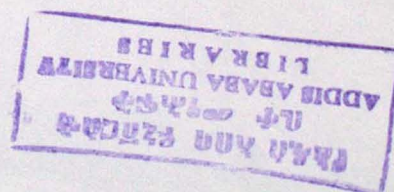


**ADDIS ABABA UNIVERSITY
SCHOOL OF GRADUATE STUDIES**

**UTILIZATION OF MATERIAL RESOURCES IN
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DEVELOPMENT CENTERS OF TIGRAY**

**BY:
BEKURETSION HAILESELASSIE ABRAHA**



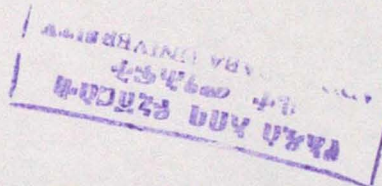
**COLLEGE OF EDUCATION
DEPARTMENT OF CURRICULUM AND INSTRUCTION**

JUNE, 2005

**Utilization of Material Resources In Implementing the
Curriculum in Skill Development Centers of Tigray**

A Thesis Submitted to the School of Graduate Studies

**Addis Ababa University
College of Education
Department of Curriculum and Instruction**



**In Partial Fulfillment of the Requirements for the Degree of
Masters of Arts in Curriculum and Instruction**

**By:
Bekuretsion Haileselassie Abraha**

June, 2005

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Approved by Board of Examiners

Chairman, Department
Graduate Committee

Dr. Dessu Wirtu

Advisor

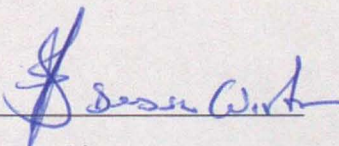
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External Examiner

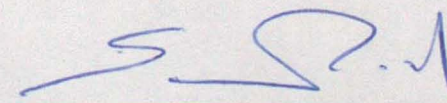
Amare Assefom

Internal Examiner

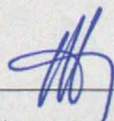
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ACRONYMS AND ABREVIATION

SDC -	Skill Development Center
SUPP. Staff -	Supportive Staff
Prof. Staff -	Professional Staff
ETP -	Education Training Policy
MOE-	Ministry of Education
WEO -	Woreda Educational Offices
REB -	Regional Education Bureau
TVET -	Technical Vocational Education Training
UNESCO -	United Nations Education, Science, Culture Organization
WB -	World Bank
UNICEF -	The United Nation Children's Education Fund

ABSTRACT

The major purpose of this study was to investigate the status of the utilization of material resources in the skill development centers of Tigray region, and make recommendations for improvement.

The areas of concern were the various activities pertaining to the utilization of material resources. These are the utilization and handling of material resources, the availability of appropriate personnel and guidelines, the contribution of material resources for the implementation of the curriculum, the professional training and experience of principals and supportive staff.

To this end, descriptive survey method was employed. Apart from interview of four principals and four woreda educational officers, data were gathered from 80 professionals, 20 supportive staffs. The data obtained from questionnaires were analyzed using statistical tools like, percentage, chi-square and t-test computer assisted Ms-SPSS program method.

The data from the questionnaire analysis indicated that the status of utilization of material resources in the skill development center of Tigray is low. In the study, from all the centers were considered, opinion, comments and suggestions were gathered from principals, professionals and supportive staffs through questionnaires.

Some of the major finding includes: the SDC are not in a position to utilize their resources effectively. Most of the principals and supportive staffs do not have the necessary professional training and experience on their position and leadership role, misused and destroyed material resources in the training, no inventory activities, the participation of professionals and supportive staffs in planning was low, the contribution of material resources for curriculum implementation was high, and late dissemination of budget from regional and woreda finance.

Hence, it is concluded that, in most cases, the utilization of material resources of all centers was the problem of the administrative problems. Depending on the results of findings, motivate and encourage professionals and supportive staff participation in resource utilization, improving the professionals experience by training, continuous controlling and evaluating have to be carried out, increasing the allocation of budget, and promoting capacity building training programmes for administrative bodies and supportive staffs were recommended.

CHAPTER ONE

INTRODUCTION

1.1. Background of the Study

One important factor for the successes of any organization is 'utilization'. Utilization involves planning, organizing and controlling of resources necessary for the achievement of corporate objectives. These resources include labor, capital, equipment, material and information. Among these, the material element has drawn the attention of many managers especially due to the aggravated problem of scarcity of resources and to the continuously increasing cost of materials. In the early days, purchasing was considered to be the single most function responsible for the appropriate use of materials. Later on; as management recognizes the importance of other material related functions, there was a move to consolidate these functions with purchasing and form and integrated materials utilization.

Knowing and understanding corporate objectives is indispensable in an organization so that contribution of each unit could be facilitated and specific goals for all levels and for each function could be derived and established. Material resource utilization being one of the basic functions of every organization, the principal goal of material resource utilization is providing quality service and the same time minimizing inventory investment and operating cost (Terison 1994:6).

Material utilization is a managerial activity, which deals primarily with the material resource. This material element was neglected for too long. Its significance began to grow when the introduction of technology and the development of scientific thinking brought about complexity in production as well as in the material involved. As a result of this, high production cost of labour declined where as material cost increased. From that time on wards, material, which was previously thought of as cheap, readily available and plentiful, gained increased importance (Dobler 1977:7). However, material's profound importance cannot be ignored in service organizations.

As Dobler (1977) indicated, during the early stage of material's popularity, the focus of most if not all managers were on the purchase of these materials rather than on the whole material cycle. Because of this, in many organizations, purchasing was the only representative department for the whole material flow. However, gradually many people begun to realize that purchasing goes beyond the simple act of buying and includes activities such as inventory utilization, receiving inspection, storekeeping, research and development, dispatching and traffic. As a result, in the 1950's a new concept known as materials management emerged as a major common discipline responsible for the whole buying process starting from acquisition of raw materials to the distribution of finished goods. Monks (1982:209) also explains it is the planning, organizing, and



controlling of the flow of materials, from their initial purchase through internal operation to the distribution of finished goods. Today, material resource utilization is a rapidly growing function in any type of organization be it a modern manufacturing business or the rapidly growing service sector. This is because profit, which is a crucial element for many firms, is highly dependent in addition to the increasing customer's demand, on the cost and availability of materials. Moreover, global shortage of resources, possibility of large saving from an efficient materials resource utilization activity and disruption of supplies caused by industrial relations problems have added to the importance of material resource utilization, hence guiding the attention of managers, towards this significantly growing function.

The main concern of education is learning. The material resources and physical facilities such as textbooks, educational technologies and administration are all means to enhance and facilitate learning. It is unquestionable that material resource can facilitate the quality of education. The utilization of materials in the teaching learning process has a long history.

Sacttler, (in Berhane, 1999) pointed out, curricular materials have started from the time when tribal priests systematized a body of knowledge and invented sign writing to record, preserve, transmit and produce information. Hence, systematization of the

body of knowledge by the tribal priests, were the only method practiced which leads to memorization. However, the practice in education immediately changed because of educator's recognition on the negative effect of verbal method of teaching.

At present, scholars agree that using varieties of material resources in their different combinations can promote student's concrete understanding.

As Newby et.al (1996) asserted that, materials are decisive for effective and permanent learning. Besides, it can promote motivation, interest and active participation in the teaching learning process.

Material resources have multiple importances in accommodating useful information and cultivating the mind in creative and practice oriented way. We are living in a time where the importance of material resource management activities is continuously increasing in utilization recognition and profit importance all over the world. Nevertheless in Ethiopia, many organizations including educational organizations have not yet understood the benefits that could be derived from efficient and effective material resource utilization. As a result, not only the concept of materials utilization, which has an integrated function, is not existent in these organizations but also material resource related activities are in general neglected.

Hence, in order to achieve the educational objectives, effective utilization of resources are unquestionable. When there is a

process of allocation of resources, due attention should be given on selection, organizing, allocating, distributing, controlling and evaluating process to minimize wastage. So, careful identification of resources and organization based on usage of maximum educational results is essential.

According to the Education and Training Policy of TGE (1994:98):

In order to promote the quality, relevance and expansion of education due attention will be given to supply, distribution and utilization of educational materials, educational technologies and facilities.

To bring quality of education, material resources and physical facilities are necessary inputs. Therefore, considerable focus has to be given by leaders in decision-making, planning, provision, using and controlling skillfully material resources and physical facilities.

For the purpose of changing the behavior of the learner specific resources can be applied for the transfer of some information.

The materials resources and facilities used in an institutional system are:

1. Classrooms, laboratories, workshops, libraries etc.
2. Furniture (desks, tables, chairs, chalk boards etc.).
3. Learning and teaching materials, which act as a source and/or channel from which a learner draws knowledge and acquires skills. These may include production technology, books, manuals, programmed instructions, educational media like radio, television sets, over head projectors, other audio visual aids etc and

4. Raw materials consisting of organic and inorganic materials, such as chemicals, any specimen of plants and animals etc, (Ayalew, 1992:7).

Material resources contribute to pupils understanding of the subject matter they are taught. They enhance the quality of education. To enhance the quality of education, learner's performance and to promote knowledge and skills, the application different materials is vital.

Good teaching and good learning means using varied methods and teaching materials, using different methods. Dall (1956:62) obviously indicated that, the quality of education and the effectiveness of instruction given in the classroom are determined by efficient utilization of materials. The wide use of materials is becoming a common practice in several settings; especially the complex nature of subjects in the skill development center of Ethiopia makes material resources the most important part of the teaching-learning process.

It is possible that, learning can take place with the help of teachers with out the use of materials. This would however, mean limited experience to trainees. The trainees can also learn from materials with limited help from teachers (Richard, 1986:15).

Harford, H. (1997:7) wrote that:

The talk and chock method of teaching curriculum subject where the teacher talks and the student listens, is gradually being changed to learning by doing and discovery methods. In these methods, the teacher creates opportunities for the students to find out

knowledge for themselves through doing experiment.

The author believes that the students who have the advantage of reacting to well selected and widely used materials, learn more effectively than do those who are provided with mostly verbal. Therefore, to make students creative, it is essential to utilize material resources effectively.

Based on the above points, to facilitate teaching and learning interaction in the institution, material resources should be identified and used by teachers to achieve its objectives needed. However, in most cases managers faced problems in meeting the constantly increasing social demands of education while resources are scarce.

