The school plant uses as not only to provide conductively environment for both teaching and learning, but also to ensure a safe, secure hygienic and comfortable shelter for students, teachers and other staff- as teaching, learning and other activities of the school take place. The whole school plant, and not just the school building, conceived as an instrument in education (Hagman, 1956). The prime reason for its existence is for the implementation of the school programme.

The instructional programme determines the types and sizes of learning spaces provided in the school plant. The equipment and instructional materials available in the school plant determines largely how students are organized for instruction and the teaching methods adopted by teachers in the school. The numbers and sizes of spaces for instructional and non-instructional activities depend, of course, on the size of the school enrolment.

School plant, otherwise refers to as educational facilities include both human and materials resources which help to facilitate educational program. As cited in Ogbodo (1995), Castaldi (1977), defined educational facilities as those things of education, which enables a skillful teacher to achieve a level of instructional effectiveness that far exceeds what is possible when they would provide. According to Onyene (2000), "in any institution, the basic focus is on plant and administration of facilities. This is so because effective and efficient running of the system, proper maintenance and use of the structural units and facilities are quite accurate and imperative". In addition, Adeogun (2001) in this direction, opined that "reform in science through high achievement of educational objectives in science subjects, should focus on effective school plant planning and management."

Accordingly, Oyesola (2000) stated, "well planned and maintained school plant or educational buildings and facilities will not only enhance good teaching process but also facilitate learning". In his opinion, school buildings and educational goals are closely related and interwoven. School plant enhances the comfort, safety of pupils and teachers by increasing their performances. School plant enhances the quality of instruction. Oyedeji (2000), citing Adesina (1980), noted that the quality of education received by pupils bears a direct relevance to the availability or lack of physical facilities and overall atmosphere in which learning takes place.

Enaohwoand Eferakeya (1989) defined school plants as the entire physical infrastructural facilities provided in the school for educating the child. Ojedele (1998) have a broader view of school plant as including the school site and all the structures that put in place to aid effective teaching and learning in the school system.

In his own view, Yusuf (2008) defined school plant as the space interpretation of the school curriculum. The curriculum implemented if the physical facilities required for teaching and learning are not available. Without school plant, the school cannot exist to this end, it becomes

necessary to ensure that school plant properly planned and maintained to facilitate the effectiveness of the school system.

Moreover, school plant refers to all non-consumable and durable physical and infrastructural facilities available in the school for teachers' and students use in order to make teaching and learning effective and thus ensure the achievement of predetermined aims and objectives of education hence, the school plant includes the 'space' within the school premises which houses the basic systems and structures.

For Yusuf 2008 and Ajayi (2007), school plants comprise the following:

- Machinery: It includes machines and tools used in the workshop, duplicating machines and so on.
- School site: This refers to the entire landscape on which the school is permanent and semi-permanent structures have built.
- Buildings: These include classroom blocks, administrative offices, libraries, workshops, laboratories, students' hostels, staff residential quarters, assembly halls, toilets, dining hall and so on.
- Equipment: These consist of typewriters, photocopiers, computers, sporting equipment, laboratory equipment and workshop equipment.
- Furniture: Desks and seats used in the classrooms, office furniture, residential furniture and so on
- Vehicles of various types and sizes
- Books textbooks, periodicals and all library books
- Electrical infrastructure: Air conditioners, electrical fans, generating sets and other electrical fittings
- Water supply infrastructure: This involves deep wells, boreholes, water tanks and public water.
- Accessories: These include playgrounds, lawns, parks garden and farm.

The term school plant refers to the school site, the buildings, the playgrounds, the equipment and other material resources provided in the school for effective teaching and learning operations.

According to Abraham (2003), school plant means all physical facilities and equipment within the school, which used by members of the school community. All the physical structures in the school fall within this category.

School plant means the site where the school programs and activities take place or the environment where the school curriculums were implementing. Thus, Obi &Ezegbe (2002) defined school plant as the space interpretation of the school curriculum. In other words, school plant can be physical expression of the school programmers and activities. It is a consciously designed and controlled environment with the sole aim of promoting teaching and learning activities within the school. It is putting together of facilities to protect the physical wellbeing of the individuals associated with the school. School facilities are the operational inputs of every instructional programme.

2.3. The Importance of School Plant in the Institutions

Many educational administrators and planners have highlighted the importance of school plant. According to Nwaogu (1985) asserted that no matter the strength of manpower resources in the system, educational processes must require a conductively physical accommodation, libraries, furniture and playgrounds. When these instructional facilities are lacking, teachers are hardly effective in their instructional activities. Supporting this view, Bosah (1997) quoting Lorton and Wally, said that learning experiences are richest when the environment around the student meets their needs.

Udoh & Akpan (1987:288) also pointed; the right type of atmosphere required for effective learning is that consisting of better teaching facilities. Adesina (1980) also lends credence to this as he claims that the quality of education that our children get has direct relevance to the availability or the lack of physical facilities and overall atmosphere where the learning takes place. Since the basic aim of the school is to create relatively paramount changes in the behavior of children, the need for adequate and well-maintained facilities becomes eminent.

Mgbodile (1986) stressing the need for school plant, observed that the physical appearance and general condition of school physical facilities are the striking basis upon which many parents and friends of any educational institutions may make their initial judgments about the quality of what

goes on in the school. In short, the physical facilities play a major role in determining the type of relationship between the school and the community. This is because parents and pupils make their judgments and take their decisions on whether to associate themselves with a particular school after a careful evaluation and consideration of the facilities in the school. Ani (1997) while supporting the above statement opined that if the quality and quantity of physical facilities attracts the admiration of a parent, the conviction of the parent will be that since the quality and quantity of facilities is of such level, the quality of the staff and school programme will be of high standard. Thus, Obi (2001) said that the general landscaping of the school speaks succinctly of the tone of the school and the disposition of the management. Therefore, to attract the admiration and acceptance from the community, there is need for a well-planned school physical facilities and equipment.

In the present day Ethiopia, schools cannot be divorced from the communities. Therefore, there is need for the planner of the school plant to bear this observation in mind while structuring and procuring the plant. In most communities that form the neighborhood of schools, certain activities like meetings, marriage ceremonies, sport services or other forms of gathering, which require the use of good and appropriate environment, take place in the school. A school with poorly planned environment in terms of accommodation, furniture and other forms of equipments cannot attract the attention of the community and thus fail to satisfy the social needs of the community.

Onwurah (2004) citing Wheler stated that the school plant plays a crucial role in the development of the three domains of Bloom's Taxonomy of educational objectives namely cognitive, affective and psychomotor. Educational facilities has needed for developing cognitive area of knowledge, abilities and skill, which are prerequisites for academic achievement. They are essential for developing values, commitment, positive emotions and social interactional sensitivity in learners. Some authorities such as Obi (2001) and Abraham (2003) have seen school management as judicious use of human and material resources as to achieve the objectives of the school. In other words, if there are no human and material resources in school, there will be no administration. Therefore, there is need for a well-planned and organized school plant to make for effective school administration and management. If there is shortage of accommodation, furniture, equipment or other material resources, this can affect the productivity

of the teachers, the administrator – teacher relationship and even administrator – pupil relationship.

Moreover, the academic performance of the students and their outward behavior are major yardstick for assessing the effectiveness of school principals and this has closely tied conductively school environment. Obi (2001) also noted that environment could influence the leader and the led.

Therefore, the extent to which the leader will achieve organizational success depends upon a combination of variables among which effective management of school plant is one. Efficient management of school facilities is of vital importance in making the school a pleasant, safe and conducive place for students to realize their maximum potential in both curricula and co-curricular activities (Lyons, 2012). The cardinal aim of teaching and learning process is to bring about in the learner desirable change in behavior through critical thinking. This process does not take place in a vacuum but rather in an environment structured to facilitate learning. In organize of this fact Sallis (2002) asserted that an educational programme cannot be effectively implemented using only policy guidelines even if the teachers are trained and committed without adequate and appropriate physical facilities such as classrooms, equipped laboratories, appropriate accommodation incase of boarding schools, toilets, playgrounds and safe environment.

Wilson (2007) observed that educational outcomes in schools are function of utilization and adequacy of teaching/learning resources in varied ways: Schools that do not have adequate facilities such as workshops, laboratories, classrooms, teaching learning materials are unlikely to post good results. The principles of facilitating effective learning and teaching requires acquisition and use of practical skills while tapping and putting into practice the learners own experience. Students receive inputs from the external environment in form of human and material resources, process them and empty the same into the society as finished products and services. The quality of the products bears a direct relationship with the qualities of the facilities deployed in the process of production.

These facilities play a pivotal role in the actualization of the educational goals and objectives by satisfying the physical, emotional and cognitive needs of the staff and students. Abayomi and

Olukayode (2006) states that resources in schools are important in education because learning takes place best through discovery, exploration, and interaction with the internal and external environments. As a result, one of the main emphases in education today is the shift from a teacher-centered approach to a more learner-centered approach. This involves actually putting the learner's needs at the center of activities. To achieve this goal teachers need to use a wide variety of resources, which can enrich the learning environment. Textbooks and resource materials being the basic tools that enable effective teaching and learning, their absence or inadequacy makes the teacher handle subjects in an abstract manner thus portraying it as dry and non-exciting (Moore, 2008).

Secondary education is vital to national development since it serves as the link between primary and university education. Students shape their future careers at secondary level and as such, provision, utilization and management of educational facilities become crucial to achieve the set objectives. According to Abdulkareem and Fasasi (2012), application of appropriate management techniques would assist in taking care of all school facilities. This implies that administrators and inspectors should be keen and attentive to facilities, which might have suffered neglect due to carelessness, ignorance and lack of commitment. Well-managed school facilities are not only durable but allow allocation of scarce resources to other educational pressing needs.

Moreover, Adesina and Ogunsaji (1984) noted that for effective performance of educational programmers, the school plant and educational goals should been viewed as being closely interwoven and interdependent. Apart from protecting pupils from the sun, the rain, heat and cold, the school building represent a learning environment which has a tremendous impact on the comfort, safety and performances of the children. It is therefore an incontrovertible fact that school plant is an important factor in the achievement of educational objectives. It is also obvious that the insufficiency, non-availability and poor maintenance of the plants would hamper the management of educational programmers.

2.4. School Plant Management

People understood School plant management in many ways. This is because of the organizational divisions and compartmentalization of some of the basic management function concerned with materials in corporate activity. However, physical facilities management is a function of a serious of interrelated activities that has geared to effective achievement of the organizational goal (Datta, 1998.3).

The term 'management' has defined in various ways by different authors. Griffin (2003: 6) defines it as "a set of functions directed at the efficient and effective utilization of resources in the pursuit of organizational goals." Terry and Franklin (2003: 4) are more specific about the activities involved in the performance of this function.

According to them: Management is a specific process consisting of the activities of planning, organizing, actuating, and controlling, performed to determine and accomplish stated objectives with the use of human beings and other resources.

Weihrich and Koontz (1999) define it as the process of designing and maintaining an environment in which individuals, working together in groups, efficiently accomplish selected aims.

A common idea in these and many other definitions is that management is goal-directed. These definitions convey the idea that management involves a series of on-going activities, individuals and groups working together using resources efficiently and effectiveness. All these ideas and terms are applicable to the management of the school plant. School plant management entails making and carrying out series of decisions in building a school plant according to need. It also involves operating and using it effectively and efficiently, while ensuring that it is in a functional state as the educational programme has being implemented.

School plant management involves a number of on-going and related activities – determining the need for school plants, educational programme planning, school facility or building design, building construction, furnishing and equipping the school, school plant operation, utilization and maintenance and school plant modernization or renovation, as the need arises. Fenker (2004)

states that facilities management is a process that ensures that building and other technical systems support the provisions of an organization. School plant management ensures that school buildings and grounds, equipment, materials, technical and other service systems, facilitate and support the provision of education by a school.

The responsibility for managing the school plant rests with the head teacher or the school principal. The school principals have not knowledgeable in some aspects of school plant management such as: school facility design and building construction but his/her inputs and in some cases the inputs of other school staff during decision making in these areas may be necessary as it is the principal or head teacher and the staff that will make use of the buildings upon completion. It is the responsibility of the head of the school to ensure that the school plant is regularly maintained, i.e., kept at as near its original state as possible. It is also part of his/her responsibilities to ensure that the school plant is open for use effectively and efficiently on daily basis and that it has kept neat and tidy always.

In achieving these and other ends for which the school plant has built, the head teacher or principal must make use of teachers, other school staff and students, detailing their duties and roles and coordinating their efforts to ensure that the right things has done at the right time. Effective school plant management ensures that school facilities has effectively used for teaching and learning with little or no interruption. For management to be worthwhile, the competence of a manager is highly crucial. For instance, the framed goals and objectives set standards of performance. Created productive working environment, and obtained needed support etc… of effective leaders are significant factors for determining school services.

In addition, the manager's ability to optimally utilize human resources is essential for effective achievement of the organizational goals are material, equipment, facilities, information etc… resources can only be put to best possible combination by human beings(Chanda 1987: 8; Lotto and Mc McCarthy in Cambel et al, 1983:131).

In support of this Datta (1998: 14) has this say " even after many years of development of management science, human element in management process has not changes, although it has been over shadowed by procedures and methods and techniques of control". Depending on these facts, thus, school plant management can be defined as," the function responsible for the

coordination of planning, sourcing, purchasing, moving, storing and controlling resources in optimum manner so as to provide a pre-decided service to the customer at a minimum cost."

According to Kreitner (in Chandan 1987: 4-5) defines management as follows: "management is a problem solving process of effectively achieving organizational objectives through the efficient use of scare resource in changing environment". Hence, management capitalizes on wise use of the available limited resources for running organizational activities. Accordingly, effective management is essential for constrained resources environment. Important resource like people, time, capital, raw materials are all time and limited; they are all scare in nature. Therefore, management must make conscious efforts to get the most of these resources (Chandan, 1987:5). For the same reason, Melaku et al (2000:8) also believes that management is an instrument specifically charged with making the resource productive. Therefore, management is highly concerned in the achievement of organizational objectives through efficient and effective utilization of the available materials. It provides useful techniques and methods that enable the most effective combination of the available human, material, financial and time resources.

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Resources also include material, human and financial made available in the realization of organizational goals, the degree of provision and utilization may affect the performance of such an organization. Education has described as the universal means by which knowledge, skills and relevant attitudes has imported by those who poses them and acquired by those who needs through the interaction between the two parties, at some particular place on by some other means (Onuka 2009).

Education involves the teacher and the learner as well as the use of certain resources. Management of these resources is germane to the sustainable development to educational system. Babalola (2006) noted that good educational managers must carefully and effectively handled educational resources (particularly money, materials and machines including computers, teaching technology and internet facilities) put under their custody.

Adeogun (2002) identified education resources as financial, material, human, physical resource centers. They are the sum total of the input that goes into the education system. The management of these resources involves proper planning, coordinating the activities of the concerns so that all works towards the achievement of set goals. The success of any educational system depends on the availability of resources and on how these resources judiciously and prudently managed.

The human resources in education are the school personnel's teachers and the non-teaching staff. The qualities of these teachers affect their performances, productivities in turns qualities of teachers affect the academic performance of the students.Akindutire (2001) noted that the quality of input in an educational system determines to a very reasonable extent the quality of output suffice it to say that resources well managed would definitely produce quality output.

Adedeji, Olaniyan and Owoeye (2001) remarked that the quality of school management of human and material resources has a very strong relationship to the student academic performance. Human resources (teachers) in education should been seen as assets in an educational institution. Hence human resource management can help to tap their potentials and increase their loyalty by ensuring a very healthy education environment. The strategic approach to human resource in education is to pay adequate attention to the development and satisfaction of teachers.

2.5. Facilities Management Relations

The responsibility of management of facilities requires collective efforts. Management processes, which involve planning, organizing, decision-making, leading, coordinating and controlling, have been applying in facilities management. Broadened educational goals and objectives because of changes in socio-economic development have necessitated the involvement of several

minds in the facilities management process. It requires expert input from a wide range of stakeholders. Collaborative efforts bring into facilities management new ideas and perspectives.

Over the years, school managers have emphasized that physical facilities available for academic and non-academic activities are grossly inadequate. This issue is very sensitive and demanding because it bears directs relevance to the funding of education and most importantly to the quality of outputs of the educational system. Available facilities in most schools regarded as obsolete in terms of quality and quantity. These facilities has provided when the student population in the school was reasonably low when compared to the population of the same school presently using the same facilities.

According to the report of the educational facilities laboratories (1968, p.27) adjectives used to qualify such facilities are rigidity, inaccessible, sterility, formality, isolation, starkness, immobility and permanence. These facilities no longer satisfy present day needs. With quantum leap in school enrolment, increasing number of academic programmers and limited resources, flexibility must be an integral part of the planning process.

A facility has been establishing that they will serve new functions in future. In facilities planning, Caudill, (1954, p.18), emphasized that, "more specific terms like expansible space that can allow for ordered growth, convertible space that can be economically adopted to programme changes, versatile that serves many functional and malleable space that can be changed at once and at will should be used". For these to be achieved Regnier (1980, p.102), "advocates team efforts of facilities planners and capital budget analysts, administrators, academic staff, fiscal and institutional research personnel".

2.6. Impact of School Plants on the Implementation of Education Programme

The character of a school plant determines, to a considerable extent, the types and quality of curricular and co-curricular activities that take place in it. The nature and size of the school building determine the shape and size of the classrooms. The shape and size of the classrooms with their equipment, furniture and the types and variety of educational materials available affect the ways in which learners can be organized for instruction, the possible methods of teaching that can be adopted by teachers and the types of learning activities that the students can be engaged

in. A practical lesson has not been organizing for science in schools without science laboratories, or in schools with science laboratories but without the relevant materials and equipment. Whether or not the school building has adequately planned to accommodate the educational programme, it affects the life and activities that go on within it.