1.2. Statement of the Problem

Material resource utilization has gradually been recognized throughout the developed countries. However, in great many organizations of developing countries, the material element is still neglected. In Ethiopia skill development centers, even though for some material related departments' (purchasing, inventory and storage) personnel, materials resource utilization was, and still is a critical function for the operation of the organization, it remains a mere supporting function for many other personnel and even managers within the organization.

When one speaks of resources it is useful to indicate that there are three types of resources, namely material, human and

financial resources. Some of the material resources include books, equipment, the institution physical plants, Machines and others. Therefore, it is very important to have a brief knowledge about these scarce and costly material resources and how to utilize them in the institutions.

Mbamba (1992:11-12) states:

The shortage of relevant educational material resources is a management issue that calls for the orchestration of policies that addresses the issues squarely, such policy guidelines can only emanate from highly trained educational managers.

The competence and ability of managers in the effective utilization of material resources can promote to successful functioning. Managers should create a mechanism based on their technical skills how these resources are utilized in all departments effectively. Moreover, active participation of personnel and teachers is mandatory in collaboration with administrative workers to bring effective result and reduce wastage of resources.

To identify problems that can reach lower utilization and wastage of resources in the institution, the skill, competence, and qualification of managers is important. With regard to the utilization of material resources the education and training policy ETP (1994) also pointed out the following:

Due attention will be given to popular participation in the production, distribution, utilization, upkeep, care and safety of educational materials, educational technology and facilities which are to concrete local conditions.

The above concept elaborates that education should be based on the environment where the pupils are living and can play a role

in minimizing the problem between theory and practice. Therefore, material resources are vital to the concrete learning. Accordingly, trainers in the SDC's are expected to utilize the material resources to facilitate the training function.

In our current situation, the uncertainty of the environment, the increasing number of students the increasing of costs, poor utilization, scarcity of financial resources, shortage of buildings and textbooks and other facilities are some of the major challenges to the society and school age children.

Moreover, the engagement of skilled managers is crucial to the effective utilization of resources. The manager should have the knowledge of coordinating, organizing, planning and evaluating the institutional resources based on responsibility.

Therefore, to influence people within and outside the institution knowledgeable and experienced leaders have to be employed for they play an important role in creating a conducive environment for the proper utilization of material resources.

1.3. Objective of the Study

The study has the following general and specific objectives

1.3.1 General Objectives

To examine the utilization of material resources in implementing the curriculum.

1.3.2 Specific Objectives

1. Analyze the current status of the utilization of material resources, identify the major factors that affect the utilization of those resources in the skill development centers of the region, and indicate necessary alternative solutions, which may help to minimize major problems.
2. Evaluate the utilization efficiency of the principals and administrative staff of the skill development centers with respect to the management of material resources.

1.4 Research Questions

The basic research questions posed to the research activities are the following:

1. How are the material resources utilized in the skill development center?
2. How did material resources contributed for the implementation of the curriculum?
3. Are there appropriate personnel assigned specifically to deal with effective material resources utilization in the skill development center?
4. Do professionals, supportive staff, and woredas' education officers actively participate in the effective utilization of material resources in the skill development center?
5. What are the factors that impede the effective utilization of material resources in the skill development center?
6. What measures should be taken to overcome material resources problems in the skill development center?

1.5. Significance of the Study

The study is hoped to create and arouse awareness among center managers, administrative personnel, trainers and teachers concerning utilization of material resources.

Thus, the significance of the study lies in that it could important for the following points:

1. Suggest alternative solutions to be used by trainers, teachers and administrative personnel to minimize their poor utilization material resources.
2. Create awareness among members of the development center to have individual responsibility for the resources and better use and encourage higher authorities, educational policy makers and planners to pay more attention to material resource utilization problems existing in the SDCS.
3. Provide not only top management but also other operating staff and managers, an understanding of how the material resources functions are being carried out in skill development center (SDC).
4. Provide some recommendations for inadequacies detected in the pattern followed by the material resources functions.
5. Contribute additional information and documents base for future studies.

1.6 Limitation of the Study

Some of the limitation faced in the study were; shortage of reference materials especially on topics related to the case of

Ethiopia; some of the respondents were not cooperative to fill the questionnaires on time and consequently the researcher was forced to go to the centers more than two times to get the questionnaires back. In addition, financial constraints and lack of means of transportation were challenges met by the researcher who, however, managed to tackle them as much as possible and to produce this manuscript at the end.

1.7 Operational Definition of Key Terms

Material resource- is any device that assists the teachers to transmit facts, skill, attitudes and knowledge, understanding and application to a learner such as charts, drawings, pictures, film makes-up, model, books, machines, school facilities and buildings etc. intended to facilitate learning (Wattich and Schuller, 1962:430).

Utilization a systematic effort to utilize fully and economically the competencies, time, and energies of personnel to the utmost instructional advantage (Castetter W.B., 1962: 98).

Skill Development - is a process of teaching learning trainers achieves ability and knowledge through practice (Good, 1965).

Center - is an institution practice given to the trainees and situated in a specific area for production (Good, 1965).

1.8 Organization of the Study

In order to carry out a systematic investigation, the research format of this study is divided into various topics and sub topics. It consists five chapters. Chapter one deals with introduction, statement of the problem, its significance, limitation of the study and definition of terms. Chapter two deals with the review of related literature. The methods are dealt with in chapter three. Chapter four pertains to the presentation and analysis of data. Chapter five deals with the summary, conclusions and recommendations of the study. Finally, a list of reference materials and the questionnaire that was used in the study were attached at the end of the paper.

CHAPTER TWO

REVIEW OF THE RELATED LITERATURE

This chapter deals with review of the related literature. The points dealt within in this chapter are: material resource utilization, classification of material resource, the function and utilization of material at school level, physical facilities, maintenance of material resources, the utilization of material resource in Ethiopia.

2.1. The Meaning of Material Resources

An organization exists to fulfill the objectives for which it is established. For the success of organizational objectives, the availability of material resources is mandatory. The term material resource has been defined in a variety of ways. It refers to all materials that are used in the institution for the purpose of teaching and learning as described by the following scholars. According to Durbin et.al (1989:4) material resources are the means through which organizational activities, production service and satisfaction ends are attainable. Organizations take input or resources such as labors, raw materials, money, machine and transforms them in to outputs, products, services.

UNESCO (1984:16-17) also defined that material resources are the media of instruction used for training and teaching all

subjects, equipment for teaching technology and vocational training.

As Mbabama (1992:89) also stated, material resources are any items that are designed, modified and prepared to achieve the objectives of an organization. A resource, which is vital to any social organization, is the material resource.

Material resources include all necessary supplies and equipment, which are very important to maintain organizational services. Material resources include land, building, furniture, office or other equipment, machines, computer etc. (Arora et al: 1980:15). Thus, the definitions imply that material resources can provide an opportunity to learn more about a given fact and skill and thereby contributing to the development of meaningful concept.

2.2. Material Resources Utilization

A provision of available resources and utilization is required to attain its desired goals for any educational organization. Particularly, this might include human resource, material and financial resource and time resource. Among these resources material resources is of one importance factor for the achievement of any training institutions. It is a source of strength and helps to reach the goals of the training institutions [Aggarwal 1995:395].

Sundareson (1998:105) defined material resource utilization as the function responsible for the coordination of planning, sourcing, purchasing, moving, storing, inventory and controlling

materials in an optimum manner so as to provide a pre-decided service to the customer at a minimum cost.

Good material resource utilization can act as a source of information from which a trainee may acquire knowledge and skills.

In support of this UNESCO (1984:113) wrote as follows:

All material resources may be used in centers establishments. Hence, the resources should be used on appropriate occasion. Optimum use of material resources implies that problems of maintenance, training, follow-up, and evaluation have been solved.

Wittich and Schuller (1953:28) state that material resources are tools and their resources must be used within and along with the pattern of training. They can be chosen wisely and used effectively only if teachers are intimately familiar with their individual, unique advantages and the correct method of using them.

These material resources should be utilized only because they have inherent advantages over other means of training in a given situation. Using variety of material resources in the training serves different purposes. According to Brown (1985:125-126), utilizing material resources has the following purposes:

1. Convey a concept or simple succession of facts.
2. Reinforce and supplements what has already been learnt, or presented in a practice way.
3. Stimulates interest and activity.

Therefore, the availability of adequate and competent trainees determines what the institution look like on its proper utilization of material resources that could have strong positive impact on the training system.

If material resource is utilized properly, then it will guarantee the attainment of planned goal. That is, it tries to show that having large amount of material resources require effective and successful utilization. Otherwise it will lead to failure of the organization that waste effort and energy without value. Hence, management has to play a vital role in the effective utilization of material resources (Ibid).

2.3. The Development of Material Resource Utilization in Schools

The schools' material resources utilization has followed the evolution of the general school administration practice, but also has its own unique characteristics.

The earliest manifestation of school material resources utilization occurred outside of the professional administrative position of the time. According to Condil et al (1984:7), in the earliest American superintendency, material affairs were typically handled by laypersons outside the school. In the early years of the 20th century, considerable interest was generated in "professionalizing" this area of utilization. During that period, some organizations and educational associations were also established to upgrade the performance and professionalism of school administrators concerned for material resources

utilization. Through time, more or less managers with professional training were employed. This embraces education-oriented administrators in the field of management. Moreover, special training in the field of school administration and material resource utilization were started in order to perform those functions. At present school material resources utilization function is observed as an integral part of the school function (Hoyel and McMohon 1986:41). However, because of the varying size of the school systems, the complexity of the educational programs etc, there is a considerable variation in the nature and position of school material resources utilization function.

2.4. Classification of Material Resources

There are different ways of classifying material resources.

Material resources can be classified into two groups fixed and raw materials. Fixed assets are durable properties, these materials can live a relatively shorter life, usually one or less than two years (Stoops et al: 1981:163). ??

Economists group the material resources into 'raw material resources' and 'capital resources' (Certo, 1986:15). In terms of this grouping, raw material resources are ingredient acquired to be used directly in the manufacturing of products or services, whereas, capital resources are the machines an organization uses during the manufacturing process.

Technology may be also included in the category of material resources. Technological resources consist of patterns and

processes that relate to both production and other services (Dorbin, etal 1989:6). Technological resources are used effectively when matched with the organization's human and financial resources.

UNESCO (1984:64) classified material resources as follows:

- A. **Software** - items that are renewable overtime such as textbooks, films, and computer programs etc.
- B. **Hardware** - items lasting for longer periods such as TV sets, overhead projectors etc.
- C. **Consumable** - items devoted for immediate use and which require immediate replacement such as stationary, chalk etc.
- D. **Durable** (non-consumable) - items serving for relatively longer periods such as buildings, equipment, furniture etc.

Therefore, the hardware apparatus, and/or equipment is used for educational purpose and the software programs, books, material, are used in the training process. Another educator Shaw (1992:64) classified material resources as:

- A. Those that are produced on a large scale by industry for needs wider than those of training in education.
- B. Those that are designed specifically for educational training for the market and therefore produced on smaller scale.
- C. Resource that are produced locally within the training institution or by local associations using raw materials from the environment and appropriate craft techniques.

Material resource in education includes renewable long-lasting and immediate use items. Each item is used for specific objectives and the integration of all items can help to promote the education process.

UNICEF (1983:101) stated on the above issue that:

Next to teachers material resources remain the most costly items required for a minimum standard of education and they are critically short in supply in the institutions of poor developing countries. Therefore, it is necessary for the institutions that materials to be classified and managed properly. Principals must plan and control to ensure the effective utilization of those scarce resources and allocation of finance to every item.

2.5. The Importance of Material Resources

The process of teaching learning can be improved using various material resources. Each resource has its own function in a particular given situation. UNESCO (1984:31-32) stressed the following merits of material resources in training:

- Improving the quality of training in the existing center. The use of machine tends to render the activity of the teacher and trainees more efficient.
- Renovating and modernizing training process by extending material services to groups not reached by the modern system of production. Therefore, material resources needed for effective training by avoiding wasteful duplication of effort.

Richard (1986:15) also discussed that:

Material resources can have an active role in the transfer of knowledge and provide different types of motivation to the learner. They are selected not purely to stimulate interests and motivate learning, but as a structured and integral approach to training.

From the preceding explanations it is possible to recognize that material resources are useful in that they help teachers to make the training process complete. Because, first hand information is impossible in many training situations, important segments of reality can frequently be brought into the classroom by means of material resources. These can help to make the training situation more real, life like and interesting to the students. Furthermore, students can easily acquire the desired knowledge and skill in clear, meaningful and effective way.

To sum up, one can say that utilization of material resources has a critical function, for it contributes largely to the success of any organization. Each material resource has its own strengths and weaknesses; however, an integrated approach in the utilization of resources is essential for success, especially in today's competitive environment in which the scarcity of material resources has become more apparent and more complicated than ever. Therefore, it is high time for managers of material resources utilization and functions to do some extensive planning and to seriously work towards realistic material resources utilization and cost reduction programs.

Material resources utilization is inseparably tied with many administrative measures. Therefore, principals have to know what material resources are required in what amount, how they would be obtained, how they should be allocated to achieve and what objectives must be clear to the society inside and outside the institution.

2.6. The Major Function of Material Resource at School Level

2.6.1. Planning Material Resources

Like other social systems, school systems are engaged in material resources tasks. So, in order to attain their predetermined objectives, institutions require money, material resources, trained and motivated human resource. Even though the presence of material resources, qualified and motivated teachers are necessary for organizations, training centers, schools or business firms that have material and financial resources might fail due to the lack of proper utilization.

Effective and efficient utilization of material resources in education system requires the professional ethics, knowledge and skills as well as the interest or dedication to work and control.

As Terry and Franklin (1988:4) stated, the main goal of any organization is to use its material resources to the great extent feasible in order to achieve its objectives. Therefore, the concerned authorities must have great consideration for raising

social awareness of their workers towards effective utilization of resource.

Actually, effective and efficient utilization of the material resources is influenced by many factors like the willingness and caliber of educational leaders and by the process is that take place during purchasing, storing, buying and controlling of the material resources. So, great care is needed for the efficient utilization of the available material resources in the organization. School material resource utilization as a discrete function of professional school administration is a recent phenomenon. However, it is becoming an integral part of the general educational management function (Knezevich, 1969:433). To explain this, educators with various points of view have first sought to analyze the utilization process.

Terry and Franklin (1988:4) have stated a meaningful taxonomy that are also applicable for educational settings. They explain utilization as a distinct process consisting of a series of related or integrated activities leading to the accomplishment of organizational objectives. These series of utilization activities, according to their explanations are planning, organizing, budgeting, acquisition and support, allocation of resource, controlling, maintenance and operation etc.

Knezevich (1969:433) also stated that, the school material resources utilization functions include activities such as planning, handling funds, controlling inventory and maintaining

property. Detailed planning entails thinking about a great many factors related to resources and their utilization, teaching materials, facilities, equipment, supplies and logistics, construction and maintenance etc. to ensure their timely availability and proper utilization (Condil et.al: 1984:9-10).

Skill development training arrangements are important in planning. Since general education is different from technical skill development training, separate programmes must be given in order to trainees graduates for work. Finally, different curriculum, time allocation, facilities, instructor's qualification, trainee's entry requirements and funding levels must be consider in planning material resources.

Planning as a mental process based on available mass of fact and future possibilities (Arora, 1999: 17). It is a basic function of material utilization. It requires the use of trained knowledge, imagination, for sight and sound judgment.

According to Arora (1999:18), the merits of planning of material resources are:

- It gives direction to activities in the material resources and thus every thing becomes purposeful;
- It focuses attention on objectives;
- It helps to offset changes and uncertainty;
- It facilitates control;

- It helps in economic operation as the material clear-cut idea about targets and goals; It takes care of the growth of organization operations.

Planning material resources includes:

- Forecasting material resources;
- Developing the ground work by carrying out an orderly investigation of materials;
- Estimation the future material;
- Refining the forecast process is desirable for better future planning (Arora 1999).

Gopalarrishnan and Sundareson (1998) identified the following guidelines, which can be used for effective and reliable material resource planning.

- A. In working out the horizon for planning purpose the longest lead-time that are anticipated must be taken into account so that they are adequately covered.
- B. Operating environment of the organization must be carefully analyzed. Thus, if the demands fluctuate, they will affect the planning system and this should be taken care of.
- C. When the planning horizon is short, if more plans are made in a year, the materials plan will be more reliable. Hence, planning should be efficient to achieve the goal with efficient use of resources.

Generally, planning in schools helps that the resources needed for educational activities are secured in the right place at the

right time so that programmes can be implemented successfully. This planning process starts during the early phase of educational programmes and continues as long as the programme lasts. Finally, well prepared, to organize material resources, stimulate them, coordinate units and sub-units and ensure achievement of the purpose and appraise the results.

2.6.2. Budgeting of Material Resources

By the requirement of the organization material budget can be prepared both in terms of quality and money.

As Gopalakrishnan and Sundareson (1998) stated, the main purpose served by the budget are:

1. The availability of materials to be utilized must be known so that one can plan purchasing and undertake long term contracts which take into account price trends and other factors related to market situations.
2. Recording the price on which the budget was formed and to compare it finally with the actual price so that controllable and uncontrollable elements are clearly observed.
3. To help the financial utilization of materials by clearly stating the cash requirements for the budget period, (usually a year) and the most important element of budgeting is the review and control aspect. The control aspect should include corrective action with regard to expenditure. Where the budget target has been exceeded appreciably the budget must be also adjusted from errors made in its compilation.

Periodic statements should be prepared and the budget should be compared with actual so that major variances can be highlighted for action.

Moreover, Deighton (1971:100) also discussed that, one of the most crucial resources for training is money. Constructing buildings, erecting machines and employing teachers and other personnel for the purpose of training are not enough; rather adequate financial allocation is needed. He further elaborated:

After any technical skill training programme is underway and the required equipment has been purchased, it is still necessary to produce an annual equipment and supply budget. Annual equipment and supply budget are required to replace or regain equipment, restock expenditure items, and purchase new resources required by technological change.

It is important that material resource department's personnel be familiar with financial terms and conditions in order to give justifications for expenditure to be able to prepare cash flow, and to effectively control material costs.

By controlling organization's assets and by keeping accurate records of stocks, the department's personnel can provide factual information to be included in financial statement. They also contribute to cost reduction program by minimizing material damage and material losses. They also facilitate correct payment for suppliers by keeping accurate records on incoming materials. However, receiving and stores need also the support of finance department especially regarding money to be used for equipment, personnel and building, training space (Monks 1982:186).

The relationship that exists between purchasing and finance is unique in that finance like purchasing strives to acquire the required material at a lower price. This relationship could further be enhanced if finance always makes prompt payment and hence enables purchasing to maintain good relationship with suppliers. The level of inventory that should be maintained is a sensitive issue on which conflict usually arises. Finance puts pressure on material resource management to reduce inventory levels so that cost could be minimized. On the other hand, marketing encourages high inventory levels that could enable a smooth delivery of goods to customers. Therefore, an effective inventory management should decide on the optimal level in order to reconcile the interest of both departments.

Knowing and understanding corporate objectives is indispensable in an organization so that contribution of each unit could be facilitated and specific goals for all levels and for each function of every organization, has its own clearly defined objectives prepared in line with corporate goals.

However, these objectives are developed from different material functions, therefore, they are varied and seem to be conflicting.

As Tersine (1994) summarized, the principal goal of material resource utilization is the provision of quality service and at the same time the minimization of inventor investment and operating costs.

On the other hand, Alijan (1982: 19-25) also stated that material resource utilization must be well organized. Organization of material resource utilization heavily depends on the nature of operating activities of the firm. In building up an effective and efficient organizational structure, two important areas should be worked on.

- The position of material resource utilization department in the organization and the careful selection of its personnel.
- The internal structure of material departments.

By bringing material related functions together, organizations do not only achieve effective communication and coordination among them but also reconcile their conflicting objectives and hence effectively control material resource problems and costs. The integration of material resource functions is the basis for the materials utilization concept within the organizational structure. Material resource utilization's objective always being the same, their organizational structure and titles may vary from one organization to another depending on the nature of operating activities and the specific needs of the organization. However, besides a good organizational structure, it also needs competent and highly motivated persons who are capable of taking responsibilities.

Regarding their internal structure, material resource utilization is usually composed of purchasing, inventory control, receiving,

stores and material handling and traffic functions. A strong interdepartmental relationship exists among these functions.