Hagman (1956) describes the life that goes on within a school building vividly:

> *...It may permit and encourage freedom, activity, group study habits, development of a sense of the beautiful and other aspects of a well-rounded educational programme. Within its walls and on the grounds around it, it may be developing good learning situations for all children. Alternatively, it may by its appearance, arrangement, structure, or size inhibit fine educational experiences.*

This is in agreement with Miller's (1965) observation that a school plant can be either an effective tool or a barrier to education. If a school's facilities has poorly planned and designed with inadequate number, sizes, and arrangement of learning spaces, it may hinder the operation of the educational programme. As well, poor planning and design of facilities may lead to undesirable behavior of learners and inability of the school to achieve its educational goals.

In this regard, Nwagwu (1978) observes that the quality of education that a child receives has directly related to the availability or lack thereof of physical facilities and the overall atmosphere in which learning takes place. The location, size and nature of the school plant affect the types and number of curricular and co-curricular activities that can take place in and outside it.

A school built on a small site, for instance, may not have enough space for playgrounds and recreational facilities. The same thing has been say about a school plant in a swampy place or difficult terrain. The physical and health education aspect of the educational programme has hardly been adequately implementing in schools built on such sites. The extent of outdoor learning in such schools may also be severely limited. Indeed, there is no doubt that attainment of educational objectives will be almost impossible without an adequate school plant.

2.7. Influence of School Plants on Learners and Teachers

The school plant is of special significance to learners; for children who are just entering the school, for the first time in particular, "the school building needs to be interesting and inviting" (Cramer and Domian, 1960). This is necessary, according to these authors, because the impressions of those first years may have an impact on the attitude of the child towards school. Writing in the same vein, Appleton (1975) states that the school building generates its own ethos to the child by virtue of its appearance, design and general environment in which it is set. Fagbulu (1972) is of the opinion that a child's sense of belonging to a school has strengthened if its physical plant is sound, functional and pleasing to the eye.

From the foregoing, we can infer that the nature and look of a school plant, especially the buildings, seem to be some of the important factors that influence children's attitude towards attending school and, perhaps towards education as a whole. It follows then that any amount of money spent on beautifying our school buildings, especially those at the primary level of education, is money well spent.

In addition to its impact on the attitudes of, especially, the young ones towards school and its usefulness to them for formal learning, a good school plant with the necessary facilities plays a major role in fostering the development of good sanitation and healthful habits among children and staff. Such a school plant meets their physical needs for shelter without which teaching and learning activities can hardly go on smoothly.

When teachers work in well-equipped and well-furnished school plants with good air quality, rich natural lighting and under suitable thermal and acoustic conditions, their levels of motivation and stability on the job increase. The physical plant is so important in education that if it does not meet certain standards or if its quality or condition deteriorates, it may have some negative consequences on the teaching and learning process, as well as on the staff and students.

2.8. Impact of the Physical Conditions of School Plants

There is growing evidence that the physical condition of a school has related to students' academic achievements and behavior as well as the well-being of staff and students. A study of

The District of Columbia schools in 1991, for instance, found that standardized achievement scores among students in poor condition were six per cent lower than those in fair condition while 11 percent below schools in excellent condition. Another study of Virginia high schools in 1993 found that student scores on achievement tests, adjusted for socio-economic status, were up to five per cent lower in buildings with lower quality ratings (American Federation of Teachers, 1997).

Even some building design features have been show to have measurable influence upon student learning. Among the influential features and components found to have negative impact upon student performance in buildings where their deficiencies exist are those affecting lighting, temperature, acoustics and age (Earthman, 2002). Young, Green, and Roehrich-Patrick (2003) have summarized results of some studies on specific quality factors as follows:

Students had higher achievement scores in newer facilities. As the age of the facilities decreased, there was a corresponding increase in mathematics, reading, and composition.

- There were fewer disciplinary incidents in newer facilities.
- Attendance records were better in the new facilities.
- As the condition of the facility improved, achievement scores improved.
- Stimulating environments promoted positive attitudes in students.

Some studies have established that the physical conditions under which teachers work have direct positive and negative effects on their morale, sense of personal safety, feelings of effectiveness in the classroom and the general learning environment (American Federation of Teachers, 1997).

2.9. The School Plant and Local Community Members

The school plant in both urban and rural areas of the country is a structure through which many parents hope to realize their dreams and educational aspirations for their children. To them, the school presents a window of opportunity to both the rich and the poor, more so with the democratizations of education in the country. A well-designed and attractive school plant is often a source of pride to the local citizens and generates goodwill for public education among them.

According to Young, Green, and Roehrich-Patrick (2003), the quality of school facilities influences citizen perception of schools, which in turn, influences their support for public education.

The school plant serves a number of important purposes for members of the community in the country. It often serves as a venue for different social functions like civic reception of some important visitors and dignitaries, wedding receptions, community or town meetings and other occasions and functions that require the gathering of a large number of people.

In addition to social functions, the school plant has often used as a venue some non-formal education programmers like adult or mass literacy programme, and serve as study centers for some university and colleges of education part time programmers. In fact, without the cooperation of the school heads who allow the use of their school plants, it would have been very difficult for tertiary institutions in the country to operate their sandwich programmers.

In general, the school plant is undoubtedly a very important instrument in education. Its effectiveness in the implementation of an educational programme and in meeting the physical needs of students and staff of a school and in affecting students' academic achievement depends, however, on its physical condition or quality. The school plant is also of much significance in the school's local community.

2.10. Physical and Material Resources in Schools

The school plant includes the material conditions such as the school building, furniture, playgrounds, hostels, classrooms, school libraries, apparatus and equipment's etc. These are the components of the school plant, which are helpful in realizing the aims and objectives of education. Proper functioning of the school plant depends upon the quality and adequacy of the components of the school.

According to Adeyemi and Adu (2010), it is widely accepted that education is one of the leading instruments for promoting economic development as it encompasses some processes individuals go through to help them develop and utilize their potentials. Further Okeke (2007) points out that, through education, individuals acquire knowledge, skills and attitude that are necessary for

effective living. According to Onsonu et al (2006), central to the educational process is secondary education, which provides a vital link between basic education and the world of work on one hand and further training on the other. Usman (2007) noted that central to the education process are educational resources which play an important role in the achievement of education objectives and goals by enhancing effective teaching and learning.

According to Adeogun and Osifila (2008) physical resources include laboratories, libraries, classrooms and a host of other physical infrastructure while material resources include textbooks, charts, maps among others. Akisanya (2010) commenting on educational resources says they are important because the goal of any school depends on adequate supply and utilization of physical and material resources among others as they enhance proper teaching and learning the reason why this study is important.

Adequate provision of school facilities in relation to the students' population is important because the quality of education that our children receive has affected by the availability or non-availability of physical facilities (Adesina, 1990). Furthermore, provision of necessary facilities in schools provides a challenging environment for students to learn and for effective teaching by the teachers (Bolorunduro, 1998). On the other hand, lack of adequate facilities such as textbooks, ill-equipped classrooms, laboratories, workshops and library and poor facility management and utilization are among the probable causes of student's poor performance in examinations (Olubor, 1998).

2.10.1. Instructional Facilities

A. Classroom

Out of the facilities in the school, classroom is one where are students passing relatively much of their time. Classrooms are the major component of the school plant. There should have a classroom for each section of students and there should be as many classrooms as there are sections in different classes in secondary schools. The classrooms should provide sitting arrangement to accommodate 40 to 50 students with adequate space for students and teachers to sit, stand and move freely for using maps, charts, pictures etc. The classroom should be ideal and

a workable one according to the present need. The size of a classroom depends upon the number of students in the class.

The classroom should have a pleasant look. The room has been tasteful decorated and the walls have been painting with some light color. Each classroom should have essential equipment of desk and chairs for the pupils, wall blackboard, a chair and a table for the teacher and a map stand. There should be adequate lighting arrangement in each classroom. The rooms should have sufficient number of sources in the form of doors, ventilators and windows for admitting light from outside. The light should come in only from the left so that the pen or the pencil casts no shadow when the child is working at his desk. For this purpose, the seating arrangement has also been caring. For altering intensity of light according to need, suitable curtains and screens has been providing for the windows and doors.

Proper ventilation of the classrooms is just as important as adequate lighting. The classroom should have sufficient number of doors, windows and ventilators to admit light and air from outside the classrooms. The size and number of the windows has been deciding based on the size of the room. Ceiling fans has been fitting in the classroom, which helps in solving the problems of over-perspiration, draught and suffocation in summer and rainy seasons.

B. Library

Library should find a dominating position in the center of the academic life of the school. It is the most important facility in the school and it improves academic life of a school. Today it has considered to the most powerful media to promote self-education, to acquire information and to provide research facilities.

Every school building should have a separate wing for library and reading room. Where resources permit, reading room should be separate from the library hall. The library room should be “attractive, colorful and inviting.” It should be well decorate, to present a homely look. It should be centrally located so that it may be easily accessible to pupils.

The library room should be providing with adequate natural light and ventilation with satisfactory window shades and provision for needed artificial light. The furniture, bookshelves,

tables, chairs, reading desks should be carefully design with an eye to artistic effect as well as functional efficiency. It should be well equipped with nicely selected books and literature, which should be easily approachable and accessible to all. It should be kept neat and clean.

The library should create a conductive reading atmosphere to encourage students to read general books. It should provide useful social experiences. Therefore, the school should have a library with a full-time librarian to stimulate learning. Therefore, library should be an intellectual hub in school with a qualified librarian.

Library is an essential factor in teaching-learning process. It forms one of the most important educational services. The educational process functions in a world of books. The chief purpose of a school library is to make available to the pupil, at his easy convenience, all books, periodicals and other reproduced materials which are of interest and value to him but which are not provided or assigned to him as basic or supplementary textbooks. According to Fowowe (1988), a library must be up-to-date and at the same time allow access to older materials. It must be properly support financially to fund materials and services among others.

While itemizing the types of libraries, Ola (1990) opined that secondary school library in whatever form, has replaced the traditional method of 'chalk and talk' in imparting knowledge to students that its effect on academic performance need not to be over-emphasized. He concluded that a well-equipped library is a major facility, which enhances good learning and achievement of high educational standard. In his words, Farombi (1998) reiterated that school libraries might not be effective if the books there in are not adequate and up-to-date as its impact may only be meaningful if the library could be open to the students always for a considerable length of time in a school day.

C. Laboratory

Laboratory has been conceptualizing as a room or a building specially built for teaching by demonstration of theoretical phenomenon into practical terms. Farombi (1998) argued the saying that "seeing is believing" as the effect of using laboratories in teaching and learning of science and other science related disciplines as students tend to understand and recall what they see than what they hear or were told. Laboratory is essential to the teaching of sciences and the success of

any science course is much dependent on the laboratory provision made for it. Affirming this, Ogunniyi (1983) said there is a consensus among science educators that the laboratory occupies central position in science instruction. It could be described as a place where theoretical work is practical whereas practical's in any learning experience involves students in activities such as observing, counting, measuring, experimenting, recording, observation and carrying out field work. These activities are very different from the theoretical work, which involves listening to talks and taking down notes from such talks.

According to Ango (1986) laboratory work Stimulates learners' interests as they are made to personally engage in useful scientific activities and experimentation; Promotes that science is not only products or process; affords the learner the basic skills and scientific method of problem solving; Knowledge obtained through laboratory work promotes long term memory.

Laboratory helps to provide a forum wherein the learner has given the exercise to subjects, his beliefs, ideas, statements, theoretical propositions etc. to some forms of experimental test (Soyibo, 1990). To maintain and arouse the interests of students in subjects involving laboratory work, the teacher should be effectively involved in order to transfer knowledge and facts to learners for a good performance in any examinations.

D. Resource Center

Herrick. John H. et al., (1956:348) prefers the term as a place where teachers' and pupils find teaching materials that assist the instruction. According to him, resource center space has designed in the basis of activities to be providing in the local school program. In the center instructional materials has made, stored and distributed whenever necessary. For these purposes to be fulfilled the center needs sufficient space for workshop and display room. Kimbrough Ralph B. (1968: 302) on his part calls resource center as "the instructional material center." He discusses this center as it includes audio-visual materials (projections, equipment, films, filmstrips, slides, recordings and charts) in addition to other material. For him it is the expansion of responsibility to coordinate material facilities and teaching aids to make the current school program.

E. Textbooks

A textbook constitutes an important tool for academic achievement. Many writers (Heyneman and Loxley 1982, Walberg 1984, Beeby 1986) have variously highlighted the contribution of textbooks to academic achievement. Studies have revealed in some instances, that textbooks provide the only source of information for students as well as the course of study for the subject.

Earlier in his own contribution, Altbach (1983) opined, "nothing has ever replaced the printed word as the key element in the educational process and, as a result, textbooks are central to schooling at all levels".

Squire (1991), writing on teachers reliance on textbooks, stated that those seeking to improve the quality of education believed that improvements in instructional materials would inevitably lead to changes in actual teaching. For many teachers, textbook can provide an excellent and useful resource, without usurping the position of the teacher. While the selection of a textbook has been adjudging to be of vital importance to academic achievement, it is sad to say that relevant textbooks are not available for teaching and learning activities (Soyibo 1987, Odulaja and Ogunwemimo 1989).

A study by Altbach (1993) noted that nothing has ever replaced the printed word as the key element in the educational process and as a result, textbooks are central to schooling at all levels. According to Owoeye and Yala (2010), in some instances textbooks provide the only source of information for students as well as the course of studies for the subjects Squire (1991) writing on teachers reliance on textbooks stated that those seeking to improve the quality of education in instructional materials would inevitably lead to changes in actual teaching. While the selection of a textbook has been judge to be of vital importance to academic achievement, it is sad to say that relevant books are not available for teaching and learning activities.

2.10.2. Administrative Facilities

A. School office

School office is the place where ample information about school occupants is organized and records has reserved for future use. Kimbrough Ralph B. (1968: 343) lists down what school office includes as principal's office, reception area, guidance and counseling offices, teacher's workroom, curriculum coordinators office, teachers' lounge, vault, storage rooms for supplies and books, conference room, and health clinic. He reminds us that these offices have opened established to serve the instructional need of the school.

B. School store

In the school, stores are significant places to keep unused school furniture and equipment, reserve textbooks and old files etc… for effective handling of materials. Herrick John H. et al (1956: 373) suggests two types of stores in big schools; the central storage and small building stores. According to the authors, the reason for this is to ease the handling and to prevent pilfering, spoiling, and other reasons. For proper handling of material, economy of space, storage equipment as if shelves and bins should be consider in the design of the plan.

2.10.3. Environmental Facilities

A. School Ground

Authors such as Kimbrough Ralph B. (1968: 337 - 338) and others discuss as a school ground that is kept clean and beautiful service for various purposes. Firstly, as an instructional space for physical education and other small and large group teaching , secondly, as a recreational place for swimming, thirdly, for partial activities like gardening and fishing. Proper planning of school ground will help for the safe arrangement by zoning various school activities mentioned earlier to be continue in harmony for a long period of years.

For this, principals and other faculty members are expect to work hard for play areas safety and healthy by avoiding unnecessary obstacles fulfilling other auxiliary spaces like locker, dressing rooms, showers, first aid room and storage spaces for uniform and equipment.

In addition to Rao, V. K and Reddy R.S (2005: 67) and other remind us spaces and places to be organized in the school ground as parking, walks from one block to another and space for planting fruits, indigenous trees and flowers to beautify and create attractive scene that encourage pupils, teachers and others to stay in alone, in group, in crowds and mobs of hundreds for various purposes that support the instructional need.

B. Health Service Facilities (Toilet and water facilities) in the school

Provision of safe water and appropriate sanitation facilities are the first requirements in the creation a healthy learning environment. Supporting this, Miliband in ERIC (2007:1) says, "if you get the toilet right, you get the teaching right." This implies that the school toilet facilities are crucial aspects of students learning environment. They not only enable pupils to have access of facilities for good health and hygiene but also help students to understand the ways of managing was waste and water resources in a scientific and responsible manner (Drangert, 2010:1).

Toilets are important. Everybody needs to use them. Charles C. Wilson, M.D (1964: 253 - 255) discusses as toilet in school is an important facility that makes students to feel schools as their home especially to attract girls' education and to reduce dropouts of girls. A clean, bright, well-ventilated toilet room for both sexes is important that facilities healthy teaching learning environment. It has to be located in the right place to safe guard water bodies, air pollution and accessibility from every classroom and secure girls. It has to be constructing of non-absorptive materials for effective clearing.

There can be no question that water means health, better development and an acceptable quality of life. A school that provides safe drinking water implies that it has contributed to the physical and intellectual development of its students just much as a dedicated teacher who imparts the basic knowledge to students (Solsona and Fuertes, 2003: 19).

Safe and sufficient water supply is vital in the school for cleaning, gardening, drinking, safety and recreational purposes. As in rural areas when the water source is other than pipeline, periodic, chemical and bacteriological check is necessary to safe guard the school community from water borne diseases Charles C. Wilson, M.D (1964: 249- 250).

Generally, the toilet and water facilities in schools can have the following core functions: enhancing pupils' attendance, promoting gender equality and equity, making pupils change agents in their community and safeguarding pupils' health.

2.11. Methodologies for Facilities Management

Planning, as in all management processes is the first logical step in facilities management. According to Dror (1967, p.99) planning is the "process of preparing a set of decisions for action in the future directed at achieving goals by optimal means". A plan for facilities management must be an integral part of the overall Federal, State and Local Government educational master plan. It is a well-articulated conceptualization of the educational philosophy, goals, objectives and specification for short and long-term objectives including implementation of the planned curricula and extra-curricular activities. It also includes budget priorities for facilities management. A facilities management plan starts with the educational philosophy that serves the needs of the individual in a dynamic and knowledge based economy. The educational system should prepare individuals for life in a constantly changing world. Facility management plan should therefore give meaning to the educational philosophy.