2.6.3. Organizing Material Resources

Organizing material resources are the function to the creation of duties and function to achieve the objective of the organization (Aroral 1999:89). The institutions are to be organized in duties and functions. They are to be defined to determine activity, authority relationship so that the institution functions smoothly. Regarding this issue, Chaube and Chaube (1996:302) described that institutional organization have to focus on:

1. The qualification of head master and assistant of the institution, their duties and their time table follow-up of material resources and other inputs.
2. Utilization of co-curricular activities discipline and control the institution building, furniture, classrooms, libraries at all the institution compound.
3. The drawing up of the syllabus from the point of view of resources.
4. Periods of work, checking out and implementation of plan.
5. The scheme of admission progress in relation to their resources.
6. The mutual relationship between the departments in the institution. The utility of the material resources depends on its organization. Hence, it is the institution society duty to organize in the best possible manner.

2.6.4. Acquisition and Supply of Material Resources

Acquisition and supply of material resources is the major factor next to planning. It refers to the determination and definition of types and quality of materials needed for the effective implementation of curriculum (Mbamba, 1992:89).

Hence, according to the above idea, the determination of what is required is primarily a responsibility of the user departments; from this it follows that actual purchase requisition may originate where the need arises. The materials needed for every department has to be clearly understood and should be decided in quality and quantity.

Deighton (1971:99) regarding the acquisition and supply of material resources stated that, "Technical programmes must have enough resources and facilities that are functionally efficient." So, by its very nature, technical programmes require more material resources expenditure such as textbooks, machines, raw materials, audiovisual devices etc.

In general, acquisition and supply process requires integrated effort of the user, choosing of detailed technical specifications and selecting appropriate materials from a wide range of available materials within the required time.

2.6.5. Allocation of Material Resources As Mbamba (1992:102) explains, allocation of material resources is used to

satisfy the demand for materials and service required by each department.

Besides, he further stated that, material resource allocation criteria guide decision to various programs and administrative sectors at the national, regional, district, or institutional level thereby discouraging unnecessary imbalance.

As Aggarwal (1997:204) said, "Educational institutions including technical skill development schools needs to erect buildings and maintain resources and equipments for the implementation of the programme."

For instance, adequate ventilation and waste disposal mechanism are required to protect the dust, fume, poisonous gas etc. All these material resources need proper allocation if they are to be utilized effectively.

UNESCO (1973:79) also pointed out that, the availability of training material resources, that is both raw and instructional materials are said to be the determining factors for quality of training. Institutions must have enough amount of machines, equipment, tools, instruments, raw materials and other necessary training materials in their workshops and laboratories. Therefore, for economic requirements, before the actual building plans are commissioned, detailed requirements of space for classrooms, drawing rooms, laboratories, workshops, stores, administrative offices and welfare facilities should be established according to the trainees to be served and the specialties to be taught.

In this regard, the problem of deciding which portion of the total demand for goods and services will be met is said to be an allocation problem. Allocation is the attempt of a manager to distribute materials to different departments equally as much as possible effectively and efficiently.

2.6.6. Proper use of Material Resource

Acquisition of resources unless supported by some proper use, it will lead to inefficient utilization of institutional resources. To minimize this problem the principal together with the teaching and non-teaching staff should create a guideline to serve a mechanism in the effective utilization of materials. Therefore, proper use of material resource is refers to the utilization of material resources effectively and efficiently to accomplish the objectives.

Material handling can be defined by Gapalakrishnon and Sundareson (1998:205) as the function dealing with the preparation, placing and positioning of material to facilitate their movement or storage. However, poor material handling may result in delays leading to idling and wastage of equipment. Therefore, principals must create conducive atmosphere for active participation of the community both inside and outside the institution. In this connection UNESCO (1984:101) pointed out, even if the essence of teaching still lies in the direct relation

between the teacher and the learner, the role of materials and equipment is growing more and more important in education.

UNICEF (1983:15) also recommended that, material resources are designed, modified and prepared to assist the training activities. They are produced according to specific age and level of institution. e.g, textbooks, reference books, teaching guides, manual programs of institutions, audio visual aids, TV, radio, projector films, machines, computers etc. Since material resources are scarce they need proper utilization within and outside classroom situation. Accordingly costly resource need to utilized properly for financial resources are scarce.

Next to teacher's textbooks and other teaching materials remains the most costly items required for the minimum standard of education and they are critically short in supply in the schools of the prior developing countries. As the above statement signifies that material resources are costly, they must be distributed and continued effectively to insure its proper utilization. In light of this, the school principal together administrators should make sure it that scarce material resources are used and administered according to the set rules and regulations by the members of the school community. In addition, school principals should open their for information with regard to resources acquisition, allocation, distribution and application. The availability information of material resources will help to set a certain control mechanism to be applied by the school community.

2.6.7. Controlling Material Resources

As Ayalew (1992:102) indicates, controlling of material resources is a process of checking the operation of the initial plan or production, allocation, distribution and uses of material to effect educational interaction. It generally deals with the determination of the effectiveness and efficiency of provision of the material and use in the attainment of educational objectives.

Barker (1988:302) also explains, controlling implies measurement of accomplishment of tasks, events and activities against established standards or plans. It also implies correcting of deviations from plans to ensure attainment of set goals.

UNESCO (1983:14) viewed, resources are essential inputs for running instructional objectives. They need a continuous control. This will help in providing information, ideas, methods and valid data required for relevant decision-making. In this connection UNESCO (1983:14) states that controlling and evaluation has the following importance:

The function intended to assure the efficient use of scarce resources, measures effectiveness in achieving the objectives and confirm the continuing relevance of scarce resources of changing circumstances.

To control the resources in the school a kind of evaluation it is possible to use both kinds of evaluation, namely the formative and summative evaluation. They are the ones to be used by the school for it is done every time. UNESCO (1986:14) asserts that

"formative evaluation" is done periodically to explore experiences to data in order to permit managers to sharpen the definition of the purpose and to formulate available strategy for achieving the desired goal while summative evaluation attempts to measure progress towards the objectives of the program.

As stated above, school principals need to orient the concerned administrators, bookstores, and teachers to exercise a periodic checking of resources by way of evaluation and submit information to the school administration about the condition of the teaching learning regularly. This may help the administration to identify and discriminate the conditions and utilization of resources.

This practices of controlling help to the school administration to make decisions and to formulate regulations and to alleviate the prevailing problems. It also helps to set a good inventory system and to stipulate the kind of time.

Hence, controlling is checking current performance against predetermined standards contained in the plans with a view to ensuring adequate progress and satisfactory performance and controlling material resources and physical facilities is the function where by a principal make sure that what is intended is done.

2.6.8. Some Mechanisms in Effective Utilization of Material Resources

Mechanisms that can be applied for proper use^{use}~~a~~ge can facilitate the teaching and learning activities. As Chaube and Chaube (1996:155) stated, proper usage of material resources includes:

- Rules and regulations of handling and managing resources.
- Determining the storehouse where they are carefully placed and thereby ascertaining the responsibility of the teaching and non-teaching personnel, the pupils etc.

Melaku (1992:4) describes the following list of jobs descriptions and work schedules which in this connection require the development and application of certain mechanisms that promote the effective utilization of material resources:

- a) **House keeping** - Activities related to cleanness, storage and the orderly arrangement of the various items that are kept on school provisions.
- b) **Mechanical/engineering** - Activities relating to climate control (heating, cooling, ventilating etc) and disposal of garbage and sewage.
- c) **Ground maintenance** - Activities relating to the care and upkeep of the building grounds, including the playground and parking areas.
- d) **Sanitation and pest control** - Activities relating to the disposal of garbage, hazardous materials, and control of pests.

- e) **Security** - Activities relating to the care and maintenance of building security equipment and opening and closing the school buildings and grounds.

Like other social systems, school systems are engaged in material resources utilization tasks.

2.6.8.1. Purchasing -The primary purpose of purchasing is implementing the work of other areas on the educational complex by procuring needed materials such as educational materials, supplies, furniture, equipment etc needed for the training. However, purchasing is not an end in itself, it can be coordinated with other phases of the activities. It involves the utilization of material inflow, from the establishment of the sources and shipping, through inventory and warehousing to the ultimate delivery at educational institutions (Mohsin, 1981:21).

Proper quantity and quality of educational supplies, equipment and other facilities at the proper time is very crucial for institutions. Concerned personnel and administrators should develop comprehensive and specific job descriptions for their purchasing department/personnel.

According to Condoli et al (1984:209), there are five fundamental functions for purchasing department personnel in institutions:

1. To plan a program of material, equipment etc. Procurement that will optimize the output of the institutions;
2. To maintain continuity of supply to support the teaching-learning process;

3. To avoid duplication, waste, obsolescence of materials and equipment;
4. To maintain standards of quality in relation to suitability of use;
5. To acquire materials and equipment at lowest cost consistent with quality and service required.

2.6.8.2. Inventories - Institutions system must strive for maximum utilization of material resources and prevent breakdowns from the lack of necessary material supply.

The systems are required to keep complete and up-to-date records of the supplies. Inventories are kept in order to be certain that regularly used supplies and equipment are always on hand and that there is no over stocking or under stocking (Condoli et al, 1984: 219-220). Hence, compartments for efficient storage facility are needed. Because, compartments enables managers to know at all times which items need to be replenished and which already area insufficient supply.

Nowadays, inventory control is expedited through the utilization of a computer.

2.6.8.3. The Utilization of Equipment - Equipment refers to larger and more durable items, which are not readily consumed. Hence, the community of the institution should protect equipment from being misused. Teachers can give instruction as to handle teaching materials, equipment and furniture in the training center, machines, library, and audiovisual centers and in the workshop.

2.6.8.4. Storing, Requisition and Delivering - It is a common practice for institutions to have available supplies of basic items, teaching and other materials and equipment. The supplies are delivered to the institution upon receipts of written requisitions processed and accounted for according to the policies of the institution or other concerned bodies (Condoli et.al: 1984:225).

In the institution the principal has the responsibility of keeping stocks of supplies available. There should be a good faith and cooperation between principals, teachers, and students regarding the utilization of teaching materials and all other facilities. The importance of well kept, workable and effective equipment is obvious. Therefore, principals and other higher authorities has moral as well as legal obligation to see it that all equipment is in good repair.

2.6.8.5. Maintenance and Operation - Burrup (1982:299) indicated that, maintenance is concerned with these activities to keep the materials of a system in proper condition. One of the roles of institutional management is the maintenance and operation of the plant, facilities and equipment. All the materials, expensive and complex machine equipment, vehicles and buildings must be maintained and kept in current operational status.

According to Condoli et al. (1984:236) explained, the major types of maintenance activities required in any system are:

1. Preventive maintenance;
2. Periodic maintenance;
3. Recurring maintenance; and
4. Emergency maintenance.

The above divisions may overlap. Therefore, to ensure adequate maintenance service a combination of two or more of them can be made.

2.7. Physical Facilities

According to Beyenon (1997:56), capital investment in education account for the second largest share of the education budget. Expenditure for land purchase, building construction, furnishing and maintenance of all the above typically account for more percent of education expenditure. Physical facilities of the school plant that enhance the teaching-learning or training operation include many things. Mbamba (1992a) classified physical resources in to school plant and local environment. School plant includes classroom, workshops, laboratories, offices, recreational and sport field etc. and local environment also includes natural features like rivers, hills plains, valleys, rock, group of plants or animals etc that are deliberately used by teachers to provide educational support to facilitate the teaching-learning interaction.

Educational buildings as well as the life that surrounded them and the furnisher inside them are infrastructures which are

designed to render certain specific that are vital to carrying out the teaching-learning process effectively.

Kapoor (1988:205) stated that, the main objective of designing school buildings is to create a suitable environment for teaching and training, the building must meet educational requirements in respect of curricula, size of groups, method of training etc.

Besides, UNICEF (1983:18) viewed that, school plant and its environment, if properly organized and used, could have a positive impact on teaching learning activities. The physical facilities that enhance the training activities are:

1. The school plant that comprise as classrooms, laboratory, library, offices, audiovisuals, recreational and sport filed.
2. The school physical environment which includes the rivers, hills, plains, valleys, rocks, roads, buildings etc.

This physical facilities if utilized properly, will provide the necessary information that help to facilitate good training.

At the same time, building should meet the physical and psychological needs of the users at the minimum possible cost. Furniture and fittings should be of proper size and suitably located where by psychological demands for adequate illumination, ventilation and thermal comfort have also to be taken in to account.

2.7.1. The School Site

The school site should not be located near place of amusement, travelers, dancehalls, cemeteries, and free from air pollution, noxious gases and far from sources of noise and danger such as heavy traveled high ways, airports and heavy industries (Chambe and Chambe, 1996 258).

Therefore, the school site must provide space for the building. Outdoor facilities, rooms and equipment within the building are part of the plant, and together they either facilitate or impede the operation of educational programs. So, the school site should be neither very far from nor very near to city. It should be situated in a healthy environment.

2.7.2. Maintenance of Plant

As Melaku (1992) indicates, plant maintenance refers to the require, replacement and up keep of the school plant and equipment so that efficient service can be rendered. Operation and maintenance are closely allied functions, and a successful program cannot exist with operation and maintenance functions being performed exclusive of each other.

Maintenance management includes the difficult task of getting at any appropriate level to provide a reasonable budget for maintenance and to spend the allotted fund. When they fail to do so buildings run down even more quickly, community support for education wanes, attendance decreased (Beynon, 1997:256).

The reason why continuous maintenance is needed to school material is unlike other materials, school materials are frequently used by many people at large throughout the year and treated by young children. Hence, they need good care and wise use.

Moreover, Melaku (1992) explains on this issue that the effectiveness of school maintenance programs largely a function of three factors:

- a. The availability and quality of operation and maintenance personnel.
- b. The quality of the school facilities, equipment and site,
- c. The availability of equipment and resource

2.7.3. Types of Maintenance

Maintenance program is an essential activity that school management should give due attention in planning and budget allocation. Regarding to this Melaku (1992) describes the successful school maintenance program normally pertains to three interrelated services.

- a. Scheduled or regular maintenance;
 - b. Non- scheduled or emergency maintenance;
 - c. Preventive maintenance.
- Scheduled or regular maintenance are performed on periodic basis and on specific equipment or facilities.
 - Non- scheduled or emergency maintenance are performed on a regular basis as requested by the school personnel

- Preventive maintenance is performed on a continuous basis by school personnel.

A successful preventive maintenance program is a reflection of the emphasis placed up on it and the training to the school employee.

Beynon (19970: 306) indicates, the usable lifespan of good furniture is in the range of five to ten years. Shorter periods of use are usually due to minor damage that goes unattended.

Since school administrators lack authority to dispose broken machines and furniture it is piled in a store room, a classroom outdoors behind the classroom block or, if the building has a flat one, on the roof.

Generally, preplanned ways of performance helps schools to realize:

- a. Which item and facilities are to maintained;
- b. What kind of maintenance will be applied in each case;
- c. How this maintenance works is to be organized. In addition to these, frequent inspection of material resources and physical facilities is an important factor.

Material resources are any things in the institution that are to be utilized or organized for use in the process of skill development. In training, the teacher includes the kinds of material resources needed for training. Since, resources are part of training process, they must be given due consideration for their utilization.

2.8. The Utilization of Material Resource in Ethiopia

One of the crucial aspects that managers should take into consideration is the determination of the amount of material input needed to run an educational program. In Ethiopia, the material supply of the educational sector is mostly from the government with some assistance from international organizations and some other donations. Besides, institutions may have some other sources of income and are encouraged to generate fund from different programs and activities.

2.8.1 Sources of Support

1. The National Support - In the past decades in Ethiopia some efforts were made to supply schools and others educational institutions with teaching materials, facilities, equipment and educational technologies. However, the supply of material resources inputs are said to be inadequate. Hence, there is an increase in educational expenditure and wide gap between the unmet demand and the available resources (TGE 1994).

2. Local Support for Education- As Ayalew (1989:43), Sadker (1988:398-399) indicated that geographical and economic inequalities for rural and urban schools cause differences in the local support school get. The local support the institution gets may have different forms, i.e. in financial terms, material donations, and technological inputs.

3. Internal Income of Institutions - As Seyoum (1988:11)

stated:

In the early 1940's and 1950's when students enrollment in elementary and secondary schools remained relatively low, the schools were provided with whatever they need by the MOE. Consequently, schools had hardly any need to create contact with community

Nevertheless, because of the increase of student's number and size of schools in the past 30 years, the support for schools given by the government was decreasing. Hence, this objective forces institutions to generate income from other sources. Some of the sources from where institutions secure their inputs are:

- a) Student registration fee;
- b) Growing vegetables for sale;
- c) Produce furniture for sale;
- d) Evening class program;
- e) Income from co-curricular activities;
- f) Service fee etc.

To sum up as has been stated above, material resources include items that enable schools to design, modify, prepare and carry out training programs. Therefore, they should be produced and put into operation in relation to the age level of the learners/trainees as well as the types and objectives of the training.

2.8.2 Research Implications on the Contribution of Material Resources for Curriculum Implementation

Not only well trained teachers and personnels are essential in creating effective teaching learning process, but also material resources can play a great role in the educational system for resources can hinder or promote the training activities. For instance, where material resources are adequately found teachers are interested to teach and the learners are also encouraged to know. Hence, material resources have a maximum role to enhance the curriculum implementation process.

Many research findings verify that the utilization of material resources facilitate the training process. The studies on the contribution and utilization of material resources to improve students learning made in developed and developing countries by different scholars. Among them Lockheed et.al (1991:49-51) reviewed some of the studies in developing countries.

As Lockheed et.al (1991:49) stated that, material resources should be used constantly in the education process to avoid instability and interruption of trainings.

The above idea elaborates that, the education system will be seriously affected when there is a shortage of material resources. According to Mohon (1986: 205) because of economic problem the educational program of most developing countries is suffering from inadequate material resources. Demand is out stripping



supply and classrooms are overcrowded thereby leading to poor teaching and learning process.

Thus, the need for material resources in institutions increases from time to time. However, countries are not able to provide access resources and fair budgetary allocation. The type and quality of material resources allocated for the education process determines for the implementation of the curriculum.

One of the most vital contributions of material resources is to maximize knowledge and skills. It can create a good learning environment in which learners actively participated in the learning process (Heinich et.al, 1994:24).

The contribution of material resources is making the learners to be actively participated in learning instead of being passive learners. They can provide significant gains in informational learning, thinking and reasoning, better assimilation and personal growth and development.

Another research findings, for instance, Stolovich et.al (in Berhane 1999: 54) have indicated that material resources, when properly designed and applied in the teaching learning process, can have the following pedagogical uses: They,

- Stimulate the learners interest;
- Facilitate active learning;
- Encourage creative thinking;
- Over come the limitations of time and space;
- Make learning relatively permanent;

- Create the access of invisible realities;
- Relate theory with practice;
- Provide direct interaction of students with the reality of social and physical environment.

Moreover, Kicran et.al (1992) stated about some of the contribution of material resources as follows:

- Promote the quality of teaching;
- Make computation tasks on practical value;
- Broaden the base of student understanding;
- Give students an immediate, intuitive grasp of certain idea;
- Give feed back;
- Maintain student's interest.

In conclusion, effective and efficient use of resources in education process requires the professional ethics, knowledge, skills as well as the interest to work. It is determined by the caliber of the people who use it to achieve its objectives and it enables teachers to use the time effectively and efficiently in order to attain the intended curriculum. Besides, it can also guide learners with rich and real experience that facilitate their skill.

2.8.3. Factors Affecting Utilization of Material Resources

Quality in organization is not solely a matter of qualification or even of professional preparation. It is a compound of many other components. Generally, material resources such as textbooks,

equipment, appropriateness of classroom, etc. have great impact on the teaching- learning process. Others have suggested some constraints which can impede the training has to do with the lack of proper utilization of material resources. In order to overcome this problem the school has to make use of the available material resources.

Koumi 1994, Nkuune, 1995 : Aggarwal, 1996 classified people to work effectively to be done by the school principal the factors that affect utilization of material resources in to three.

A. **Material factor** - include ineffectiveness of the materials like unplanned utilization, when the materials resource used without a definite purpose.

B. **Political factor** - includes individual feelings of insecurity with unfamiliar utilization and teachers and student factors include, their preferences, perceptual students factors that influence utilization. Student's factors include, their preferences, perceptual difficulties, experience and background, interest, level of motivation, individual differences, physical disability and others. Like wise, teachers factors include their own skills, knowledge, attitude and preferences (Aggrwal , 1996 -159).