A second step is the development of broad educational goals and specific objectives. These goals and objectives should be comprehensive enough to cover all aspects of the educational programme and make adequate room for flexibility to allow for specific individual and group needs. Planning has not meaningful been carried out without accurate information, which should be collected through facility audit. According to the Planning Guide for Maintaining School Facilities (2003), facility audit is a comprehensive inventory of a school's facilities that provides a standard method for establishing baseline information about the components, policies and procedures of a new or existing facility. It provides information on the status of school facilities.

Assessing buildings, grounds and equipment, documenting the findings, carry it out and recommending service options to increase efficiency reduce waste and save money.

Brooks and Atkin (2003, p.13) outlined the stages in facilities management as follows:

> **Analysis stage**- assemblies all relevant facts about the organizations objectives, needs, and policies, a review of resources processes, systems and the physical assets themselves, together with their attributes in terms of space, functions and utilization
>
> **Solution stage**- assemblies criteria for judging options, evaluating these against the objectives of the organization and develops the facility management strategy
>
> **Implementation stage**- completes the strategy development process through the establishment of an implementable plan that incorporates the key elements of procurement, training and importantly communication.

2.12. School Plant Maintenance

Maintenance of facilities is a process where one endeavors to continue keeping facilities in existence, in good condition and working order. Maintenance enhances performance and durability as well as also reduction of wastage. According to Asiyai (2012), maintenance of educational facilities is one of the most neglected tasks in many institutions with far reaching ramifications.

Facility maintenance is an issue that concerns all levels of the educational system ranging from the prekindergarten to the tertiary levels. Some of these facilities are architecturally obsolete and therefore cannot contribute to functional education. Maintaining the new buildings, renovating and modernizing the old ones require considerable expertise and commitment of human and material resources. Changes in weather conditions and lack of maintenance culture are responsible for the aging and deterioration of school buildings, grounds and equipment. School managers and teachers who constantly use school facilities lack knowledge of facilities maintenance planning. Consequently, they fail to integrate facility maintenance into the management of the school. The issue of facility maintenance has haphazardly addressed at all levels of the educational system. Repairs take place only when problems arise due to break down

of the existing facility. Facility maintenance entails providing clean and safe environment for teaching and learning. It also involves provision of adequate facilities for teaching and learning. This type of maintenance should been adopted in the facility maintenance plan. These are preventive, routine, emergency repairs, and predictive maintenance.

2.12.1. Preventive Maintenance

This type of maintenance, as the name implies, is the service rendered on school buildings, equipment and furniture in order to prevent malfunctioning of an equipment, or early deterioration of buildings, parts of buildings, furniture and equipment in order to maximize their useful life.

Candoli (1988) defines this type of maintenance as "that programme for servicing machines, systems and structures devised to prevent a breakdown of the system or one of its components." Preventive maintenance protects buildings, grounds, furniture and equipment in order to avoid expensive maintenance. Custodial staff often carries out preventive maintenance. Their performance of this task may be enhancing by on the-job training. Preventive maintenance has rarely practiced in schools most of which do not even have the custodial staff to render such services. Absence of any type of maintenance programme and school inspection schedule in schools also hinders the rendering of such maintenance services.

2.12.2. Periodic Maintenance

This is the type of work done at regular intervals-yearly or two-year intervals or more. It is most often done on contract basis, at predetermined times. It is the type of work associated with the servicing of office, laboratory, and other equipment in the school periodically. This type of maintenance also includes such work as painting and repair of leaking roofs, which has be scheduled to take place periodically as buildings continue to age.

2.12.3. Routine maintenance

This has carried out periodically as scheduled by the school managers. Facilities may be serviced monthly, quarterly or even annually depending on the agreed schedule. Manufacturers guide

provide information on the nature and maintenance intervals. School managers comply with these guides to avoid breakdown of the equipment.

2.12.4. Emergency Maintenance

This is very common in the management of school facilities in societies where maintenance culture is not well established. It takes place when a facility breaks down and urgent measures or steps had been taking to remedy the situation. In this regard, collective decision-making may not be possible because there may be limited time to bring together all the necessary individuals to make decisions. It is also expensive because due to lack of maintenance, the extent of damage may demand total replacement of the facility or high cost of repair. In some cases, the breakdown may cause injury or even death to staff and or students of the school. The resultant effect may be high insurance premium or prevent the use of the facility for teaching and learning until repair had been effect. School managers should proactively develop and implement facilities management plan for addressing facility needs.

2.13. Promoting School Plant Maintenance Culture

2.13.1. The Culture of a School

The school is a formal organization made up of teachers and other school staff, the head teacher, and students. They all form a group of people in constant interaction, on a daily basis. These interactions, which cover every aspect of school life, has usually based on existing acceptable standards of behavior, the values of the group members, and their beliefs and assumptions about school and other aspects of life. All these constitute the culture of the school, which is a major determinant of how its members behave in that school and, in many cases, elsewhere. The members of the school to ensure compliance with behavioral norms formulate rules and regulations. Acceptable standards of behavior has rewarded in one way or the other while unacceptable ones receive appropriate sanctions.

The school culture persists over time unless there is a reason to change some aspects of it; but even if there is any good reason to change any aspect of it, it is often a difficult task doing so. While it is difficult to specify from where or when the culture of a school started, it is less

difficult to identify what determines and sustains it. Under normal circumstance, culture develops and flourishes over a long period. About its origin, the culture of a particular school has safely be assumed to have started from the moment the school plant was put into use or occupied by the first set of school staff and students. A founding head teacher has much influence on the development of the culture of the school. The policies or guiding principles, rules and regulations, procedures, etc., established by the founding school head and his staff members, set the pace in the development of school culture. His pronouncements, leadership style, demonstrated concerns about certain aspects of school life, have no less impact on the school's culture. The symbols through which the school culture has expressed also play a great role in sustaining the culture of a school.

2.13.2. School Culture and School Plant Maintenance

The extent to which members of a school value and take care of the school plant is determined by their beliefs about the worth and significance of the school plant. Their general attitude towards the maintenance of the school plant, in turn, determines to some extent, the efficiency in the use, and effectiveness of the school plant in supporting the academic programme and satisfying the needs of the users including the members of the local community. In the same way that a school head influences the school culture, so also can he influence their attitudes towards the school plant and its maintenance and operation? His attitudes, pronouncements about the care for school plant and the promptitude, or otherwise, with which he pays attention to school plant maintenance issues, and his discussions and manner of involvement of staff and students on matters concerning the school plant, influence the attitudes, beliefs and values of his subordinates and the student body. Stories about true events and incidents in connection with the school plant also influence the attitudes and behavior towards the school plant. Stories about sanctions on students who damage school property or deface the wall of the school buildings, about the prompt action taken by the school head to repair damaged school buildings provide insight into the value placed on maintenance of the school. Icons and rituals are important not only for communicating but also for sustaining prevailing attitudes towards the maintenance of the school plant. Putting in writing, a brief statement of the school's philosophy about keeping the school neat and in functional form influences the behavior of school people and even visitors towards school property. The same impact has made by the use of rituals or routine ceremonies

by the school authority to appreciate the efforts of groups and individuals in maintaining the beauty and attractiveness of the school plant. When and if all these measures make the occupants of a school's buildings develop and internalize consistent and predictable attitudes and behavior towards the care of the school plant, school maintenance culture has said to be existent in the school. A school's maintenance culture can be either positive- portraying a consistently caring behavior by its members, or negative, portraying a non-caring attitude.

2.14. The Role of the School Administrator in Plant Management

Many school administrators of our public school rarely participate in the planning and procuring of certain school facilities. Much of this has done either by the Ministry of Education or by the community. The actual role of the school administrators with respect to plant management is maintenance, Onwurah (2004). Ntukiden in Adeboyeye (1999:235) gave credence to this view when he said *"the principal to a greater extent is responsible for the utilization of the school plant ... be it as it may, the principals is the one visibly seen to be in charge of both the utilization and maintenance of the school plant"*.

The school administrator determines the maintenance option applicable in his system. He has to delegate authority and supervise such delegated authority to ensure compliance. The main aim is to preserve and prolong the usefulness of the school facilities. He should prudently use the resources available to him to maintain the buildings, furniture, equipment and other items as much as possible in their original state, preventive maintenance option is the best for any school administrator provided he is provided with funds. A situation where most facilities and equipment in our schools look dilapidated may suggest administrative laxity. It could also suggest inadequate funding by the government or both.

It is the onus of everyone in the school to manage the school plant, but greater responsibility rests with the administrators who will get others to act. Thus Obi (2001) advised that school authorities should ensure adequate provisions of ancillary staff such as cleaners, porters, messengers, gatemen, security officers and carpenters to ensure a round the clock surveillance of the school and proper maintenance of regular services in the areas of compound clearing, trimming of flowers, washing of toilets etc. Good plant maintenance will go a long way in reducing some of the constraints in plant management.

CHAPTER THREE

RESEARCH DESIGN AND METHODOLOGY

This chapter describes the research design and methodology adopted in the study. It covers research design, area of the study, source of data, population of the study, sample and procedures, data collection instruments, data collection procedures, method of data analysis and ethical considerations.

3.1. Research Site

The study has carried out in Addis Ababa Administration, Bole sub city. Bole sub-city is one of the largest sub-cities among the ten sub-cities of Addis Ababa, which is located in the northeastern part of the city. Geographically, it shares the boundary with four sub cities of Addis. From the north Yeka, to the south Akaki-Kality, Nefas Silk Lafto to the southwest and Kirkos sub city to the west. Currently it will divide in to two-sub city (Bole Arabsa, and Bole sub-city) due to expansion of urbanization. Bole Sub-city has 14 woredas, 16 kg (kinder gardens), 20 primary and four first cycle secondary schools (grade 9 up to grade 10) as well as two preparatory (grade 11 up to grade 12) government schools.

The sample size of the study has been selected only three government secondary schools randomly. Therefore, the study assesses in one preparatory and two secondary schools i.e. Bole Secondary and Preparatory School, Doctor Haddis Alemayehu Secondary School and Lem Secondary School.

3.2. Research Design

Descriptive survey method was selected for this study and more preferable to use because it enable to gather data from a relatively large number of study subject with in short period of time and within a minimum cost. The survey attempts to examine the existence or occurrence of phenomenon or variable. It usually employed by collecting data on and describing in systematic manner the characteristic features or facts about a given population from a few people or items

considered representative of the entire group (Akuezuilo & Agu, 2002). This study was on finding out the state of the school plants in secondary schools of Bole sub-city.

3.3. Sources of Data

The data gathered from both primary and secondary sources. Primary data were from principals and teachers. At the same time, secondary data sources including secondary school standards and external school evaluation checklists. Moreover, relevant books, academic journals, proceedings, articles contributed by deferent authors, library and laboratory checklists internet based information which contains relevant information related to the subject under the study, policy documents, records and the like were thoroughly consulted.

3.4. Population of the Study

Bole sub city is one of the ten sub cities in Addis Ababa, which comprises two preparatory and 4 first cycle government secondary schools from such schools the researcher prefer only one preparatory and two first cycle secondary schools to be the study population based on their homogeneity. Therefore, schools incorporated, as study population has been - Dr. Haddis Almayehu secondary school, Lem secondary school and Bole secondary and preparatory school. The study also compresses 12 principals and vice principals and 80 secondary school teachers based on simple random sampling.

Table 1: Population of the Study

No	Types of respondents	Sample school	Total population	Sample size	%	Sampling technique
1	Teachers	Dr. Haddis Almayehu secondary school	50	15	30	Stratified Simple random sampling
		Lem secondary school	97	29	30	
		Bole preparatory and secondary school	121	36	30	
	Total		**268**	**80**	**30**	
2	Principals and vice principals of all schools		12	12	100	Available sampling technique
	Total		**280**	**92**	**100**	

3.5. Samples and Sampling Procedures

To ensure fair representation of the study population stratified random sampling used in selecting and distributing the three secondary schools. The population of the study comprises 12 Principals and 268 teachers (i.e. 30% among the sampled teachers are 80) in selected government secondary schools. There are altogether 92 populations were participated in research study in Bole Sub City secondary schools. Since each schools has 4 principals (one principal and three vice principals) then from three secondary schools 12 principals (100%) of them taken. Regarding the teachers sample size to make it manageable 30% of school staffs in each sample school was included (taken) as respondents. According to Gays (1992), a sample size of educational research should be at least 10% of the total population. In this study, the researcher found it appropriate to sample more than 10% of the population where the population categories were small.

Bailey (1978) expressed the opinion that studying the entire population in research gives more weight to the findings. However, a sample has chosen because time and cost did not allow for every member of target population to participate. A sample is a small portion of the population selected using systematic procedures as representative of that population. The sample has drawn from all the groups of the target population. Mugenda (1999) suggested that where time and resources allow, a researcher should take as big sample as possible. They emphasized that dangers of a small sample were its inability to reproduce the salient characteristics of the target population to an acceptable level.

3.6. Data Collection Instruments

A. Observation

Observation checklist is one of data gathering tool that helps the researcher as eyewitnesses to the situation. Observation has usually employed to collect data concerning specific activities in a natural setting at a specific given time. It is possible to obtain detailed information about the problem at the actual setting (Best and Kahn 2005). Similarly, Kumer (1996) suggests that observation is purposeful, systematic, selective way of collecting data by being immerse at the natural setting. Therefore, the researcher conducted observation once to gather information about

the availability of facilities like notice board, laboratories, libraries, first aid facilities, and ICT computers, staff rooms, staff launch and meeting hall, latrines based on sex placement both for staffs and pupils, in the secondary schools. The observational schedule has 32 items designed to identify the resources available in schools.

B. Questionnaire

Questionnaires are widely applicable in descriptive survey mainly when the sample size is large. Moreover, questionnaire helps respondents to write the functional information (Best and Kahn, 2005). For this reason, data have been collect through questionnaires based on basic questions of the study. To obtain information on the current status of school plant managements. Questionnaires have administered with the aim of gathering preliminary data from school principals and teachers. The item of questionnaire has closed ended.

Items designed to explore the nature and adequacy of physical facilities or resources, and the management of physical facilities (school plants), the questionnaire has the five point rating scale with a response mode of Strongly Agree, Agree, Neither agree nor disagree, Disagree; Strongly Disagree was used for this section of the instrument. The respondents have requested to indicate by ticking (√) in the appropriate boxes, the responses applicable to the items.

3.7. Data Collection Procedure

At the beginning the researcher contacted each school principals and aware them by explaining the purpose of the study to create rapport with principals. After gaining necessary consent and willingness, the current total population of the teaching staff has been, obtain. The researcher distributed the questionnaires, continuous follow up and then the collection of questionnaire has been carrying out with the support field assistants.

3.8. Method of Data Analysis and Interpretation

After data has been collect, the researcher checked the completeness of the questionnaires. It was analyzed using descriptive statistics; it has appropriately coded, scored and then keyed in the computer for analysis using Statistical Package for Social Sciences (SPSS). Data from the

principals and the teachers was analyzed carefully, remarks from participants taken and conclusions drawn, to show the nature and adequacy of physical facilities, the strategies adapted to enhance the maintenance of school plant and explore suggested strategies for proper management of physical facilities or resources. The analyzed data has presented in form of frequency tables, means, p- value and percentages. The researcher also analyzed the data that gathered form observation through number and percentile.

3.9. Ethical Considerations

The identity of all respondents and participants of the research are confidentiality to assure the respondents confidentiality that could not be recorded and pictured on video as well as none of them wrote their name. As a researcher, I used symbols and letters to substitute and cancel the individual identity. When I was distributing the questioner and collecting them, I try to explain my purpose of the research it is only for the partial fulfillment of MA Thesis.

CHAPTER FOUR

DATA PRESENTATION, ANALYSIS AND DISCUSSION

This chapter presents their research findings; analysis and discussion of the data obtained from the sample schools and has collected from principals and teachers in Bole Sub City Secondary Schools.

4.1. Demographic Characteristics of Study Participation

This section describes the demographic characteristics of the respondents in the study area. Such a description is important in providing a clear understanding of the respondents and institutions, the study results based on the objectives of the study. The demographic characteristics covered in this section are sex, age, service and educational qualification of the respondents.

A. Respondents based on Sex and Age

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 table shows the general characteristics sex and age of respondents involved in the study.

Table 2: Respondents by sex and age

Criteria		Number of Respondents				Total	
		Principals		Teachers			
		No	**%**	**No**	**%**	**No**	**%**
Sex	Male	11	91.7	63	78.8	74	80.4
	Female	1	8.3	17	21.2	18	19.6
	Total	**12**	**100**	**80**	**100**	**92**	**100**
Age	25 - 29 years	2	17	20	25	22	23.9
	30 - 39 years	8	67	48	60	56	60.9
	40 - 49years	2	17	9	11.3	11	12
	50 years and above	0	0	3	3.75	3	3.26
	Total	**12**	**100**	**80**	**100**	**92**	**100**

Tables 2 reveal the characteristics of respondents by sex and age. As it has displayed in the table, among the principals, 11(91.7%) were males and one (8.3%) were females. Similarly, 63(78.8%)

of the teachers were males and only 17(21.2%) of them were females. This shows that very few female principals and teachers in the sample secondary schools. This indicates that the majority of the teachers teaching in the selected secondary schools of Bole sub- city are males .The number of female teachers is also in encouraging state. Moreover, the above data indicates that females, let alone occupy managerial positions, their participation at school level is reasonably significant comparing to the previous trend. Nevertheless, the proportion of female teachers and school leaders in the sample secondary school is significantly less to that of male counterparts. This could be an indicator of less participation rate of female teaches as well as principals at high school. Gender inequality observed in the sample secondary school and attention given to females in all aspects of the activities as long as the role of women is are concerned and their contribution to the overall activities of education. Besides, this may possibly reveal that the number of females was very low. Hence, it needs effort to qualify and empower them in every aspect.

Concerning respondents' age, two (17%) of the participants' age of principals' lies within the range of 25 and 29. 8(67%) and 2(17%) of the principals' age were found between age of 30 up to 39 and 40 up to 49 ages respectively while 20 (25%) of teachers and 48 (60 %) of school teachers were in the age of 25 – 29 years and 30 – 39 years respectively. Besides, between the age of 40 – 49 years o teachers respond nine (11.3%). three (3.75%) of teachers responds above the age of 50. Therefore, majority of the respondents' 56(60.9%) both principals and teachers ages were found between 30 and 39. This means that the respondents were so young they could work for lots of years.

B. Respondents based on service and qualification

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 table shows the general characteristics sex and age of respondents involved in the study.

Table 3: Respondents by service and qualification

Criteria		Number of Respondents				Total	
		Principals		Teachers			
		No	**%**	**No**	**%**	**No**	**%**
Services	1 – 5 years			9	15	9	9.78
	6 – 10 years	2	12.5	31	41	33	35.9
	11 – 15 years	6	37.5	25	25	31	33.7
	16 and above years	4	50	15	19	19	20.7
	Total	12	100	80	100	92	100
Qualifications	Diploma						
	Degree	8	66.7	68	85	76	82.6
	MA/MASC	4	33.3	12	15	16	17.4
	Total	12	100	80	100	92	100

Table 3 reveals the characteristics of respondents by services and qualification. As shown in the table, 2(12.5%), 6(37.5%) and 4(50%) of principals respondent services were lies between 6 – 10 years, 11 – 15 years and above 16 years respectively. Similarly, teachers' respondents' services were 9(15%) lies between 1 – 5 years. 31(41%), 25(25%) and 15(19%) of teachers services were found between 6 – 10 years, 11 – 15 years and above 16 years respectively. Majority of the respondents of principals and teachers were 33(35.9%), and 31(33.7%) of the total number of participants' services lie between 6 – 10 and 11 – 15 years respectively. This implies that the participants were acquiring minimum services. Concerning the qualification of the respondents among principals 66.7% of the respondents were first-degree holders and 33.3% of the respondents were second-degree holders. Among the respondents, 85% were males and 15% were females of teachers. From the result one can realize that significant number of teachers has fulfilled the minimum requirement of qualification needed at secondary school level, it requires second degree. The low level of teachers and school leaders in academic qualification yields poor and unscientific management practices specifically from school leaders' side and ineffective teaching-learning process from teaching personnel's.

4.2. Availability of Material Resources in Secondary Schools

The first research objective sought to investigate the availability of material resources in sampled secondary schools. The researcher gathered data on the availability of physical facilities in the sampled schools. The researcher collected data by preparing observation checklist.

The availability of physical plants in three sampled secondary schools has assessed through observation and the data was frequency counts of available in all (three of three, 100%), available in many (two of three, 66.7%), available in very few (one of three, 33.3%) and not available (none of three) has made in order to answer the question posed earlier.

To answer the availability of physical facilities, the researchers observed that in all sampled secondary schools administrative offices, biology laboratory, physics laboratory, chemistry laboratory, classrooms, library, ICT lab, cafeteria, storerooms and staff rooms are available in all (three of three, 100%) while physical facilities like pedagogical centers were available in many schools(two of three, 66.7%). Nevertheless, physical facilities like clinics and students dining hall were available in few schools (one of three, 33.3%). Audiovisual rooms and rooms/classes for special (handicapped, gifted/talented) were not available (none of three).

Material facilities in sampled secondary schools; chalk board/black board, instructional facilities, laboratory tables and chairs, library chairs, tables and reference books are available in all(three of three, 100%) sampled schools. Plasma, students' text books, photocopying machines, tables and chairs for students, shelves, and health and physical education facilities were also available in all(three of three, 100%) sampled secondary schools however, material facilities /equipment's in laboratory like chemicals, manuals, and tables and chairs for teachers in the classroom were available in very few (one of three, 33.3%).

School environments facilities in all sampled schools, like bulletin board, school fences, school garden, water and electric supply, and teacher toilets were available but students toilet were available inadequate.

4.3. Adequacy of Physical Facilities

The study investigated several factors that indicate the nature and adequacy of physical facilities in schools. Some of these factors are classrooms, desks and chairs, labs, library, latrines dining halls, departmental offices, recreational facilities, water and power.

4.3.1. Classroom Facilities in Secondary Schools

The researcher gathered data on the status classroom facilities in the sampled schools by observation schedule and questionnaires to the principals and students. The findings were presented in table 5.

Table 4: Desks and Chairs Facility

s/no	Adequacy of physical facilities	Respondents	N & %	Respondents response %					Mean	Standard Deviation	over all Mean	P-value
				5	**4**	**3**	**2**	**1**	**X**	**SD**	**= X**	**P-v**
1	The number of tables and chairs in the class room for teachers is adequate	P = 12	N		1		11				2.41	0.07
			%		8.33		91.3	0	2.5	0.89		
		T = 80	N		11		52	17				
			%		13.8		64.8	21	2.32	0.96		
2	The number of desks and chairs in the classroom for students is adequate	P = 12	N	9	3						4.585	0.07
			%	75	25				4.67	0.65		
		T = 80	N	50	30							
			%	62.5	37.5				4.5	0.73		

Key: T = Teachers, P = Principals, X= mean, SD=standard deviation, P-value at α=0.05 level and degree of freedom=1.05 Scales: - ≤ 1.49 = strongly disagree, 1.5 – 2.49 =Disagree, 2.5 – 3.49 = Undecided, 3.5 – 4.49 = Agree, ≥ 4.5 = strongly agree.

As can be observed in item one of table 4, respondents has asked to indicate their agreement on the extent to which the number of tables and chairs in the classroom for teachers is adequate. Eleven (13.8%) of teachers and one (8.33%) principal respondents agreed on adequacy while 52(64.8%) teacher and 11 (91.3%) principals have disagree their adequacy. only 17(21%) of teachers strongly disagree the adequacy of teachers facility. Accordingly, teachers with(X=2.32, SD=0.96) and principals with the (X=2.5, SD=0.89) agreed that both response reflect the ratio of available tables and chairs for teachers in the classroom were not adequate. The overall X=2.41 indicating the majority of respondents disagree the issue. According to MOE schools' standards

(2001e.c), tables and chairs should be available in each class. However, the majority of the respondents have been disagreed with the issues. In addition, the data gathered through observation has also confirmed that in all sampled schools and in each class, there was inadequacy of chairs and tables for teachers. The significance level (p=0.07) is greater than 0.05, this indicates that there is no significant difference between the opinions of teachers and principals regarding the adequacy of teacher's chairs and desks in the classroom. This indicates that most schools did not focus in the provision of teacher's desks and chairs in the classroom. However, according to schools standards of Addis Ababa (2001), there should be provision of teacher's tables and chairs in each class. Adequacy in classroom furniture means that the teachers are comfortable and can better check student's exercise books, notes books and recoding of students day-to-day assessment.

When asked about the adequacy of chairs and desks in classrooms for students in item 2 of above table 4 number of desks and chairs in the classroom is adequate. 50 (62.5%) of teacher respondents have agreed on adequacy of desks and chairs in the staffroom were strongly agreed, 21(26.3%) of teacher respondents have also agreed the adequacy and 8(10%) not decide on the issue while 1(1.25%) of teachers disagreed on the same table item. whereas, 9(75%) Principal respondents strongly agreed on adequacy of desks and chairs in the classroom were strongly agreed, three (25%) of principals also agreed adequacy and 30 (37.3%) principals respondents have agreed their adequacy. Consequently, teachers and principals expressed their agreement (X= 4.5, SD=0.73) and (X=4.67, SD=0.65) respectively. This means that, the schools has adequacy of desks and chairs in the classrooms. These results indicated that the schools had given high priority to the comfort of learners, which is essential for good academic performance. The research by Cash (1993) on effect of physical facilities on learning found out that the condition of classroom furniture correlated with students' achievement at a significant level when controlling for social economic status of students. The overall X=4.585 shows the agreement of the total respondents with the point. According to MOE, school standards there are available of 20 desks in a class and two students has seat in each desk as a ratio (one desk for two students). In observation, the researcher also has seen that adequacy of students' desk in a classroom. Therefore, based on the overall score value, it has been concluding there were adequacy of desks and chairs in sampled secondary schools. The significance level (p=0.07) is

greater than 0.05, this indicates that there is no significant difference between the opinions of teachers and principals regarding the adequacy of chairs and desks in the classroom.

4.3.2. Physical Facilities in Library and Laboratory in Secondary Schools

The researcher gathered data on the status physical facilities in library and laboratory in the sampled schools by observation schedule and questionnaires to the principals and students. The findings were presented in table 6.

Table 5: physical facilities in library and laboratory

s/no	Adequacy of physical facilities	Respondents	N & %	Respondents response %					Mean	Standard Deviation	over all Mean	P-value
				5	**4**	**3**	**2**	**1**	**X**	**SD**	**= X**	**P-v**
1	The resources in the library are adequate for the number of students in the school	P = 12	N	3	7	2			4.08	0.67	4.04	0.3
			%	25	58.3	17	0	0				
		T = 80	N	29	28	17	6		4	0.94		
			%	36.3	35	21	7.5	0				
2	The equipment in laboratory (physics, chemistry and biology) are adequate in the school	P = 12	N		3		9		2.5	0.90	2.45	0.03
			%		25		75					
		T = 80	N		27		53		2.4	0.93		
			%		33.8		66					

Key: T = Teachers, P = Principals, X= mean, SD=standard deviation, P-value at α=0.05 level and degree of freedom=1.05 Scales: - $\leq$ 1.49 = strongly disagree, 1.5 – 2.49 =Disagree, 2.5 – 3.49 = Undecided, 3.5 – 4.49 = Agree, $\geq$ 4.5 = strongly agree.

As it has revealed in item three of Table 5, respondents has asked to indicate their agreement on extent to which adequacy of resources in library. 29(36.3%) teachers and 3(25%) school principals strongly agreed on the adequacy of resources in library respectively, 28(35%) of teacher, respondents have also agreed the adequacy and seven (58.3%) Principal respondents decide on the adequacy, both 17(21%) of teachers and two (17%) of principals not decided disagreed on the same table item. whereas, nine (75%) strongly agreed on adequacy of desks and

chairs in the classroom were strongly agreed, two (16.7%) of principals respondents have not decided on the issue. While six (7.5%) of teachers only disagree their adequacy. The rating of teachers and principals with (X=4.0, SD=0.94) and(X=4.08, SD=0.67) respectively shows their agreement over the issue that the principals and teachers who agreed on the resources in library were adequate for students. This indicated that most schools had invested money in development of their libraries. A textbook that has directly related to the syllabus content has usually issued to the students and only supplementary reading materials and reference books have been provide for in most school libraries. This probably also indicates that schools minimizing lacked a variety of textbooks and other reading materials, perhaps schools purchased recommended course books only which were kept in the custody of the students. Pearls (2000) states that although teachers are required to deliver formal teaching in a classroom, much of the day to day teaching goes on outside the classroom in the course of interaction between learners and the environment. The overall X=4.04 shows the agreement of the total respondents with the point. Therefore, based on the overall score value, it has been conclude there were adequacies of library resources in sampled secondary schools. A well-equipped library can help to enhance teaching, facilitate learning, and thus make a shift to a learner-centered approach. The significance level (p=0.3) is greater than 0.05, this indicates that there is no significant difference between the opinions of teachers and principals regarding the adequacy of resource in library.

On adequacy on equipment in the laboratory (physics, chemistry and biology) in item four tables 5 revealed that both principals and teachers who agreed were 3(25%) and 25(31.8%) respectively. 9(75%) of principals and 55(68.2%) of teachers were disagreeing their adequacies. Accordingly, the rating of principals and teachers X= 2.05, SD=0.90 and X=2.4, SD=0.93 respectively shows that the issue that the inadequate of the resources. The overall X=2.45 results in the sampled schools indicated that most schools did not allocate enough resources to equip their laboratories. This was probably because laboratory equipment facilities are expensive and are required in large quantities. Laboratory rooms provide students with an opportunity to see and make observation of what they have taught (Oyeniran, 2003). Propst (1972) adds that learning takes place best through discovery exploration and interaction with the internal external environment. This implies that in such schools science lessons were more theoretical than practical. This concurs with the findings of Aminu (1980), Abijo (1981), Jegede (1992) and Ivowi (1997) which indicate that science teachers continued using the lecture method despite

recommended guided discovery method. On the same vein, Farombi (1998) argued the saying that seeing is believing as the effect of using laboratories in teaching and learning of sciences and other science related disciplines as students tend to understand and recall what they see than what they hear or were told. The laboratory is essential to the teaching of sciences and the success of any science course is much dependent on the laboratory provision made for it. Affirming this Ogunniyi (1993) said that there is a consensus among science educators that the laboratory occupies a central position in science instruction the reason why their availability and utilization cannot be overemphasized. The significance level (p=0.03) is less than 0.05, this indicates that there is no significant difference between the opinions of teachers and principals regarding the adequacy of equipment's in laboratories in the school.

4.3.3. Facilities of latrine, supply of water and electricity

The researcher gathered data on the status facilities of latrine, supply of water and electricity in the sampled schools by observation schedule and questionnaires to the principals and students. The findings were presented in table 6.

Table 6: Latrine, Water Supply and Electricity

s/no	Adequacy of physical facilities	Respondents	N & %	Respondents response %					Mean	Standard Deviation	over all Mean	P-value
				5	4	3	2	1	X	SD	X	P-v
1	The number of latrines/toilets in the school are adequate for teachers and students in the school	P = 12	N		1	4	7		2.5	0.67	2.41	0.2
			%		8.33	33	58	0				
		T = 80	N		11	21	31	17	2.32	0.969		
			%		13.8	26	39	21				
2	The water supply to the school is adequate	P = 12	N	1	8	2	1		3.75	0.758	3.905	0.001
			%	8.33	66.7	17	8.3	0				
		T = 80	N	21	47	8	4		4.06	0.75		
			%	26.3	58.8	10	5	0				
3	The supply of electric power to the school is adequate	P = 12	N	4	7	1			4.25	0.62	4.28	0.03
			%	33.3	58.3	8.3	0	0				
		T = 80	N	30	45	5			4.31	0.59		
			%	37.5	56.3	6.3	0	0				

Key: T = Teachers, P = Principals, X= mean, SD=standard deviation, P-value at α=0.05 level and degree of freedom=1.05 Scales: - $\leq$ 1.49 = strongly disagree, 1.5 – 2.49 =Disagree, 2.5 – 3.49 = Undecided, 3.5 – 4.49 = Agree, $\geq$ 4.5 = strongly agree.

Concerning item 4 of table 6, the study investigated the adequacy number of latrines/toilets for students in the schools. Both teachers and principals have not strongly agreed on adequacy students' latrines. 11(13.8%) of teachers and one (8.33%) principal respondents agreed on adequacy while21 (26%) of teacher and four (33%) of principal respondents have not decided on the issue. 31(38%) teacher and seven (58.3%) principals have disagree their adequacy .only 17(21%) of teachers strongly disagree the adequacy of students toilet. Accordingly, teachers with(X=2.32, SD=0.96) and principals with the (X=2.5, SD=0.67) agreed that both response reflect the ratio of available toilet hall and the number of students were not adequate. The overall X=2.41 indicating the majority of respondents disagree the issue. In addition, the data gathered through observation has confirmed that in each school there was inadequacy of toilets. The availability of toilet hall and number of students' ratio were below schools standards. According to the MOE schools standard ration were 1:22(one hall for 22 students) but in sampled schools toilets hall is less than the standards i.e.1:71 as average. These results indicated that the schools did not prioritize issues that seemed not to have been direct related to tuition. Toilet facilities more or less address student welfare and therefore their adequacy were sometimes over looked and expansion and renovation of these facilities has somehow neglected. According to Stoner, Freeman and Gilbert (1996) there exists a close relationship between the physical environment and academic performance of students. Nwanu (1978) and Ogunsaju (1980) observed that the quality of education that students receive bears direct relevance to the availability or lack of physical facilities including toilet facilities. This implies that the school toilet facilities are crucial aspects of students learning environment. They not only enable pupils to have access of facilities for good health and hygiene but also help students to understand the ways of managing was waste and water resources in a scientific and responsible manner (Drangert, 2010:1). Toilets are important. Everybody needs to use them. Charles C. Wilson, M.D (1964: 253 - 255) discusses as toilet in school is an important facility that makes students to feel schools as their home especially to attract girls' education and to reduce dropouts of girls. The significance level (p=0.3) is greater than 0.05, this indicates that there is no significance difference between the opinions of teachers and principals regarding the adequacy of latrine/toilets in the school.

The data in item 5 of table 6, revealed that the adequacy of water supply in secondary schools. In the above table shows that 21(26.3%) of teacher and one (8.33%) of principal respondents strongly agreed that the adequacy of water in the school. 47(58.8%) and 8(66.7%) of teachers

and principals respectively agreed their adequacy while 8(10%) of teacher and 2(17%) principal respondents have not decided the issues. Finally, 4 (5%) teacher and one (8.33%) of principals' respondents has disagree their adequacy. The rating of teachers and principals with (X=4.06, SD=0.75) and(X=3.75, SD=0.75) respectively shows their agreement over the issue that the principals and teachers who agreed on the supply of water were adequate in the school. The overall X=3.905 shows the agreement of the total respondents with the point. Therefore, based on the overall score value, it has concluded there were adequacies of water in sampled secondary schools. Provision of safe water and appropriate sanitation facilities are the first requirements in the creation a healthy learning environment. Supporting this, Miliband in ERIC (2007:1) says, "if you get the toilet right, you get the teaching right." No-question that water means health, better development and an acceptable quality of life. A school that provides safe drinking water implies that it has contributed to the physical and intellectual development of its students just much as a dedicated teacher who imparts the basic knowledge to students (Solsona and Fuertes, 2003: 19). The significance level (p=0.01) is less than 0.05, this indicates that there is no significant difference between the opinions of teachers and principals regarding the adequacy of water supply in the school.