C. **Economic factors** - can affect the budget shortage of material resources. In his study.

All in all, Nkuuhe (1995:227) summarized the factors as follows:

- characteristics of the learner such as their experience interests and motivation;
- characteristics of the teacher such as person skills, attitude and performance;
- material resource factor in economic and political constraint and maintenance of the material.

Generally, the impact of material resources in the teaching learning process is great. Research findings of Kebede (1990) and Berhane (1990) also identify the following factors.

- Lack of training;
- Teachers' unfavorable attitude;
- Lack of financial and material support;
- Lack of sufficient time;
- Shortage of equipment and facilities.

CHAPTER THREE

BACKGROUND OF THE RESEARCH SETTING

Tigray is the regional state selected for the study. It is located in the northern part of Ethiopia about 777 k.ms north of Addis Ababa. It is bordered to the north by Eritrea, to the west by Sudan and to the east and south by Afar and Amhara regions. It covers more than 80,000 square kms. Towards the west and northwest the land slopes downwards to the dry low lands to Sudan. The majority of the population lives in the highlands.

According to Tigray Development Association (1999: 15) forecast, the number of population of the region is 3,532,546. The ratio of male to female is approximately 50:50. About 85% of the population resides in the rural areas, whereas only 15% of the population resides in the urban areas. The dominant religion in the Tigray region is the Christian Orthodox to which 81.4% of the population belongs. Other religions in the region include Islam with 18.4% of the population, Catholic 0.1% and others with the remaining 0.1% of the population.

The economy of the Tigray region is dependent mainly on subsistence farming with low productivity.

The administrative structure of the Tigray region is comprised of five zones and thirteen woredas (districts).

In the region, there are only five skill development centers. Hence, the study included four SDC's.

The skill Development Centers are widely scattered among the region, the largest distance being 230 kms between Mekele and Axum skill development center. Regardless of their locations most of the trainees who attend the training come from the surrounding rural areas. Adigrat skill development center is found 120 kms far from Mekele. Besides, Korem skill development center is also found South to Mekele about 160 kms.

3.1 The Research Methodology

The main purpose of this study was to examine the utilization of material resources in the above-mentioned centers and identify the major problems that hinder the utilization of material resources in the training. It also aimed to suggest some possible solutions that can be used to adjust the training process in the SDC's. To serve this objective, descriptive survey research method was employed, because it could help to identify the major problems and to examine the usage of material resources in implementing the curriculum.

3.2 Source of Data

Professionals, supportive staffs, principals and woreda educational officers were the source of data for this study through questionnaire and interview. The sources are very crucial to gather information and to set valid premises.

At the end, after the data were analyzed by using statistical methods, findings were summarized and recommendations were made.

3.3 Sample Population and Sampling Techniques

3.3.1 Sample Population

Axium skill development center, Adigrat skill development center, Mekele skill development center and Korem skill development center were the four samples incorporated in the study.

Among the professionals and supportive staff members 20% of them were taken from the total population and included in the study. The numbers of professionals were 80, supportive staff 20 were taken to fill the questionnaire. Besides, principals and woreda education officers were involved in the interview sessions.

3.3.2 Sampling Techniques

To select professionals and supportive staff respondents simple random sampling and available sampling techniques were used. In all the skill development centers after taking the total number of professionals and supportive staffs random selection was made. Woreda educational officers were selected by using purposive sampling technique. In line of this, to identify some of the problems and usage of material resources in implementing the curriculum, interviews were made with four principals and four woreda education officers.

Name of the SDC and sample taken

Zone	SDC	Principal	Supportive staff administrative staffs	Professionals	Woreda education officers
Central (Makelay)	Axum	M=4	M=2	M=19	M=1
		F=-	F=3	F=1	F=0
		Total=4	Total=5	Total=20	Total=1
East (Mibrakawi)	Adigrat	M=1	M=4	M=17	M=1
		F=0	F=1	F=4	F=-
		Total=1	Total=5	Total=20	Total=1
Mekele	Mekelle	M=1	M=3	M=15	M=1
		F=1	F=2	F=5	F=-
		Total=2	Total=5	Total=20	Total=1
South (Debubawi)	Korema	M=1	M=1	M=14	M=1
		F=-	F=4	F=6	F=-
		Total=1	Total=5	Total=20	Total=1

As can be seen from the above table 75% the respondents were males. Besides, all the principals and woreda education officers were males. This shows that female's involvement in the skill development centers in facilitating the training process and higher management educational program is low.

3.4 Instruments and Procedures of Data Collection

3.4.1 Instruments

The instruments used by the researcher was developed and constructed to gather data that have quantitative and qualitative character. Based on the information given from the review of related literature, there were sets for professionals and supportive staffs. In addition, there were also certain open-ended questions.

To obtain additional information interview guides were also prepared to conduct structured interviews with principals and woreda educational officers.

Generally, the researcher has attempted to develop and construct the instruments of data collection with regard to the principles and methodological conceptions outlined in the various literature on research methodology.

The questionnaire and interview items were prepared in Amharic by the help of language experts to make it easier for understanding.

Multiple-choice types were forwarded in the first part of the questionnaire. A pilot study was carried out in Axum and Mekele skill development centers in order to ensure the validity of the items. This helped to identify vagueness and misunderstandings, to test the appropriateness of the instruments and establish sample procedures. Hence, based on the feedback obtained from the respondents all the necessary correction was made.

3.4.2 Data Collection Methods

In order to collect the data, a total of four vocational counselors were recruited from the skills development centers. The vocational counselors have got a one day training that could put them in a position to understand the general procedures for completing questionnaires which, of course, were to be carried out by respondents in their respective skill development centers. Besides, to maximize the quality of responses and degree of return preferable time was also chosen for the respondents.

The total number of respondents was obtained from the principals in all skill development centers. Finally, the questionnaires were distributed to the respondents, which were randomly selected by the researcher.

On the top of this, interviews were conducted with principals and woreda education officers.

3.5 Method of Data Analysis

Descriptive survey methods were used to analyze the quantitative and qualitative data gathered by the researcher. To analyze the quantitative data, percentage was given in places where there are specified choices. In "yes" or "no" responses and some other places a space is given for marking an "✓" and other comments. In some instances, descriptions are presented as open-ended narration. Besides, percentage was used to explain the personality characteristics of respondents, degree of influence on different factors on the utilization of material resources of the skill development centers.

The respondents were categorized according to their profession; frequency tailed and computed using percentage. Some variables were computed using parametric test statistics of Chi-square and T-test in computer assisted Ms-SPSS program.

In addition to this, qualitative data were analyzed using narrating. Thus, using the above tools, the following chapter treats the data obtained from the centers to achieve the objectives of the study.

CHAPTER FOUR

PRESENTATION AND ANALYSIS OF DATA

For this study the necessary data were obtained from supportive staffs professional staffs, principals and woreda education officers. Questionnaire was prepared and distributed to each respondents.

The total population of this study was 100 and of these, 80 were professionals, 20 supportive staffs. All of the respondents were randomly selected from four Skill Development Centers (SDC). Of these total number of 120 questionnaires distributed almost 90% of them were filled and returned.

Lastly, interview was made with four principals and four Woreda education officers respectively.

4.1 Characteristics of Respondents

Both the respondents were asked to fill their background information through questionnaire and interview. Based on this, their age, sex qualification and years of experiences are summarized in the following table.

Table 1: Sex, Age, Qualification and Experience of Respondents

S.N	Items	Respondents			
		Supp.		Prof. Staff	
		No	%	No	%
1	Sex:				
	A. Male	15	75	65	81
	B. Female	5	25	15	19
	Total	20	100	80	100
2	Age:				
	A. 20-25	-	-	-	-
	B. 26-30	-	-	5	6
	C. 31-35	6	26	48	60
	D. Above 36	14	74	27	34
	Total	20	100	80	100
3	Qualification				
	A. 1-8	-	-	-	-
	B. 9-10	6	30	-	-
	C. 11-12	10	50	-	-
	D. 12+TTI	-	-	-	-
	E. 12+1	-	-	-	-
	F. Diploma	4	20	79	95
	G. Degree	-	-	1	5
	H. Other	-	-	-	-
	Total	20	100	80	100
4	Years of experience				
	A. 1-5	2	5	10	13
	B. 6-10	3	15	18	23
	C. 11-15	13	75	50	63
	D. 16-20	2	5	2	1
	E. Above 20	-	-	-	-
	Total	20	100	80	100

Table one shows respondents characteristics. As we can understand from the above table 65 (81%) of the professionals and 15 (75%) of the supportive staffs were males. Hence, in both

groups the number of female employee is very low. This can be an indicator of the lower percentage of female professionals and also their lower representation in supportive activities.

In relation to the respondents age 6 (26%) of supportive staffs, 48 (60%) professionals were between 31 to 35 years. On the other hand, 27 (34%) the of the professionals were above 36 years.

Table one also gives some indications regarding the qualification of the respondents. Thus, 79 (95%) of professionals, 4 (20%) of supportive staffs were diploma holders. Hence, most of supportive staffs and professionals in the skill development centers were not filled with qualified personnel that can help them to taught their subjects effectively and create suitable condition for the implementation of the curriculum. To minimize this problem, most of the professionals are attending in-service training by the help of the regional TVET commission every year.

On the top of this, the data show on the respondents service years, most of them were well experienced in their field of work to perform wisely. Thus, 50 (63%) of professionals, and 15 (75%) of supportive staffs served between 13-15 years. From the above data, one can understand that, having more service may help to have more experience and skill.

4.2 Acquisition and Supply of Material Resources Utilization

In this study, respondents were given questionnaire to indicate who prepares the skill development plan for the acquisition and supply of material resources utilization. Table below presents the results.