The study investigated the adequacy number of power supply to schools. The responses for the teachers and principal respectively in table 6 item 6 were, 30(37.5%) of teachers and four (33.3%) of principals were strongly agreed, 45(56.3%) and 7(58.3%) of teachers and principals respectively were agreed the adequacy of electric power while 5(6.3%) and 1 (8.3%) of the respondents have not decided the issues. The rating of teachers and principals with (X=4.31, SD=0.58) and(X=4.25, SD=0.62) respectively shows their agreement over the issue that the principals and teachers who agreed on the supply of power were adequate in the school. The overall X=4.28 shows the agreement of the total respondents with the point. Therefore, based on the overall score value, it has concluded there were adequacies of power supply in sampled secondary schools. The significance level (p=0.03) is less than 0.05, this indicates that there is no significant difference between the opinions of teachers and principals regarding the adequacy of power supply in the school.

4.3.4. Playground and Recreational Facilities in Secondary Schools

The researcher gathered data on the status of playground and recreational facilities in the sampled schools by observation schedule and questionnaires to the principals and students. The findings were presented in table 7.

Table 7: Playground and Recreational Facilities

s/no	Adequacy of physical facilities	Respondents	N & %	Respondents response %					Mean	Standard Deviation	over all Mean	P-value
				5	**4**	**3**	**2**	**1**	**X**	**SD**	**= X**	**P-v**
1	The size of the playground is adequate for the number of students in the school	P = 12	N	5	6	1			4.33	0.65	4.235	0.02
			%	41.7	50	8.3	0	0				
		T = 80	N	14	64	1	1		4.14	0.67		
			%	17.5	80	1.3	1.3	0				
2	Recreational facilities e.g. TVs, Videos, Radios are adequate	P = 12	N	4	8				4	0.61	4.155	0.02
			%	33.3	66.7							
		T = 80	N	31	44	4	1		4.31	0.63		
			%	38.8	55	5	1.3	0				

Key: T = Teachers, P = Principals, X= mean, SD=standard deviation, P-value at α=0.05 level and degree of freedom=1.05 Scales: - $\leq$ 1.49 = strongly disagree, 1.5 – 2.49 =Disagree, 2.5 – 3.49 = Undecided, 3.5 – 4.49 = Agree, $\geq$ 4.5 = strongly agree.

The data in item 8 of table 7, revealed that 14(17.5%) of teacher and five (41.7) of principal respondents strongly agreed that the adequacy of play ground in the school. 64(80%) and 6(50%) of teachers and principals agreed their adequacy respectively while 1(1.3%) of teacher and 1(8.3%) principal respondents have not decided the issues. Finally one (1.25%) of teacher respondents only disagree their adequacy. The rating of teachers and principals with (X=4.14, SD=0.67) and(X=4.33, SD=0.65) respectively shows their agreement over the issue that the principals and teachers who agreed on the size of playground were adequate for students. The overall X=4.235 shows the agreement of the total respondents with the point. Therefore, based on the overall score value, it can be concluded there were adequacy and proportional of play

ground with number of students in sampled secondary schools. The significance level (p=0.02) is less than 0.05, this indicates that there is no significant difference between the opinions of teachers and principals regarding the adequacy of playgrounds for students.

As can be observed in item 9 of table 7, respondents has asked to indicate their agreement on the extent to which recreational facilities like TV, Video, and Radio are adequate. 31(38.8%) of teacher respondents have agreed on adequacy of recreational facilities were strongly agreed, 44(55%) of teacher respondents have also agreed the adequacy and 4(5%) not decide on the issue while 1(1.25%) of teachers disagreed on the same table item. whereas, 4(33.3%) Principal respondents strongly agreed on adequacy of recreational facilities in the school were strongly agreed, 8(%) of principals also agreed adequacy. Consequently, teachers and principals expressed their agreement (X= 4.31, SD=0.63) and (X=4.0, SD=0.61) respectively. This means that, the schools understudy has adequacy of recreational facilities in sampled secondary schools. This indicates that most schools have invested in provision of recreational facilities like DSTV, Satellite Dishes etc... Adequacy leads the teachers are comfortable and can better prepare for lessons. The overall X=4.15 shows the agreement of the total respondents with the point. Therefore, Facilities are of everything used directly or indirectly for the benefit of education. A school without facilities may not be able to achieve the stated goals and objectives of the system. When facilities are available and skillfully utilized, they influence learning and making it more meaningful. Facilities in education are very vital because they aid teaching and learning based on the overall score value, it has concluded there were adequacy of recreational facilities in sampled secondary schools. The significance level (p=0.02) is less than 0.05, this indicates that there is no significant difference between the opinions of teachers and principals regarding the adequacy of recreational facilities.

4.3.5. Physical facilities on Computers, Storage, Instructional materials and Internet services in Secondary Schools

The researcher gathered data on the status of physical facilities on computers, storage, instructional materials and internet services in the secondary schools by observation schedule and questionnaires to the principals and students. The findings were presented in table 8.

Table 8: physical facilities on computers, storage, instructional materials and internet services

s/no	Adequacy of physical facilities	Respondents	N & %	Respondents response %					Mean	Standard Deviation	over all Mean	P-value
				5	4	3	2	1	X	SD	= X	P-v
1	The numbers of computers in the school are adequate for the number of students and teachers in the school.	P = 12	N	2	8	2			4	0.60	4.17	0.03
			%	16.7	66.7	17						
		T = 80	N	31	45	4			4.34	0.57		
			%	38.8	56.3	5						
2	Books and equipment storage facilities in the school are adequate	P = 12	N	5	7				4.42	0.51	4.37	0.12
			%	41.7	58.3							
		T = 80	N	32	43	4	1		4.32	0.63		
			%	40	53.8	5	1.3					
3	Teaching resources /instructional materials/ such as dusters, chalk, models, charts, are adequate	P = 12	%	62.5	26.3				4.42	0.51	4.39	0.1
			N	5	7							
		T = 80	%	41.7	58.3				4.36	0.60		
			N	33	44	2	1					
4	Internet service in the school is adequate for students and teachers.	P = 12	N			6	4	2	2.33	0.78	2.24	0.02
			%			50	33	17				
		T = 80	N		3	23	37	17	2.15	0.79		
			%		3.75	29	46	21				

Key: T = Teachers, P = Principals, X= mean, SD=standard deviation, P-value at α=0.05 level and degree of freedom=1.05 Scales: - ≤ 1.49 = strongly disagree, 1.5 – 2.49 =Disagree, 2.5 – 3.49 = Undecided, 3.5 – 4.49 = Agree, ≥ 4.5 = strongly agree.

When asked about the adequacy of computers in schools in item one of above table 9, 31(38.8%) of teacher respondents on adequacy of computers were strongly agreed, 45(56%) of teacher respondents also agreed the adequacy and 4(5%) not decide on the issue. whereas, 2(16.7%) Principal respondents on adequacy of computers were strongly agreed, eight (66.7%) of principals also agreed adequacy while two (17%) principals respondents have not decided. Consequently, teachers and principals expressed their agreement (X= 4.34, SD=0.57) and (X=4.0, SD=0.60) respectively. The schools has adequacy of computers in sampled secondary schools this means that, teachers and students uses the resources effectively and helps to broaden students' knowledge; increase their level of understanding as well as stimulate and motivate learners. Computers are important instructional aids in the teaching/learning process.

Appropriate use of instructional aides helps keep learners interested and improves academic performance. According to (Nicholls, 2000; Raw, 2003) exclusively oral teaching cannot be the key to successful pedagogy. To make the teaching learning process interesting the teacher has to use the computers as instruction materials. According to Cronbac(1989), the usefulness of instructional materials in the teaching learning process as; facilitate learning of abstract concepts and ideas, keep the learners busy and active thus increasing their participation in the lesson; save teachers energy of talking too much. Moreover, illustrates the concepts clearer and better than the teachers words only; helps overcome the limitations of the classroom by making the inaccessible accessible; helps to broaden students' knowledge; increase their level of understanding as well as discourage rote learning and helps to stimulate and motivate learners. The significance level (p=0.03) is less than 0.05, this indicates that there is no significant difference between the opinions of teachers and principals regarding the adequacy of computers in the school.

As it revealed in item two of table 8, respondents has asked to indicate their agreement on extent to which books and equipment storage facilities in the school are adequate. 32(40%) teachers and 5(41.7%) school principals strongly agreed on the adequacy of storage facilities respectively, 43(53.8%) of teachers and seven (58.3%) of Principal respondents decide on the adequacy, but four (5%) of teachers not decided and 1(1.25%) of teachers responded disagreed the adequacy of storage facilities. The rating of teachers and principals with (X=4.32, SD=0.63) and(X=4.42, SD=0.51) respectively shows their agreement over the issue that the principals and teachers who agreed on storage facilities were adequate in the school. The overall X=4.37 shows the agreement of the total respondents with the point. Therefore, based on the overall score value, it has concluded that there was adequacy of storage facilities in sampled secondary schools. This has probably brought about development of funds necessary for construction and the challenge of having trained personnel to run the stores, on the other hand. Books has normally issued to the learners and collected at the end of the year; consequently, putting up of bookstores has given a priority in most schools. The significance level (p=0.1) is greater than 0.05, this indicates that there is no significant difference between the opinions of teachers and principals regarding the adequacy of storage facilities in the school.

As it has revealed in item three of table 8, respondents has asked to indicate their agreement on extent to which teaching resources (instructional materials) such as duster, chalk, models, and charts in the school are adequate. 33(41.3%) teachers and 5(41.7%) school principals strongly agreed on the adequacy of teaching facilities respectively, 44(45%) of teachers and 7(58.3%) of Principal respondents decide on the adequacy, but 2(2.5%) of teachers respondents not decided and 1(1.25%) of teachers responded disagreed the adequacy of teaching resources. The rating scale of teachers and principals with (X=4.36, SD=0.60) and(X=4.42, SD=0.51) respectively shows their agreement over the issue that the principals and teachers who agreed on teaching resource facilities were adequate in the school. The overall X=4.39 shows the agreement of the total respondents with the point. Therefore, based on the overall score value, it can be concluded that there were adequacy of teaching resources such as duster, chalk, models, charts facilities in sampled secondary schools. Grant (1978) asserts that teaching and learning cannot be effective without adequate and relevant use of instructional materials. Schramn (1977) referred to instructional materials as basic channel of communication (of ideas and concepts) in the classroom for bringing about effective teaching and learning. According to Abimbade (1997) instructional resources in teaching and learning make students to learn more and retain better what they has been taught and that it promotes and sustains students‟ interest. It also allows the learners to discover themselves and their abilities and consequently provides them with an opportunity to realize their full potential. A result the school has gives great priority for providing teaching resources. The significance level (p=0.08) is greater than 0.05, this indicates that there is no significance difference between the opinions of teachers and principals regarding the adequacy of instructional materials.

The data in item four of table 8, revealed that 37(46.3%) of teacher and four (33%.3) of principal respondents disagreed that the adequacy of internet in the school. 17(21%) and 2(17%) of teachers and principals strongly disagreed their adequacy respectively while 26(32.8%) of teacher and 6(50%) principal respondents have not decided the issues. The rating of teachers and principals with (X=2.15, SD=0.79) and(X=2.33, SD=0.78) respectively shows their agreement over the issue that the principals and teachers who agreed on the internet services were not adequate for teachers and students in sampled secondary schools. The overall X=2.24 shows the agreement of the total respondents with the point. Therefore, based on the overall score value, it can be concluded there were adequacy and proportional of play ground with number of students

in sampled secondary schools. This probably due to the responsible persons did not give any attention for the failure of the system, i.e. the Ethiopian telecommunication corporation did not take any action when there is a failure in a system. Moreover, education bureau and bole sub city's education offices the exiting internet services did not evaluate the system and takes any measures to fulfill the system. The significance level (p=0.02) is less than 0.05, this indicates that there is no significant difference between the opinions of teachers and principals regarding the adequacy of internet services in the school.

4.3.6. Physical facilities on printing and photocopying and offices in Secondary Schools

The researcher gathered data on the status of physical facilities on printing and photocopying machines and offices for departments' in the secondary schools by observation schedule and questionnaires to the principals and students. The findings were presented in table.

Table 9: Physical Facilities on Printing and Photocopying and Offices

s/no	Adequacy of physical facilities	Respondents	N & %	Respondents response %					Mean	Standard Deviation	over all Mean	P-value
				5	**4**	**3**	**2**	**1**	**X**	**SD**	**= X**	**P-v**
1	Printing and photocopying machines in the schools are adequate.	**P = 12**	N	6	6				4.5	0.52	4.405	0.2
			%	50	50	0	0	0				
		T = 80	N	33	37		6		4.31	0.82		
			%	41.3	46.3	0	7.5	0				
			%	41.3	46.3	0	7.5	0				
2	The number of offices allocated are adequate for the departments in the school	**P = 12**	N		2	3	6	1	2.5	0.90	2.45	0.03
			%		16.7	25	50	8.3				
		T = 80	N		15	12	43	10	2.4	0.93		
			%		18.8	15	54	13				

Key: T = Teachers, P = Principals, X= mean, SD=standard deviation, P-value at α=0.05 level and degree of freedom=1.05 Scales: - ≤ 1.49 = strongly disagree, 1.5 – 2.49 =Disagree, 2.5 – 3.49 = Undecided, 3.5 – 4.49 = Agree, ≥ 4.5 = strongly agree.

Concerning item 1 of table 9, the study investigated the adequacy of printing and photocopying machines in the school are adequate. 33(41.3%) of teachers and six (50%) of principals were strongly agreed on adequacy of printing and photocopying machines. In addition, 47(58.7%) of teachers and six (50%) of principals were response were also agreed adequacy. The rating of

teachers and principals with (X=4.3, SD=0.82) and(X= 4.5, SD= 0.5) respectively shows their agreement over the issue that the principals and teachers who strongly agreed on the adequacy of printing and photocopying machines in the schools. The overall X= 4. 4 indicating the majority of respondents strongly agree the issue. The significance level (p=0.2) is less than 0.05, this indicates that there is no significant difference between the opinions of teachers and principals regarding the adequacy of printing and photocopying machines in the school.

In item 2 of table 9, the data has revealed that 15 (18.8%) teachers and 2 (16.7%) principals agreed on adequacy of offices for departments. While 12(15%) teacher and 3(25%) of principals respondents has not decided the issue. However, 43(53.8%) of teacher and six (50%) principal respondents disagree the adequacy and 10(13%) of teachers and 1(8.3%) of school principals strongly disagree the adequacy of the number of department offices. Accordingly, the rating of teachers with the X=2.4, SD=0.93, X=2.5, SD=0.90 show the issue that the in adequate of the resources. The overall X=2.45 shows the majority of respondents the same with the issue. This results teacher has not adequate rooms (offices) for lesson plan preparation. The significance level (p=0.03) is less than 0.05, this indicates that there is no significance difference between the opinions of teachers and principals regarding the adequacy of offices for departments in the school.

4.4. Management of the School Physical Plants (Resources)

4.4.1. Method of Maintaining the Resources `

The study investigated ways of maintaining the resources in schools. They served with statements on agreed and disagreed. The statements were to identify way for proper management of school plants in schools. According to Fenker (2004) facilities management is a process that ensures that buildings and other technical systems support the operations of an organization. Therefore, School facilities management is the application of scientific methods in the planning, organizing, decision-making, co-ordination and controlling of the physical environment of learning for the actualization of the educational goals and objectives. This involves among other things, collective decision making in relation to selection of site for establishment of new schools, design and construction of new school plants including grounds, renovation and modernization of old plants, provision of equipment for academic and non-academic activities,

maintenance of all facilities and review of management practices and processes. Their responses in percentage has provided below in the table.

Table 10: Method of Maintaining the Resources

s/no	Items	Respondents		Respondents response %			
				Agree	%	Disagreed	%
1	Monitoring	P = 12	100%	12	100		0
		T = 80	100%	80	100		0
2	Prompt maintenance	P = 12	100%	10	83.3	2	16.7
		T = 80	100%	76	95	4	5
3	Repair or Refurbishing existing infrastructures	P = 12	100%	8	66.7	4	33.3
		T = 80	100%	68	85	12	15
4	Storage	P = 12	100%	11	91.7	1	8.33
		T = 80	100%	66	82.5	14	17.5
5	Provision for replacement	P = 12	100%	7	58.3	5	41.7
		T = 80	100%	73	91.3	7	8.75

Concerning item 1 of table 10, the study investigated ways of maintaining the resources in the school. All principals and teachers 100% have agreed on ways of managing the physical as well as material resources through proper monitoring of the material resources were necessary. In item two, 83.3% of principals and 95% of teachers agreed to prompt maintenance of the material resources. In addition, 66.7% and 85% of principals and teachers respectively have agreed that repair and refurbishing of infrastructure needed in the management of material resources. 91.7% of principals and 82.5% of teachers' respondents agreed that storage of material resource and finally, 58.3% and 91.3% of principals and teachers agreed provision of replacement are ways of maintaining the resources.

4.4.2. Proper Management Strategies of the School Plants

The study sought the teachers and principals opinion for proper management of school plant of school plants in sampled secondary schools. They were served with statements on a scale of 1-5, where 1 represented strongly disagrees, 2 disagree, 3 undecided, 4 agree and 5 strongly agree.

The statements were to identify suggested Strategies for proper management and maintenances of school plants in schools. Their responses in percentage has provided in the table.

Table 11: Management Strategies of the School Plants

s/no	Management strategies	Respondents		Respondents response %				
				5	4	3	2	1
1	The school principals determine the need for school plant facilities.	P = 12	100%			25	75	
		T = 80	100%				75	25
2	The responsibility of managing the school plant rests not only for school principals.	P = 12	100%	90	10			
		T = 80	100%	80	20			
3	Management decision involves operating and using school resources effectively and efficiently.	P = 12	100%	80	10			
		T = 80	100%	60	40			
4	Effective planning led effective resources management.	P = 12	100%	75	25			
		T = 80	100%	60	30	10		
5	The manager participate the stakeholders for managing the school resources.	P = 12	100%	95	5			
		T = 80	100%	90	10			
6	Teachers and administrative staffs are using the school resources effectively.	P = 12	100%	60	40			
		T = 80	100%	80	20			
7	PTSA plays leading role for managing the school resources.	P = 12	100%	75	25			
		T = 80	100%	60	40			
8	Child's sense of belonging to a school is strengthening if its physical plant is well, functional and pleasing to the eye.	P = 12	100%	85	15			
		T = 80	100%	75	25			
9	Good relationships among the stakeholders' strengthening the managing process	P = 12	100%	100				
		T = 80	100%	90	10			
10	Action taken by top manager can reinforce school principals effectively manage school resources.	P = 12	100%	80	20			
		T = 80	100%	90	10			

Legend: 1 - strongly disagree, 2- disagree, 3-neither agree nor disagree, 4- agree, 5- strongly agree

The respondents who disagreed on the school principals determine the need for school plant facilities were 75% for the principals and 75% for the teachers, indicating that majority of the respondents disagreed that the strategies on school principals determine the need for school plant facilities. Only 25% of teachers were strongly disagreed the strategies. This indicates that the stated strategies to were nor accepted in the school.

When asked about item two managing strategies, the responsibility of managing the school plant rests not only for school principals. 90% of the principals and 80% of teachers strongly agreed and 10% of principals and 20% of teachers agreed the issues. These results indicated that majority of the respondents strongly agreed the responsibility of managing school plant and the strategies were accepted.

On item 3, about Management decision involves for operating and using school resources effectively and efficiently, 80% of principals and 60% of teachers strongly agreed using of school resources effectively and efficiently. 20% and 40% of principals and teachers were also agreed the strategies. This indicated that the respondents also accept the strategies set by the researcher.

On item four in the above table 11, Effective planning led effective resources management, 75% of principals and 60% teachers' respondents has strongly agreed about effective planning led effective resources management and 25% of principals and 30% of teachers were both also agreed the strategies. While 10% of teachers were not decided the issues. This indicated that majority of the respondents agreed the strategies set by the researcher are also accepted by the respondents.

On the item 5 in the above table 11, the manager participate the stakeholders for managing the school resources, 95% and 90% of the respondents of principals and teachers were strongly agreed the manager participate the stakeholders for managing the school resources. Again 5% of principals and 10% of teachers were agreed the strategies. These results show that all of the respondents of teachers and principals strongly agreed and accepted the strategies. On item 6 in the above table 13, Teachers and administrative staffs are using the school resources effectively. 60% of principals and 80% of teachers strongly agreed the strategies for using of school resources effectively. 40% and 20% of principals and teachers were also agreed the strategies. This indicating that the suggested strategies set by the researcher has accepted.

The study investigated on item 7 in the above table 11 the PTSA plays leading role for managing the school resources, 75% and 60% of the responses for the principals, the teachers respectively strongly agreed, and 25% of principals and 40% of teachers also agreed about the PTSA plays

leading role for managing the school resources. Based on the above responses both principals and teachers strongly agreed and accepted the strategies.

On the item 8 in the above table, Child's sense of belonging to a school is strengthening if its physical plant is well, functional and pleasing to the eye, 85% and 75% of the respondents of principals and teachers were strongly agreed strategies respectively. Again 15% of principals and 25% of teachers were agreed. The results show strategies were accepted. On the item 9 in the above table, Good relationships among the stakeholders' were strengthening the managing process. 100% and 90% of the respondents of principals and teachers respectively has strongly agreed about good relationships among the stakeholders' strengthening the managing process. Only 10% of teachers were agreed. These results show that all the respondents strongly agreed and the strategies were accepted.

On the item 10 in the above table 11, Action taken by top manager can reinforce school principals effectively manage school resources, 80% and 90% of the respondents of principals and teachers respectively were strongly agreed. In addition, 20 % of principals and 10% of teachers were agreed the strategies. These results show that majority of the respondents agreed Action taken by top manager can reinforce school principals effectively manage school resources and the strategies were accepted.

4.4.3. Proper Maintenance Strategies of the School Plant

The study investigated proper maintenance strategies of the resources in schools. The study sought the teachers and principals opinion for proper management of school plant of school plants in sampled secondary schools. They were served with statements on a scale of 1-5, where 1 represented strongly disagrees, 2 disagree, 3 undecided, 4 agree and 5 strongly agree. The statements were to identify suggested Strategies for maintenances of school plants in schools. Their responses in percentage has provided in the table.

Table 12: Maintenance Strategies of the School Plant

s/no	Maintenances strategies	Respondents		Respondents response %				
				5	4	3	2	1
1	The school has a clear policy for maintenances of school resources.	P = 12	100%	58.3	41.7			
		T = 80	100%	32.5	62.5	5		
2	Repairs take places only when problems arise.	P = 12	100%		41.7		58.3	
		T = 80	100%		27.5		62.5	10
3	School community who constantly use school facilities lack knowledge of facilities maintenance planning	P = 12	100%	41.7	58.3			
		T = 80	100%	53.8	46.3			
4	The school facilities should be properly stored to avoid damage.	P = 12	100%	75	25			
		T = 80	100%	75	25			
5	The school manager should entirely be responsible for the refurbishing of the school equipment's.	P = 12	100%	50	50			
		T = 80	100%	68.8	25		6.25	

Legend: 1 - strongly disagree, 2- disagree, 3-neither agree nor disagree, 4- agree, 5- strongly agree

The respondents who strongly agreed on the school has a clear policy for maintenances of school resources were 58.3% for the principals and 32.5% for the teachers, indicating that majority of the respondents agreed that the strategies to enhancing the maintenances of school plants. Moreover, 41.7% of principals and 62.5% of teachers were agreed the strategies. This indicates that the stated strategy to enhancing the provision of maintenances of school plants has accepted in the school.

When asked about item 2 maintenances strategies, repairs takes places only when problems arise, 41.7% of the principals and 27.5% of teachers agreed while 58.3% of principals and 62.5% of teachers disagreed the issues. These results indicated that majority of the respondents did not accepted the maintenances strategies that repairs takes places only when problem arises. This is very common in the management of school facilities in societies where maintenance culture is not well established. It takes place when a facility breaks down and urgent measures or steps had taken to remedy the situation. In this regard, collective decision-making may not be possible because there may be limited time to bring together all the necessary individuals to make

decisions. It is also expensive because due to lack of maintenance, the extent of damage may demand total replacement of the facility or high cost of repair. In some cases, the breakdown may cause injury or even death to staff and or students of the school. The resultant effect may be high insurance premium or prevent the use of the facility for teaching and learning until repair has affected. School managers should proactively develop and implement facilities management plan for addressing facility needs. Therefore, based on the responses the researcher also rejected the strategies.

On item 3, about school community who constantly use school facilities lack knowledge of facilities maintenance planning, 41.7% of principals and 53.8% of teachers strongly agreed. 58.3% and 46.3% of principals and teachers were also agreed the strategies. This indicated that the respondents also accept the strategies set by the researcher. According to Young, Green, and Roerich - Patrick (2003), the quality of school facilities influences citizen perception of schools, which in turn, influences their support for public education. The school plant serves a number of important purposes for members of the community in the country. It often serves as a venue for different social functions like civic reception of some important visitors and dignitaries, wedding receptions, community or town meetings and other occasions and functions that require the gathering of a large number of people. This is the fact is that school has a sole for community but providing services to local community school facility resources has faces destruction, If the school principals should awareness about facility maintenances planning, the school community never now about the maintenances as well. Therefore, the strategies were accepted.

On item 4 in the above table, school facilities should be properly stored to avoid damages, 75% respondents of both principals and teachers were strongly agreed, and 25% were both also agreed the strategies. This indicated that the respondents also accept the strategies set by the researcher. In the school, stores are significant places to keep unused school furniture and equipment, reserve textbooks and old files etc… for effective handling of materials. Herrick John H. et al (1956: 373) suggests two types of stores in big schools; the central storage and small building stores. According to the authors, the reason for this is to ease the handling and to prevent pilfering, spoiling, and other reasons. For proper handling of material, economy of space, storage equipment as if shelves and bins should been considered in the design of the plan. Therefore, enhancing the maintenances of school plant the strategies were accepted.

On the item 5 in the above table, the school managers should entirely be responsible for refurbishing of the school equipment's, 50% and 68.8% of the respondents of principals and teachers were strongly agreed the refurbishing of the school equipment's respectively. Again 50% of principals and 25% of teachers were agreed. These results show that most schools managers were great responsibility for refurbishing of the school equipment's. School plant management involves a number of on-going and related activities – determining the need for school plants, educational programme planning, school facility or building design, building construction, furnishing and equipping the school, school plant operation, utilization and maintenance and school plant modernization or renovation, as the need arises. Fenker (2004) states that facilities management is a process that ensures that building and other technical systems support the provisions of an organization. School plant management ensures that school buildings and grounds, equipment, materials, technical and other service systems, facilitate and support the provision of education by a school. The responsibility for managing the school plant rests with the head teacher or the school principal. Therefore, for effective achievement of the organizational goals are material, equipment, facilities, information etc… resources can only be put to best possible combination by human beings (Chanda 1987: 8; Lotto and Mc McCarthy in Cambel et al, 1983:131), and the school managers should refurbishing of the school equipments. Thus, the strategies were accepted.

CHAPTER FIVE

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

This study aimed at finding out the statuses school plant management in sampled secondary schools in Bole Sub City. The study has guided by the following objectives; to assess the physical and material resources in secondary schools and to find out management strategies to enhancing the maintenance or to provide information about the school plants. Observation and questionnaires has used to collect the needed data from the principals and the teachers. This chapter therefore presents the summary of major findings, conclusions reached as well as the recommendations.

5.1. Summary

5.1.1. Demographic Characteristics of Respondents

The nature of respondents' reveals that very few female principals and teachers in the sample secondary schools. This indicates that the majority of the teachers teaching in the selected secondary schools of Bole sub- city are males .The number of female teachers is also in encouraging state. Moreover, the above data indicates that females, let alone occupy managerial positions, their participation at school level is reasonably significant comparing to the previous trend. Nevertheless, the proportion of female teachers and school leaders in the sample secondary school is significantly less to that of male counterparts. This could be an indicator of less participation rate of female teaches as well as principals at high school. Gender inequality observed in the sample secondary school and attention given to females in all aspects of the activities as long as the role of women is are concerned and their contribution to the overall activities of education. Besides, this may possibly reveal that the number of females was very low. Hence, it needs effort to qualify and empower them in every aspect. Concerning respondents' age, majority of the respondents' 56(60.9%) both principals and teachers ages were found between 30 and 39. This means that the respondents were so young they could work for lots of years. In terms of services and qualification the research shows that majority of the respondents of principals and teachers were 33(35.9%), and 31(33.7%) of the total number of

participants' services lie between 6 – 10 and 11 – 15 years respectively. This implies that the participants were acquiring minimum services. Concerning the qualification of the respondents among principals 66.7% of the respondents were first-degree holders and 33.3% of the respondents were second-degree holders. Among the respondents, 85% were males and 15% were females of teachers. From the result one can realize that significant number of teachers has fulfilled the minimum requirement of qualification needed at secondary school level, it requires second degree. The low level of teachers and school leaders in academic qualification yields poor and unscientific management practices specifically from school leaders' side and ineffective teaching-learning process from teaching personnel's.

5.1.2. The Availability of Material Resources in Secondary Schools

The first research objective sought to investigate the availability of material resources in sampled secondary schools. The researcher gathered data on the availability of physical facilities in the sampled schools. The researcher collected data by preparing observation checklist. The availability of physical plants in three sampled secondary schools has assessed through observation and the data was frequency counts of available in all (three of three, 100%), available in many (two of three, 66.7%), available in very few (one of three, 33.3%) and not available (none of three) has made in order to answer the question posed earlier. To answer the availability of physical facilities, the researchers observed that in all sampled secondary schools administrative offices, biology laboratory, physics laboratory, chemistry laboratory, classrooms, library, ICT lab, cafeteria, storerooms and staff rooms are available in all (three of three, 100%) while physical facilities like pedagogical centers were available in many schools(two of three, 66.7%). Nevertheless, physical facilities like clinics and students dining hall were available in few schools (one of three, 33.3%). Audiovisual rooms and rooms/classes for special (handicapped, gifted/talented) were not available (none of three). Material facilities in sampled secondary schools; chalk board/black board, instructional facilities, laboratory tables and chairs, library chairs, tables and reference books are available in all(three of three, 100%) sampled schools. Plasma, students' text books, photocopying machines, tables and chairs for students, shelves, and health and physical education facilities were also available in all(three of three, 100%) sampled secondary schools however, material facilities /equipments in laboratory like chemicals, manuals, and tables and chairs for teachers in the classroom were available in very

few (one of three, 33.3%). In School environments facilities in all sampled schools, like bulletin board, school fences, school garden, water and electric supply, and teacher toilets were available but students toilet were available inadequate.

5.1.3. Adequacy of Physical Facilities

The study established on adequacy of chairs and desks in the classroom for teachers that both the respondents teacher and principals has been disagreeing their adequacy. When asked about the adequacy of chairs and desks in the classrooms for students, both principals and teacher respondents have agreed on adequacy of desks and chairs in the classroom were adequate.

On adequacy of resources in the library the principals and teachers who agreed were three (25%) of school principals and 29(36.3%) teachers and strongly agreed on the adequacy of resources in library. On adequacy on equipment in the laboratory (physics, chemistry and biology) nine (75%) of principals and 55(68.2%) of teachers were disagreeing their adequacies. This indicated that most schools did not allocate enough resources to equip their laboratories. This was probably because laboratory equipment facilities are expensive and are required in large quantities. Laboratory rooms provide students with an opportunity to see and make observation of what they have taught (Oyeniran, 2003). Propst (1972) adds that learning takes place best through discovery exploration and interaction with the internal external environment. This implies that in such schools science lessons were more theoretical than practical. The laboratory is essential to the teaching of sciences and the success of any science course is much dependent on the laboratory provision made for it. Affirming this Ogunniyi (1993) said that there is a consensus among science educators that the laboratory occupies a central position in science instruction the reason why their availability and utilization cannot be overemphasized.

Concerning the adequacy number of latrines/toilets for students in the schools 31(38%) teacher and 7(58.3%) principals has been disagreed their adequacy. These results indicated that the schools did not prioritize issues that seemed not to have been direct related to tuition. In addition, the data gathered through observation has confirmed that in each class there was inadequacy of toilets. The availability of toilet hall and number of students' ratio were below schools standards. According to the MOE schools standard ration were 1:22 (one hall for 22 students) but in

sampled schools toilets hall is less than the standards i.e.1:71 as average. These results indicated that the schools did not prioritize issues that seemed not to have been direct related to tuition. Toilet facilities more or less address student welfare and therefore their adequacy were sometimes over looked and expansion and renovation of these facilities has somehow neglected.

The adequacy of water supply in secondary schools 47(58.8%) and eight (66.7%) of teachers and principals respectively agreed their adequacy. Therefore, based on the overall score value, it has concluded there were adequacies of water in sampled secondary schools. Provision of safe water and appropriate sanitation facilities are the first requirements in the creation a healthy learning environment. Supporting this, Miliband in ERIC (2007:1) says, "if you get the toilet right, you get the teaching right." No-question that water means health, better development and an acceptable quality of life. A school that provides safe drinking water implies that it has contributed to the physical and intellectual development of its students just much as a dedicated teacher who imparts the basic knowledge to students (Solsona and Fuertes, 2003: 19).

The study investigated the adequacy number of power supply to schools. The responses for 45(56.3%) and seven (58.3%) of teachers and principals respectively were agreed the adequacy of electric power. On the adequacy of playground in the school 64(80%) and 6(50%) of teachers and principals agreed their adequacy. The extent to which recreational facilities in schools are 31(38.8%) of teacher respondents have agreed on adequacy of recreational facilities were strongly agreed, 44(55%) of teacher respondents have also agreed the adequacy. Therefore, Facilities are of everything used directly or indirectly for the benefit of education. A school without facilities may not be able to achieve the stated goals and objectives of the system. When facilities are available and skillfully utilized, they influence learning and making it more meaningful. Facilities in education are very vital because they aid teaching and learning based on the overall score value, it has concluded there were adequacy of recreational facilities in sampled secondary schools.

When asked about the adequacy of computers in schools 45(56%) of teacher and eight (66.7%) of principals of respondents were adequate. The schools has adequacy of computers in sampled secondary schools this means that, teachers and students uses the resources effectively and helps to broaden students' knowledge; increase their level of understanding as well as stimulate and

motivate learners. Computers are important instructional aids in the teaching/learning process. Appropriate use of instructional aides helps keep learners interested and improves academic performance. On the adequacy of books and equipment storage facilities in the school are adequate. 43(53.8%) of teachers and seven (58.3%) of Principal respondents decide on the adequacy. Therefore, it has concluded that there was adequacy of storage facilities in sampled secondary schools. This has probably brought about development of funds necessary for construction and the challenge of having trained personnel to run the stores, on the other hand. Books has normally issued to the learners and collected at the end of the year; consequently, putting up of bookstores has given a priority in most schools.