Table 2: The Skill Development Plan for Acquisition and Supply of Material Resources Utilization

No	Items	Supp. Staffs		Proff. Staff	
		No	%	No	%
1	Who prepare the SDC plan for acquisition and supply of material resource utilization				
	A. Principals	14	70	61	76
	B. Committee	4	20	10	13
	C. Staff	2	10	3	4
	D. No response	-	-	-	-
	Total	20	100	80	100
2	From your experience who approves the plan				
	A. Principals	4	70	64	80
	B. Staff	3	15	6	7
	C. Committee	3	15	4	5
	D. No response	-	-	6	7
	Total	20	100	80	100

Many educators argued that, for the achievement of educational objectives, decision making mechanism and designing the best alternative strategy especially in the use of scarce material resources planning is the initial step of managers. As we can see from the table 61 (76%) of the professionals, 14 (70%) of the

supportive staff responded that the principals prepared the plan. On the contrary, 10 (6%) of professionals, and 17 (70%) of supportive staffs responded that the administrative committee prepared the plan. A few of respondents indicated that they don't know by whom the plan was prepared. Hence, from the data it was observed that principals didn't let their personnel participate in the planning activities.

Regarding plan approval, 64 (80%) of professionals, and 14 (70%) of supportive staffs said that, principals were the most important figure. On the other side, principals in the interview replied, the staff approved the plan. So, it is clear that, the skill development centers follow different approach in approval practices. Therefore, planning should not be left to the principal alone or to a group of few people. Professionals and supportive staff participation in the preparation and approval of planning of material resources will strongly help its implementation of the curriculum.

4.3 Allocation and Adequacy of Budget

The respondents were asked about the source of allocation and adequacy of budget through questionnaire. Hence, based on the data obtained table 3: Summarized the Results

No	Items	Supp. Staffs		Proff. Staff	
		No	%	No	%
1	The main sources of budget for the training process is				
	A. Government budget	16	80	64	80
	B. Non-government aid	-	-	-	-
	C. Community Contribution	-	-	6	8
	D. Internal revenue	4	20	10	12
	Total	20	100	80	100
2	The budget allocated for implementing the curriculum for bids is approved by				
	A. Regional TVET commission	18	90	74	93
	B. Woreda finance office	2	10	6	7
	C. Woreda administrative council	-	-	-	-
	D. Coordinating committee	-	-	-	-
	Total	20	100	80	100

As shown in item one table 3, 64 (80%) professionals and 16 (80%) supportive staffs replied that government budget is the main source of budget for the SDCs.

Besides, item 2 the same table 93% of the respondents report that the approval of training budget to facilitate bids for the implementation of the curriculum is by the regional TVET commission. Some 8% of respondents pointed out that the budget was executed by Woreda finance office. Hence, according to the data obtained, the majority of respondents cited regional TVET commission approves that budget.



4.4 The Practice of Destruction

Both the respondents were asked to fill who frequently involve in the destruction of material resources and materials out of use. Based on this the results are summarized in table four.

Table 4: Level of Destruction and its Usage

No	Items	Supp. Staffs		Proff. Staff	
		No	%	No	%
1	Who involve mostly is the destruction of material resources				
	A. Males	15	75	60	75
	B. Females	5	25	4	15
	C. Both	-	-	16	20
	Total	20	100	80	100
2	What does the center do with material resources which are out of use				
	A. Stores them	12	60	68	85
	B. Selling them through bids	-	-	-	-
	C. for personal usage	-	-	-	-
	D. Nothing is done	8	40	12	15
	Total	20	100	80	100

Item one table 4 indicates that 15 (75%) of supportive staffs and 60 (75%) of professionals, responded, males are more frequently involved in the destruction and misuse of materials resources. Whereas 16 (20%) of the professionals said both males and females were involved. In regard to the material resources which are out of use, 12 (60%) of supportive staff and 68 (85) of professionals indicated the material resources were stored in a poor condition. 8 (40%) of supportive staff and 12 (15%) of professionals indicated nothing was done. As the data of interview from principals and woreda education officials

indicated, skill development centers do not give more attention for material resources which are out of use even though it is possible to repair and use them to reduce scarcity of materials such as computer, machines, textbooks, desks and tables, or it is possible to sell them through bids to reduce the crowding of the stores.

4.5 The Practice of Inventory in the Training Process

Both the respondents were filled the questionnaire in relation to the frequency of practice of inventory in the skill development centers. Interview was also conducted with woreda educational officials and summarized as follows.

Table 5: The Practice of Inventory

N o	Items	Frequency of respondents				Chi- squa r e
		Supp. Staffs		Proff. Staff		
		No	%	No	%	
1	Is there inventory practice in your SDC					51.47 3
	A. Yes	19	95	75	94	
	B. No	1	5	5	6	
	C. I don't know	-	-	-	-	
	Total	20	100	80	100	
2	How often is inventory made in your center					
	A. Once a year	12	60	72	90	
	B. Twice a year	-	-	-	-	
	c. No fixed time	2	10	4	5	
	D. I don't know	6	30	4	5	
	Total	20	100	80	100	
3	How many times are the buildings and workshops maintained					
	A. once in a year	-	-	-	-	
	B. once in six months	-	-	-	-	
	C. once in two or three years	5	25	16	20	
	D. one above three years	15	75	64	80	
	Total	20	100	80	100	

* Significant at an alpha level (<0.05)

Table 5 shows the practice of inventory for material resources. Accordingly, 19 (95%) of supportive staffs and 75 (94%) of professionals replied there was inventory in the training centers.

The result of chi-square indicates that ($X^2 = 51.473$ at $p > 0.05$), there is no significant difference on the issue of inventory, for all groups of respondents rated positive.

The frequency of inventory taken in their SDC's was, 12 (60%) of supportive staffs, and 72 (90%) professionals indicated, it was made once in a year.

Regarding the duration of maintenance, 64 (80%) of professionals and 15 (75%) of supportive staff indicated the duration of maintenance was once above three years.

From the data gathered, it is possible to assert that periodic or regular maintenance of material resources and buildings was not made on regular academic year.

4.6 Organizational Structure and Administrative Performance

This issue was concerned on the structural relationships of other institutions. So, questionnaire was designed and distributed to gather information. Furthermore, interview was held with principals and woreda education officers. The result is summarized as follows.

Table 6: Structural Relationships of the SDCs

No	Items	Supp. Staffs		Proff. Staff	
		No	%	No	%
1	The structural relationship is more with				
	A. Regional TVET commission	16	80	64	80
	B. Woreda education office	4	20	10	13
	C. Woreda administrative council	-	-	-	-
	D. Coordinating committee	-	-	6	7
	Total	20	100	80	100

In item 1 table 6 indicated that 16 (80%) of supportive staffs, and 64 (80%) of professionals reported the skill development centers had strong structural relationships with the regional TVET commission. Where as, the interview data indicated that there was a loose relationship between the woreda education officers and the institutions. The decentralization administration has led to loose relationship in the way of practicing educational activities and thereby can hamper the effective implementation of the curriculum.

4.7 Controlling of Material Resources

Controlling is the method of protecting resources from unnecessary usage in an institution. To this effect both the respondents were asked and summarized the results as follows:

Table 7: Controlling of Material Resources

No	Items	Frequency of respondents			
		Supp. Staffs		Proff. Staff	
		No	%	No	%
1	Who control as to whether or not available material resources are utilized for implementation of the curriculum				
	A. Principals	-	-	-	-
	B. Department heads	10	50	40	50
	C. Professionals	-	-	-	-
	D. Tool men	10	50	40	50
	Total	20	100	80	100

As indicated in the above table, 40 (50%) of professionals, and 10 (50%) of supportive staffs responded that the follow up of whether or not the available material resources were taken care of by department heads. Besides, 10 (50%) of supportive staffs and 40 (50%) of professionals were also said, the controlling mechanism was facilitated by tool men.

This implies that the controlling mechanism of material resources in the skill development centers of Tigray in general is largely undertaken jointly by the help of department heads and tool men.

However, from the data and interview session observed, it is possible to suggest that principals did not give much attention for making awareness and give orientation for trainees, professionals and supportive staffs to protect from misuse.

Hence, controlling and evaluating is vital to support further planning and decision-making that take place during

implementation of the curriculum based on quarterly and semi-annual monitoring and reporting cycle.

4.8 The Competence of Personnel in Utilizing Material Resources

Poor assignment of personnel can affect the quality of training. The increase of educational complexity on their resources necessitates the institution on qualified personnel. In this regard respondents were asked about the competence of personnel in their SDSs through questionnaire. Finally, summarized the results.

Table 8: The Competence of Personnel in utilizing Material Resources Effectively for Implementation of the Curriculum

No	Items	Frequency of responses				Chi-squar e
		Supp. Staffs		Proff. Staff		
		No	%	No	%	
1	Do the necessary staff for the utilization of material resources assigned based on competence at all levels					18.48 3
	A. Yes	4	20	12	15	
	B. No	16	80	68	85	
	Total	20	100	80	100	
2	If your response to item 1 is "No" what do you think the reasons					T-test
	A. Law qualification	5	25	16	20	4.91
	B. Inadequate experience	4	20	20	25	
	C. Irrelevant qualification	6	30	25	31	
	D. To the position talk of Motivation	5	25	19	24	
	Total	20	100	80	100	

As can be seen from table 8 item 1, 16 (80%) of supportive staffs and 68 (85%) professionals indicated that the competence of the personnel involved in the SDSs is unsatisfactory. On the other hand, 4 (20%) of supportive staffs, and 12 (15%) of professionals said satisfactory.

The result of the analysis of chi-square for item 1 table 8 shows ($X^2 = 18$ at $p > 0.05$) inspite of this the score value indicates all group of respondents rated below average.

The respondents who said unsatisfactory for item 1 of table 8 were also asked that what the reasons could be 20% the respondents said low qualification, 23% said inadequate experience, 30% said irrelevant qualification to the position and 23% responded lack of motivation.

The researcher also made an interview with principals and educational officers about the availability of personnel, documents, rules and regulations used as a guideline for the utilization of material resources in the institutions. The result was, thus, all the respondents confirmed that the availability assigned, basic documents, rules and regulations were responded negatively. Besides, all the supportive staff were assigned those who have not knowledge about material resources and they were flouting from other civil servants. Hence, the skill development center was used simply as an accommodation of unqualified personnel.

4.9 Participation and Responsibilities of Professionals and Supportive Staff Members in Utilization of Material Resources

Respondents were asked about the degree of participation and responsibility of the utilization of material resources and questionnaire were distributed to all. Interview also conducted with principals and Woreda education officials on this issue. Finally, table 9 summarized the results.