Their adequacy agreement on extent to which teaching resources (instructional materials) such as duster, chalk, models, charts in the school are adequate. 44(45%) of teachers and 7(58.3%) of Principal respondents decide on the adequacy. Grant (1978) asserts that teaching and learning cannot be effective without adequate and relevant use of instructional materials. Schramn (1977) referred to instructional materials as basic channel of communication (of ideas and concepts) in the classroom for bringing about effective teaching and learning. According to Abimbade (1997) instructional resources in teaching and learning make students to learn more and retain better what they has been taught and that it promotes and sustains students" interest. It also allows the learners to discover themselves and their abilities and consequently provides them with an opportunity to realize their full potential. A result the school has gives great priority for providing teaching resources.

When asked about the adequacy of internet in the school. 37(46.3%) of teacher and four (33%.3) of principal respondents were not adequate. This probably due to the responsible persons did not give any attention for the failure of the system, i.e. the Ethiopian telecommunication corporation did not take any action when there is a failure in a system. Moreover, education bureau and bole sub city's education offices the exiting internet services did not evaluate the system and takes any measures to fulfill the system.

Concerning the adequacy of printing and photocopying machines in the school 47(58.7%) of teachers and six (50%) of principals were response were agreed adequacy. On adequacy of

offices for departments 43(53.8%) of teacher and six (50%) principal respondents disagree the adequacy.

5.1.4. Management of the School Physical Plants (Resources)

Concerning Ways of Maintaining the Resources, the study has found that for effective managing the physical as well as material resources proper monitoring of the material resources and prompt maintenance of the material resources were necessary. Repair and refurbishing of infrastructure also needed in the management of material resources. Storage of material resource and provision of replacement are ways of maintaining the resources.

In Research Question 4, it has found out that the respondents to be capable of suggested proper management of the school plant accepted 9 out of 10 strategies. Some of the strategies are the responsibility of managing the school plant rests not only for school principals, Management decision involves for operating and using school resources effectively and efficiently, Effective planning led effective resources management and The manager participate the stakeholders for managing the school resources.

The other strategies for proper management school plants are teachers, administrative staffs are using the school resources effectively, and PTSA plays leading role for managing the school resources. Child's sense of belonging to a school is strengthening if its physical plant is well, functional and pleasing to the eye, Good relationships among the stakeholders' strengthening the managing process and Action taken by top manager can reinforce school principals effectively manage school resources.

The school plants as an essential component of the school system, consumes a large proportion of the education budgets. Consequently, these educational facilities has be properly managed to ensure good returns and attainment of educational goals. Bosah (1996) have stressed that plant maintenance will enhance physical environment that promotes teaching-learning processes and will protect the financial and material investment of the community. Owodogu (1989:11) had earlier on, posited, "A poorly kept building … or poorly maintained site all inhibits the development of a good educational programme." Thus good as the provision of plant is, a more important one is to maintain the plant. It therefore becomes imperative for the government,

parents and school administrators to ensure that the available facility has regularly maintained to maximize their utility. In addition, it has found that out that 4 out of 5 strategies have accepted by the respondents to be capable of maintenance strategies for managements of the school plant. The strategies are the school has a clear policy for maintenances of school resources, school community who constantly use school facilities lack knowledge of facilities maintenance planning, the school facilities should be properly stored to avoid damage and the school manager should entirely be responsible for the refurbishing of the school equipments. This agreed with the views of Obi and Ezegbe (2002) who maintained that the most crucial role of the school administrator with respect to plant management is maintenance. He should prudently use the resources available to him to maintain the buildings, furniture, equipment and other items as much as possible in their original states.

In fact, the management of school plant is very necessary for effective school administration. This is because lack of it or poor maintenance of it brings about poor environment, poor academic Performance of students.

5.2. Conclusions

From the findings of this study, the following conclusions are made; the physical resources such as administrative offices, laboratory buildings, library, classes, ICT lab, Cafeteria, storeroom and staffrooms are available in all sampled secondary schools. Materials related to classroom instruction and Teaching-learning resources in all sampled secondary schools are available. Nevertheless, Physical facilities like clinics, students dining hall and pedagogical centers and Laboratory facilities in physics, chemistry and biology labs like chemicals, apparatus, manuals, in sampled secondary schools are inadequate in most schools. School environments facilities in all sampled schools are available. Based on school standards the numbers of students' latrines/toilets and teacher's desks and tables in a class are inadequate in all sampled secondary schools. Internet facilities with function in most schools are inadequate. Finally, the findings of this study further imply that the educational objective for secondary education has affected.

5.3. Recommendations

Based on the findings and conclusions of this study, the following recommendations made-

1. The Ministry of Education allocates more funds to equip the laboratory facilities like apparatus, chemicals and manuals, pedagogical centers and clinics.
2. Addis Ababa Education Bureau and Ethiopian Telecommunication Corporation give more weight to support and regulate schools internet facilities.
3. Addis Ababa Education Bureau provides training for school principals for enhancing facility-managing skills.
4. The heads of institutions gives more weight to support facilities such as latrines/toilets and student dining hall. Regular school inspection and a good maintenances programme recommended to protect the existing school plant.
5. The school principals create awareness for the school community about school plant maintenances i.e. the PTSA are entirely be responsible for supporting the school's maintenance programs.
6. In order to avoid expensive maintenances, the school principals follow preventive maintenance programs, providing free service community, NGO's, its students and others. School principal or administrator must learn to delegate duties and co-ordinate the activities of his/her subordinates for effective monitoring of resources in schools.
7. Qualified and experienced school administrator employed to manage the resources. A master degree in educational management is needed for would be school principal of secondary school in the state. This done in developed country.
8. Finally, Government have to provide the resources, facilities and equipment needed in the schools in order to create an environment for effective teaching and learning. They also assist schools by building maintenance costs into educational budget to take care of deterioration of the school plant facilities.

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APPENDIX – A

OBSERVATIONAL CHECKLIST

Part I: General Information

1. Name of the school ----------
2. Level of the school : A. Secondary B. Preparatory

Part II: Availability of Resources in secondary schools

No	Physical Facilities	Yes	No	Remark
1	Administrative offices			
2	Biology Laboratory			
3	Cafeteria			
4	Chemistry Laboratory			
5	Classroom			
6	Clinics/first aid room			
7	Ict rooms with computers			
8	Library with reference books			
9	Pedagogical centers			
10	Physics laboratory			
11	Staffrooms			
12	Sore rooms			
13	Students dining hall			
	Material Facilities			
14	Library chairs, tables and reference books			
15	Chalk board /black board			
16	Health and physical education facilities			
17	Instructional facilities			
18	Laboratory chemicals and equipment			
19	Laboratory tables and chairs			

20	Plasma			
21	Students text books			
22	Tables and chairs for students in class			
23	Tables and chairs for teachers in class			
24	Photocopying machines			
25	Shelves			
	School Environments			
26	Bulletin board			
27	School fences			
28	School garden			
29	Toilet for students			
30	Toilet for teachers			
31	Water			
32	Electricity			

APPENDIX – B

ADDIS ABABA UNIVERSITY

SCHOOL OF GRADUATE STUDIES

COLLEGE OF EDUCATION AND BEHAVIORAL STUDIES

DEPARTMENT OF EDUCATIONAL PLANNING AND MANAGEMENT

A Questionnaire to fill by Secondary School Principals and Teachers

Dear Respondents'':

The purpose of this questionnaire is to assess the status of school plant management in the context of Addis Ababa city Administration, especially in Bole Sub City Secondary School. The study is conducted only for academic purposes. Your responses to the questionnaires will be highly valuable and it is contributes to the successes of the study. Thus, you are kindly requested to carefully and honestly fill out and return it to the researcher. The information you give on this questionnaires will be entirely kept confidential.

Thank you very much in advance for your cooperation

General directions

a) You need not write your name on the questionnaire
b) Please answer every question according to the given directions
c) Put an "√" mark in the rating items provides in the box
d) If you want to change any of your response, make sure you have clearly cancelled out the previous response

PART I: GENERAL INFORMATION

3. Name of the school ----------
4. School Level : Secondary ☐ Preparatory ☐
5. Sex: Male ☐ Female ☐
6. Your Age group: A/ 20 – 29 B/ 30 – 39 C/ 40 – 49 D/ 50 and above
7. Your Educational Background :

   A. Diploma B. BA/BED/BSC C. MA/MSC/MED
8. Year of Services: A/ 1 – 5 years B/ 6 – 10 C/ 11 – 15 D/ 16 and above
9. Work experiences as a principals ---------- years.

Instructions: The question investigates the adequacy of physical facilities, to enhancing the maintenances strategies and proper resources management; consists statements with a scaling of 1 to 5 a grid (**5 strongly agree, 4 Agree, 3 undecided, 2 disagree, 1 strongly disagree)**, please tick (√) the response that most closely approximates your opinion about the statements.

PART II: Adequacy of physical facilities

S/no	Items	5	4	3	2	1
2.1	The number of desks and chairs in the staff room is adequate					
2.2	The number of desks and chairs in the classroom is adequate					
2.3	The resources in the library are adequate for the number of students in the school					
2.4	The number of latrines/toilets in the school are adequate for the number of students in the school					
2.5	The number of latrines/toilets in the school are adequate for workers in the school					
2.6	The number of offices allocated are adequate for the departments in the school					
2.7	The size of the dining hall is adequate for the number of students in the school					
2.8	The size of the playground is adequate for the number of students in the school					
2.9	The water supply to the school is adequate					
2.10	The supply of power to the school is adequate					
2.11	Recreational facilities e.g. TVs, Videos, Radios are adequate					
2.12	The numbers of computers in the school are adequate for the number of students and teachers in the school.					
2.13	Books and equipment storage facilities in the school are adequate					
2.14	The number of reference books in schools library are adequate					
2.15	The number of teachers guide in the school are adequate					
2.16	Teaching resources such as dusters, chalk, models, charts, are adequate					

2.17	The equipment in the physic laboratory are adequate for the number of students in the school					
2.18	The equipment in the chemistry laboratory are adequate for the number of students in the school					
2.19	The equipment in the biology are adequate for the number of students in the school					
2.20	Internet service in the school is adequate for students and teachers.					
2.21	Printing and photocopying machines in the schools are adequate.					

PART III - Ways of Managing Resources

S/N	Items	Respondent in %	
		Agree	Disagreed
1	Monitoring		
2	Prompt maintenance		
3	Repair or Refurbishing existing infrastructures		
4	Storage		
5	Provision for replacement		

PART IV - STRATEGIES TO ENHANCE THE MAINTENANCES OF SCHOOLS PLANTS

S/no	Items	5	4	3	2	1
3.1	The school has a clear policy for maintenances of school resources.					
3.2	Repairs take places only when problems arise.					
3.3	School community who constantly use school facilities lack knowledge of facilities maintenance planning.					
3.4	The school facilities should be properly stored to avoid damage.					
3.5	The school manager should entirely be responsible for the refurbishing of the school equipments.					
3.6	School principals should have good custodial officers in charge					

	of the facilities and equipment's in the school.					
3.7	The school principals should create awareness for the school community about school plant maintenances.					
3.8	In order to avoid expensive maintenances, the school principals should follow preventive maintenance programs.					
3.9	The PTSA should entirely be responsible for supporting the school's maintenance programs.					
3.10	School's should have made maintenances by providing free service community, NGO's, its students and others					
PARTV - SUGGESTED STRATEGIES FOR PROPER RESOURCES MANAGEMENT						
4.1	The school principals determine the need for school plant facilities.					
4.2	The responsibility of managing the school plant rests only for school principals.					
4.3	Management decision involves for operating and using school resources effectively and efficiently.					
4.4	Effective planning led effective resources management.					
4.5	The manager participate the stakeholders for managing the school resources.					
4.6	Teachers and administrative staffs are using the school resources effectively.					
4.7	PTA plays leading role for managing the school resources.					
4.8	Child's sense of belonging to a school is strengthening if its physical plant is well, functional and pleasing to the eye.					
4.9	Good relationships among the stakeholders' strengthening the managing process.					
4.10	Action taken by top manager can reinforce school principals effectively manage school resources.					

APPENDIX – C - Schools Standards

በአዲስ አበባ ከተማ አስተዳደር ትምህርት ቢሮ

የ2ኛ ደረጃ እና መሰናዶ ትምህርት ቤት ስታንዳርድ

ግንቦት/2001ዓ.ም

ከ9-12ኛ ክፍሎች

1. **የአስተዳደር ሕንጻ/ብሎክ/ስፋት በሜትር ካሬ**

ተ.ቁ	ክፍል/ቢሮ መጠን/ስፋት	
1.1	የርዕሰ መምህር ቢሮ.....	3.55X3.53 = 12.53
1.2	የም/ር/መምህር ቢሮ.....	3.55X3.53 = 12.53
1.3	የአስተዳደር ቢሮ.....	3.55X3.53 = 12.53
1.4	የመዛክር ክፍል	3.55X3.53 = 12.53
1.5	የፀሐፊ ቢሮ	3.00 X 3.53= 10.59
1.6	የመምህራን ማረፊያ	3.70 X 7.60 = 28.12
1.7	ክሊኒክ	3.53 X 4.20 = 14.83
1.8	የመቆያ ቦታ.....	1.80 X 2.30 = 4.14
1.9	ንብረት ክፍል	5.55 X6.70 = 37.19
1.10	የጽዳት ሠ/ክፍል	14.85 X 1.2= 17.82
1.11	የጥበቃ ቤት	2.45X 2.45= 6.00
1.12	መጸዳጃ ቤት.....	2.15 X 2.85 = 6.13
1.13	የሜይን ዲስትሪቢዩሽን /የኤሌክትሪክ ዋና ማከፋፈያ/ ያለበት ክፍል	1.00 X 1.48 = 1.48
1.14	ኮምፒዩተር ማዕከል በተማሪ	2.2 ካ.ሜ
1.15	የሰርቨር ሩም	1.00 X 1.48 = 1.48

2. **የቤተ መጻሕፍት ሕንጻ / ብሎክ/**

2.1 የንባብ ክፍል 10.20 X 6.55 = 66.81 (በሰው 1.67 ካ.ሜ) ካሉት ተማሪዎች ውስጥ 20% መያዝ የሚችል መሆን አለበት፡፡

2.2 የመጻሕፍት ማስቀመጫ ክፍል 4.10 X 6.55 = 26.86

በአጠቃላይ የብሎክ መጠን 695 X 14.80 = 102.86

3. **ባለ 2 ወይም ባለ 4 የመማሪያ ክፍል**

አንድ የመማሪያ ክፍል ለ40 ተማሪዎች የሚበቃ ሲሆን መጠኑ 7.20 X6.40= 46.08 በተጨማሪም የብሎኩ መጠን እንደ ተማሪው ብዛት ወደ ጐን ወይም ወደ ላይ ሊያድግ ይችላል፡፡

ከ9ኛ -12 ኛ ክፍሎች ያሉት የሁለተኛ ደረጃ ት/ቤት

4. **የፊዚክስ ላብራቶሪ /ብሎክ/ ስፋት በሜትር ካሬ /በተማሪ 3.8 ሜትር ካሬ ይሆናል/**

4.1 ፊዚክስ ዲሞንስትረሽን ክፍል..... 17.70 X5.85 = 103.55

4.2 ዝግጅት ክፍል..... 2.40 X 5.80 = 13.92

4.3 ስቶር …….. 3.30 X 5.80 = 19.14

4.4 የእሳት አደጋ መከላከያ …….. —

4.5 በአጠቃላይ የብሎክ መጠን …… 24.44 X 6.25 = 152.75

5. የኬሚስትሪ /ላብራቶሪ/ ብሎክ

ከላይ በተራ ቁጥር 4 እንደተጠቀሰው መጠኑ አኩል ነው።

6. የባዬሎጂ ላቦራቶሪ /ብሎክ/ /በተማሪ 2.7 ሜ.ካሬ ይሆናል/

6.1 የባዬሎጂ 15 X 5.85 = 87.75

6.2 ዝግጅት ክፍል 2.4 X 2.86 = 6.86

6.3 ስቶር 3.30 X 2.85 = 9.4

6.4 የእሳት አደጋ መከላከያ -

7. በእያንዳንዱ የትምህርት ክፍል (ዲፓርትሜንት ክፍሎች)

6.92 X 7.26 = 50.24 ሜትር ካሬ

8. የመሰብሰቢያ አዳራሽ (ብሎክ) (2.13 ካሬ ሜትር በተማሪ)

አጠቃላይ የብሎክ መጠን 16.25 X 26.20 = 425.75

9. የወንዶች መጸዳጃ ቤት /ብሎክ/ ስፋት በሜትር ካሬ

ባለ 8 ቀዳዳ ሽንት ቤት የአንዱ ሽንት ቤት መጠን

0.90 X 1.2 በጥቅሉ የብሎኩ መጠን 5.30X 4.2= 22.26

10 የሴቶች መጸዳጃ ቤት /ብሎክ/

ከላይ በተራ ቁር 9 እንደተጠቀሰው መጠኑ እኩል ነው።

11. የትምህርት ማበልጸጊያ ማዕከል (በተማሪ 5 ካ.ሜትር)

11.1 ወርክሾኘ 12ሜ X 8ሜ = 96 ሜ.ካሬ

11.2 ስቶር 11ሜ X 9ሜ = 99 ሜ.ካ

1.2.5 ለልዩ ልዩ ክፍሎች አስፈላጊ ፈርኒቸርና ቁሳቁሶች ለአንድ ክፍል

1.2.5.1 የመማሪያ ክፍል

ተ.ቁ	የመማሪያው ዓይነት	መጠን በሴንቲ ሜትር				
		ብዛት	ርዝመት	ወርድ	ቁመት	ምርመራ
1	ዴስክ	20	55	100	74	በ1 ዴስክ 2 ተማሪዎች ያሚስቀምጥ
2	ጠረጴዛ	1	80	120	74	የመምህሩ
3	ወንበር	1	40	56	78	የመምህሩ
4	ወንበር	40	35	35	77	የተማሪው
5	ጥቁር ሠሌዳ	1	-	5	120	
6	ማስታወቂያ ሠሌዳ	1	-	1.2	2.20	
7	ኘላዝማ	1	-	-	-	
8	ነጭ ሠሌዳ	1	-	-	-	ላብራቶሪዎች ላይም ታሳቢ ይሆናሉ /ይጨመራሉ/
9	ኦቨርሄድ ኘሮጀክተር					
10	LCD Projector					
11	Computer					
12	ተንቀሳቃሽ ስክሪን					

1.2.5.2 የላብራቶሪ ክፍል ፈርኒቸር

ተ.ቁ	የዕቃው ዓይነት	ብዛት			መጠን በሴንቲ ሜ.		
		ፊዚክስ	ባዮሎጂ	ኬሚስትሪ	ስፋት	ወርድ	ቁመት
1	በርጩማ ስቱል	42	42	42	32	-	54
2	የመምህሩ ወንበር	1	1	1	40	56	78
3	የመምህሩ ጠረጴዛ	1	1	1	120	60	75
4	የመምህሩ ዲሞንስትሬሽን ቴብል	1	1	1	80	220	85
5	የተማሪዎች ወርክ ቤንች	20	20	20	55	110	82
6	ላቦራቶሪ ካኘ ቦርድ						
	ላይ	4	4	4	120	40	110.2
	ታች	4	4	4	120	60	90
7	ዲስኘለይ ካኘቦርድ						
	ላይ	1	1	1	120	40	67.6
	ታች	1	1	1	120	50	82.2
8	ቬንቲሌተር	1	1	1	-	-	-
9	ጥቁር /ነጭ/ ሠሌዳ	1	1	1	-	-	-

1.2.5.3 በቤተ መጻሕፍት የሚገኙ የማዳመጫና የእይታ / የመስሚያና የማያ/ መሣሪያዎች

ተ.ቁ	ዓይነት	መግለጫ
1	አትላስ	የካርታ መጻሕፍት
2	ሥዕሎች	ፎቶግራፎችን መጻሕፍት ያጠቃልላል
3	ቻርቶች	ልዩ ልዩ አሃዛዊ መግለጫዎች የተመለከተ
4	ግሎቦች	ፊዚካል፣ ፖለቲካል ... ወዘተ
5	ካርታዎች	በዓለም፣ በአህጉር ፣ በሪጅን፣ በሀገር ጆኦግራፊ፣ ሳይንስ ትም/ዓይነቶች ቋንቋ ወዘተ
6	ስላይድ የፎቶግራፍ ፊልሞች	የጆኦግራፊ፣ ሣይንስ
7	ባለ ድምጽና ድምጽ የሌላቸው ፊልሞች	
8	ቴኘ ሪከርድ	
9	የባሕል መሣረያዎች	የቴክኖሎጂ እንዲሁም የአለባበስና የቅርሳ ቅርስ ስብስብን ያጠቃልላል፣
10	ኢንተርኔት	

1.2.5.4 ለቤተመጻሕፍት የውስጥ ድርጅት

ቤተ መጻሕፍት በት/ቤት ሊኖር ይገባል፣ አገልግሎቱም፡-

- ለተማሪዎችና ለመምህራን አገልግሎት የሚውሉ መጻሕፍት ለማቅረብ፣
- የማንበብን ልምድና ፍለጎት ለማዳበር፣
- ማንኛውንም የጥናትና ምርምር ሥራዎች ለማካሄድ በምንጭነት ለማገልገል፣
- የመጻሕፍትና የቤተመጻሕፍት አጠቃቀም ዘዴዎችን ለማስተማር፣
- ትርፍ ጊዜን በንባብ ለማሳለፍ ያገለግላል።

በት/ቤት ውስጥ የሚቋቋሙ ቤተመጻሕፍት በአንድ ማዕከላዊ ቦታ ይደራጃሉ። ፀጥታና በቂ ብርሃን እንዲሁም ሰፊ የማንበቢያ ቦታ ያስፈልጋል። የመጻሕፍት ብዛትና ዓይነቶችም እንደ ትምህርት ዓይነቶችና ተማሪዎች ቁጥር ከፍ ያለ መሆን ይኖርበታል። ይህ ቤተመጻሕፍት ተማሪዎችና መምህራን በሚያመቻቸው ሰዓት ማንበብ እንዲችሉ ክፍት መሆን አለበት። ለዚሁም ሥራውን የሚመራ በሙያው የሰለጠነ ሰው መኖር አለበት። ይህም ተማሪውን ከቤተመጻሕፍት ሥርዓት ጋር ለማስተዋወቅ ያገለግላል።

ተ.ቁ	ዓይነት	ብዛት	መግለጫ/ሳይዝበኳ.ሜ/
1	ኮምፒዩተር ለላይብረሪ አስተዳደር ሥራ የሚውል	2	ለጽሕፈት ሥራና ለመረጃ ሥራ
2	መቀስ	1	መካከለኛ
3	የቀን መቁጠሪያ ማጎተም	1	
4	የቤተመጻሕፍት ማጎተም	1	
5	ስቴፕለር ትልቁ እና ትንሹ	2	
6	የማጎተም መርገጫ	1	
7	ዴት ዱዬ ካርድ	-	
8	ማዋሻ ካርድ	-	
9	መቆጣጠሪያ ካርድ	-	
10	የመጻሕፍት ካርድ	-	
11	የመጻሕፍት መደገፊያዎች	100	13X10
12	ማንበቢያ ጠረጴዛ	16	80 X150 X74
13	ወንበር	80	35 X35 X77
14	የካርድ ሣጥን	1	ባለ 12 መሳቢያ52 X44 X 44
15	ፋይል ካቢኔት	1	45 X62 X135
16	የኃላፊው ጠረጴዛ	1	80 X16 X74
17	የመጽሐፍ መንኮራኩር	1	60 X100 X80
18	የኃላፊው ወንበር	1	40 X56 X78
19	የጋዜጣ መደርደሪያ	1	
20	የመጻሕፈት መደርደሪያ	1	95 X40 X105
21	የመጻሕፍት ሼልፍ	25	120 X40 X200
22	ጥቁር ሠሌዳ	1	500 X 120
23	ማስታወቂያ ሠሌዳ	1	120 X 120
24	ነጭ ሠሌዳ	1	200 X 150
25	ፓንቸር /ወረቀት መብሻ/	1	
26	ፔፐር ትሪ	1	
27	ኮምፒዩተር	1	
28	ፎቶኮፒ ማሽን	1	

1.2.5.5 ለማዕከል የሚያስፈልጉ ልዩ ልዩ ቢሮ ዕቃዎችና

የእጅ ሥራ መሥሪያ መሣሪያዎች ብዛት

ተ.ቁ	የዕቃው ዓይነት	ብዛት	ምርመራ
1	ወንበር	3	
2	ጠረጴዛ	3	
3	መደርደሪያ መሳሪያዎች	1	
4	ጥቁር ሠሌዳ	1	
5	የአንጨት መሥሪያ ቤንች	1	
6	የብረት ሠራ መ.ቤንች	2	
7	የማስታወቂያ መለጠፊያ ሠሌዳ	1	

የመጀመሪያ ሕክምና

- ተማሪዎች ከአላቸው የአካልና የስሜት ማደግ ባህሪያቸው የተነሳ በተለያዩ መንገዶች ለበሽታና ለአደጋ ይጋለጣሉ፡፡ ለምሳሌ ያህል በጨዋታ ሜዳ ላይ እንዲሁም በሥራቦታዎች የወለምታ፣የስብራት፣የመቁሰልናየመድማት፣ በእባብ የመነደፍና በውሻ የመንከስ፣ በስለትነገርየመቆረጥና የመወጋት፣ በልዩልዩ ሕመሞችምክንያት /በስኳርበሽታበሚጥልበሽታ/ አእምሯቸውን የመሳት፣በውሃየመስመጥናየመታፈንሁኔታዎችሊያጋጥማቸውይችላል፡፡ በዚህን ጊዜ ጉዳት የደረሰበትተማሪከፍተኛየሕመም@የጭንቀትናየሁከትሁኔታዎችይታዩበታል፡፡ በአንዳንድጉዳቶችብዙደምይፈስባቸዋል፡፡በአንዳንዶቹደግሞየደምመመረዝናትንፋሽየማጠርሁኔታዎችይከሰታሉ፡፡
- ይህንለመሳሰሉችግሮችፈጥኖበመድረስየሕክምናእርዳታየሚሰጥየጤናባለሙያበቅርቡላይኖርይችላል፡፡በአቅራቢያውየጤናአገልግሎትቢኖርምእንኳንእቦታውእስኪደርስድረስበሽተኛውሊጐዳይችላል፡፡ሊሞትምይችላል፡፡
- ስለዚህየመጀመሪያሕክምናእርዳታዋናአገልግሎትበሽተኛውሐኪምቤትከመድረሱበፊትየአለውን ችግርለመቀነስእንዳይባባስለመርዳትናበሕይወትአቆይቶለሕክምናባለሙያለማድረስየሚያግዝ ፈጥኖደራሽየነፍስአድንሥራነው፡፡
- በመሆኑምይህንሥራለማከናወንበየት/ቤቱየሰለጠኑየመጀመሪያዕርዳታየሚሰጡወጣቶች / መምህራን/ ፣የመጀመሪያሕክምናዕርዳታመስጫቤትናየመጀመሪያሕክምናዕርዳታመስጫክፍል (1st aid post) ሊኖረውይገባል፡፡
- በአንድ የመጀመሪያ ሕክምናእርዳታመስጫሣጥን (1st aid kit) ውስጥ ሊኖሩ የሚገባቸው የሕክምና መሣሪያዎች የሚከተሉት ናቸው፡፡

    1. Adhesive plaster 5Cm x 10m rolls.
    2. 12 vow gauze bandage 8cm x 5m rols.

3. Dissecting forceps.
4. Examination gloves
5. 1 bottle of dettol 250ml
6. Sissors 14 cm Gc.p
7. Elastic bandage 10 cm x 4.5m
8. 2 elastic woven bandage 8 cm x 5m
9. 12 vow gauze bandage 7.5cm x 5m
10. 4 triangular bandages
11. Cotton wool 400 gm.
12. 1 pack hand plast ናቸው።

- እነዚህ ከላይየተጠቀሱትየመጀመሪያሕክምናዕርዳታቁሳቁሶች በቀይመስቀል በኩልመግዛትይቻላል። ከዚህምበላይበውስጡያሉትዕቃዎችሲያልቁለቀይመስቀልማኅበርእየተከፈለማስሞላትየሚቻልቢሆንምየ ተማሪዎችቁጥርከ100በላይለሆኑት/ቤቶችበቤተሙከራዎችውስጥአንዳንድየመጀመሪያሕክምናዕርዳታሣ ጥንያስፈልጋል።ከዚህበላይለሆነውየሕክምናአገልግሎትበኮሙኒቲክሊኒኮችተማሪዎችሊጠቀሙይችላሉ ።ጉዳተኛውንምሕክምናወደሚያገኝበትለማንቀሳቀስምአንድእስትሬቸርያስፈልጋል።
- በአንድ ክፍል 40ተማሪዎችይመደባሉ።
- ልዩፍላጐቶችያሏቸውወጣቶችከሌሎችመደበኛትምህርትቤትተማሪዎችጋርተቀላቅለውእንዲማሩበሚደ ረግበትጊዜየተለየክህሎትእንዲያገኙለማድረግከመደበኛክፍሎችናየትምህርትጊዜውጪበልዩክፍሎች/ Unit/ በልዩመምህራንናባለሙያዎችይረዳሉ።

APPENDIX – D - External School Evaluation checklists

የትምህርት ቤት ፍረጃ ስታንዳርዶችን ለመፈተሽ የተዘጋጀ የመረጃ መሰብሰቢያ መጠይቅ

(Checklist)

የግብአት ስታንዳርዶች

1.1. የትምህርት ቤት ፋሲሊቲ፣ ህንፃዎች የሰው ሀይልና የገንዘብ ምንጮች

ስታንዳርድ 1. ትምህርት ቤቱ ለደረጃው በተቀመጠው ስታንዳርድ መሰረት የመማሪያ እና የመገልገያ ህንፃዎች፣ ፋሲሊቲዎች እና የማስተማሪያ መርጃ መሳሪያዎች (Learning Resource) አሟልቷል፡፡ /4%/

አመልካች 1.1. የት/ቤቱ ህንፃዎች በተቀመጠላቸው ስታንዳርድ መሰረት የታነፁና የተሟሉ ስለመሆናቸው፤ /1%/

1.1.1. ህንፃዎች (እንደየአካባቢው ተጨባጭ ሁኔታ የአየር ንብረትና የማቴሪያል አቅርቦት ከሲሚንቶ፣ ከአሸዋ፣ ከብሎኬትና ከሸክላ ወዘተ... የተሰሩ ስለመሆናቸው)

ተ.ቁ	ክፍሎች	ብዛት	የአፈጻጸም ምዘና ደረጃ				የመረጃ ምንጮች	መግለጫ
			4	3	2	1		
1	የርዕሰ መምህር/ት ቢሮ	1					የት/ቤቱን ህንፃና የመማሪያ ክፍሎችን በመመልከት	
2	ምክትል ር/መምህር/ት ቢሮ	1						
3	የአስተዳደር ቢሮ	1						
4	የመዘክር ቢሮ	1						
5	የፀሐፊ ቢሮ	1						
6	የመምህራን ማረፊያ ክፍል	1						
7	የመጀመሪያ እርዳታ መስጫ ክፍል	1						
8	የመቆያ ቦታ	1						

ተ.ቁ	ክፍሎች	ብዛት	የአፈጻጸም ምዘና ደረጃ				የመረጃ ምንጮች	መግለጫ
			4	3	2	1		
9	ንብረት ክፍል	1						
10	የጽዳት ሠራተኛ ክፍ	1						
11	መጸዳጃ ቤት ለመምህራንና ሠራተኞች • የወንዶች • የሴቶች	 1 1						
12	የጥበቃ ቤት	2						
13	የኤሌክትሪክ ዋና ማከፋፈያ ክፍል	1						
14	የፊዚክስ ላቦራቶሪ ክፍል	1						
15	የኬሚስትሪ ላቦራቶሪ ክፍል	1						
16	የባዮሎጂ ላቦራቶሪ ክፍል	1						
17	የትምህርት ማበልፀጊያ	1						
18	መፀዳጃ ቤት /ለተማሪ/ • ለወንድ • ለሴት	 8 8						
19	ቤተ - መፅሐፍት	1						
20	አዳራሽ	1						
21	የልዩ ትምህርት መማሪያ ክፍሎች የመማሪያ ክፍል	2						
22	የንግግር ወጌሻ መስጫ ክፍል	1						

1.1.2. አስፈላጊ የትምህርት ቁሳቁሶች ስለመሟላታቸው (አንድ መማሪያ ክፍል ሊኖሩት የሚገቡ ቁሳቁሶችና መጠናቸው)

ተ.ቁ	ቁሳቁሶች	ብዛት	የአፈጻጸም ምዘና ደረጃ				የመረጃ ምንጮች	መግለጫ
			4	3	2	1		
1	ወንበርና ጠረጴዛ (በአንድ ዴስክ ሁለት ተማሪዎች የሚያስቀምጥ)	20					የት/ቤቱን የተለያዩ ፋሲሊቲዎች/ ቁሳቁሶች/ በመቁጠር፣	
2	ጠረጴዛ /ለመምህሩ/ሯ	1						
3	ወንበር /ለመምህሩ/ሯ	1						
4	አርምቼየር /የተማሪው/	1						
5	የጠመኔ ሰሌዳ	1						
6	የማስታወቂያ ሰሌዳ	1						

አመልካች 1.2. ት/ቤቱ በስታንዳርዱ መሰረት የተማሪ - ክፍል፣ የተማሪ መጽሀፍ/ብሬይል/፣ የመምህሩ/ሯ መምሪያ/ብሬይል/ እና አጋዥ /ማጣቀሻ መጽሐፍትን በተመለከተ፣ /1%/

ተ.ቁ	ቁሳቁሶች	ብዛት/ምጣኔ	የአፈጻጸም ምዘና ደረጃ				የመረጃ ምንጮች	መግለጫ
			4	3	2	1		
1	የተማሪ ክፍል ጥምርታ ከ9ኛ - 12ኛ	1፡40					ተማሪዎችን፣ ር/መምህሩ/ሯንና የሚመለከታቸውን የአስ/ሠራተኞች በመጠየቅ፣ ሰነዶችን በመመልከት	
2	የተማሪ መፅሀፍ/ብሬይል/ ጥምርታ	1፡1						
3	የመምህር/ት መምህር/ት መምሪያ/ብሬይል/ ጥምርታ	1፡1						

አመልካች 1.3. ት/ቤቱ በስታንዳርዱ መሰረት ቤተ - መጽሃፍት፣ ቤተ - ሙከራ፣ የአይ. ሲ. ቲ. ማዕከል፣ የትምህርት ማበልፀጊያ ማዕከል፣ የስፖርት ሜዳ ማሟላቱን በተመለከተ፤ /1%/

ተ.ቁ	የተለያዩ ፋሲሊቲዎች	ብዛት	የአፈጻጸም ምዘና ደረጃ				የመረጃ ምንጮች	መግለጫ
			4	3	2	1		
1	ቤተ-መፃህፍቱ በተቀመጠው ስታንዳርድ መሰረት በፋሲሊቲ የተሟላ ስለመሆኑ						ምልከታ	
2	ቤተ-ሙከራዎች በተቀመጠው ስታንዳርድ መሰረት በፋሲሊቲ የተሟላ ስለመሆናቸው							
3	በአይሲቲ ማዕከል የተሟላ አገልግሎት ስለመስጠቱ							
4	የትምህርት ማበልፀጊያ ማዕከል በተቀመጠው ስታንዳርድ መሰረት በፋሲሊቲ የተሟላ ስለመሆኑ							
5	የስፖርት ሜዳ /ሁለገብ/ ስለመሟላታቸው							