Table 9: Participation and Responsibilities of Professionals and Supportive Staffs in the Utilization of Material Resources

No	Items	Frequency of responses				T-test
		Supp. Staffs		Proff. Staff		
		No	%	No	%	
1	The participation of the staff in utilizing materials resources					21.06
	A. High	-	-	-	-	
	B. Medium	4	20	10	13	
	C. Low	16	80	70	87	
	D. Very low	-	-	-	-	
	Total	20	100	80	100	
2	The degree of responsibilities in utilizing material resources					1.101
	A. High	-	-	-	-	
	B. Medium	2	10	12	15	
	C. Low	18	90	68	85	
	D. Very low					
	Total	20	100	80	100	

* significant at an alpha level (<0.05)

According to the data on table 9 item 1, 70 (87%) of professionals and 16 (80%) of supportive staffs responded that, the participation in utilizing the material resources was low.

However, professionals and supportive members are the most crucial facilitators of the skill development centers. Besides, they have also a moral social obligation to control the material resources. Protecting these resources from being misused activities is largely a matter of proper instruction and orientation, which is one of the responsibilities of professionals and supportive staffs.

Similarly, the t-test ($t=1.101$ at $p>0.05$) result for the same item noticed that the participation and degree of responsibilities of material resources was below average. Therefore, it is possible to deduce that the skill development centers did not let their staffs participate in utilization of material resources.

Besides, in the interview session, both the respondents indicated the same idea, which is low. As a matter of fact, all the officials argued, professionals and supportive staffs have responsibilities for the utilization of material resources and must deal with premeditated destruction and damage. (Feb. 20, 2005).

4.10 Quality and Availability of Material Resources

The respondents were asked on the quality and adequacy of material resources of the SDCs. The result given was as follows:

Table 10: Quality and Availability of Material Resources

No	Items	Frequency of responses				T-test
		Supp. Staffs		Proff. Staff		
		No	%	No	%	
1	Availability of supplies i.e. classrooms, workshops, modernness of machines and raw materials up-to-datedness of references etc.					1.102
	A. High	-	-	2	4	
	B. Medium	4	20	4	5	
	C. Low	12	60	70	86	
	D. Very low	4	20	4	5	
	Total	20	100	80	100	

As indicated in item 1 table 10, 70 (86%) of professionals and 12 (60%) of supportive staffs respondents pointed out the status of material resources was inconvenient for the implementation of the curriculum, while 4 (50%) of professionals 4 (50%) of supportive staffs reported that it was partially convenient. The adequacy and modernness of the machines as well as equipment was not satisfactory.

T- test also indicates that ($t = 1.102$, at $p > .05$) there is a significance difference of respondents on the quality and availability of material resources.

Hence, material resources are the basic requirements. If are not fulfilled, it is impossible for any training program to function properly.

In the interview questions the principals respondents further suggests the material resources in the skill development centers seem low and some of them are outdated.

In general, as the researcher observed it himself the condition of availability of material resources was inadequate as compared to the number of trainees and diversified field of study. This may lead with no doubt to the negative effect of the training programmes and imparted through theoretical presentation and lecture method.

4.11 Efforts and Experiences of Principals in Utilizing the Material Resources

As they have a direct contact with the resources. Hence, table 11 summarizes the results.

Table 11: Efforts and Experiences of Principals is Utilizing Material Resources

No	Items	Frequency of responses				T- test
		Supp. Staffs		Proff. Staff		
		No	%	No	%	
1	Planning					4.90
	A. High	-	-	-	-	
	B. Medium	5	15	14	5	
	C. Low	15	75	66	95	
	D. Very low	-	-	-	-	
	Total	20	100	80	100	
2	Organizing					4.87
	A. High	1	5	-	-	
	B. Medium	13	15	70	87	
	C. Low	136	30	10	13	
	D. Very low	-	-	-	-	
	Total	20	100	80	100	
3	Supplying					

	A. High	-	-	-	-	4.90
	B. Medium	8	40	10	13	
	C. Low	12	60	70	87	
	D. Very low	-	-	-	-	
	Total	20	100	80	100	
4	Coordinating					4.91
	A. High	-	-	4	5	
	B. Medium	13	64	64	80	
	C. Low	7	35	12	15	
	D. Very low	-	-	-	-	
	Total	20	100	80	100	
5	Controlling					4.89
	A. High	-	-	4	5	
	B. Medium	4	20	12	15	
	C. Low	16	80	64	80	
	D. Very low	-	-	-	-	
	Total	20	100	80	100	

Table 11, indicates responses on the effort and experiences of principals to utilize material resources. According to the data obtained 62 (78%) of professionals, and 15 (75%) of supportive staffs answered the effort made by principals in planning material resources utilization was low. However, in the interview made with principals the effort made in planning was high.

As it was shown in table 11, t-test ($t = 4.90$ at $p > 0.05$) also shows the value statistically significant and all the respondents rated it low. Thus, from this, one can understand that the effort and experience of principals to utilize material resources in implementing the curriculum is a serious problem.

In the case of organizing resources 2 (50%) of principals, 13 (65%) of supportive staff, and 70 (87%) of professionals responded that the effort made was moderate.

Besides, the result of t-test ($t=4.87$) indicated in all cases the value of respondents are average there by showing that organizing of material resources in implementing the curriculum has a barrier.

The effort and experience made by principals in supplying material resources, was also indicated that, 70 (87%) of professionals and 12 (60%) of supportive staffs responded low.

Regarding the coordination effort of principals 13 (65%) of supportive staff, and 64 (80%) of professionals responded that moderate effort and experience.

The t-test result ($t=4.91$) shows that all respondents rated the item indicating coordination effort of principals was average.

In line of this, principal's effort to evaluate and control material resources was asked. Accordingly, 64 (80%) of professionals and 16 (80%) of supportive staff replied low.

Therefore, the information indicates that, the response of the principals was almost the same that they made high effort in utilizing function to the implementation of the curriculum. On the other hand, the great number of professionals and supportive staffs indicated that principals made low efforts.

Hence from the above given data one can deduce that there are different views among the respondents. In this regard, principals were not transparent in utilization of resources and they do not call staff members to participate in the utilization function.

4.12 Material Resources Frequently Damaged

Respondents were asked to fulfill these resources frequently damaged and affected by distraction. The results are summarized under this table.

Table 12: Material Resources that are Frequently Damaged

No	Items	Frequency of responses				T-test
		Supp. Staffs		Proff. Staff		
		No	%	No	%	
*	Which material resources are frequently damaged					3.989 5
1	Desks and tables					
	A. High	15	75	10	14	
	B. Medium	5	25	70	86	
	C. Low	-	-	-	-	
	D. Very low	-	-	-	-	
	Total	20	100	80	100	
2	White and blackboards					3.888
	A. High	6	30	4	5	
	B. Medium	10	50	68	85	
	C. Low	4	20	8	10	
	D. Very low	-	-	-	-	
	Total	20	100	80	100	
3	Floors and ceilings					2.78
	A. High	4	20	4	5	
	B. Medium	4	70	69	86	
	C. Low	2	10	7	9	
	D. Very low	-	-	-	-	

	Total	20	100	80	100	
4	Walls					2.89
	A. High	10	50	6	7	
	B. Medium	10	50	74	93	
	C. Low	-	-	-	-	
	D. Very low	-	-	-	-	
	Total	20	100	80	100	
5	Electric light					2.78
	A. High	2	10	14	16	
	B. Medium	18	90	64	80	
	C. Low	-	-	2	4	
	D. Very low	-	-	-	-	
	Total	20	100	80	100	
6	Doors and windows					2.74
	A. High	3	15	2	4	
	B. Medium	15	75	70	86	
	C. Low	2	10	8	10	
	D. Very low	-	-	-	-	
	Total	20	100	80	100	
7	Water tapes					1.474
	A. High	3	15	11	14	
	B. Medium	15	75	69	86	
	C. Low	2	10	-	-	
	D. Very low	-	-	-	-	
	Total	20	100	80	100	
8	Fence					1.426
	A. High	-	-	8	10	
	B. Medium	14	70	66	83	
	C. Low	6	30	6	7	
	D. Very low	-	-	-	-	
	Total	20	100	80	100	
9	Machines					1.467
	A. High	14	70	60	75	
	B. Medium	16	30	15	19	
	C. Low	-	-	5	6	
	D. Very low	-	-	-	-	
	Total	20	100	80	100	
10	Computers					1.452
	A. High	18	90	74	93	
	B. Medium	2	10	6	7	
	C. Low	-	-	-	-	
	D. Very low	-	-	-	-	
	Total	20	100	80	100	

As indicated in table 12 desks and tables, white and blackboards, floors and ceilings, walls, electric light, doors and windows,

water tapes and fences was damaged medium. However, 14 (20%) of supportive staffs and 60 (75%) of professionals responded that, machines were frequently affected by destruction. Besides, 18 (90%) of supportive staffs and 74 (93%) of professionals indicated that computers were seriously damaged. The reasons were trainees would to not give care and attention when they use them in the day-to-day activities. Besides, continuous follow-up and utilization system was not done by the administrative bodies to protect the computers from destruction.

Employing the t-test method of analysis it was found out in all variables there are statically significant. It should be noted that although the result of analysis revealed a significance variation it would be safe to presume that material resources are highly damaged in the skill development centers.

4.13 State of Material Resources Supply and Other Facilities

Questionnaires were distributed to the respondents to investigate the state of material resources supply and other facilities in the SDCS. An interview was also conducted with principals and woreda education officers. Hence, the results are summarized here under.

Table 13: State of Material Resources Supply and Other Facilities

No	Items	Frequency of responses				T- tes t
		Supp. Staffs		Proff. Staff		
		No	%	No	%	
1	Supply of raw material like wood, metal spare parts					4.90
	A. High	-	-	-	-	
	B. Medium	2	10	6	4	
	C. Low	18	90	74	96	
	D. Very low	-	-	-	-	
	Total	20	100	80	100	
2	The number of machines and tools for practical activities are:					4.89
	A. High	1	5	3	3	
	B. Medium	10	50	62	78	
	C. Low	9	45	15	19	
	D. Very low	-	-	-	-	
	Total	20	100	80	100	
3	Curriculum materials like books, syllabus, models etc					4.99
	A. High	-	-	-	-	
	B. Medium	5	25	10	14	
	C. Low	15	75	70	86	
	D. Very low	-	-	-	-	
	Total	20	100	80	100	

As can be seen from the above table 13, 18 (90%) of supportive staffs and 74 (96%) of professionals responded that the supply was low. Hence, scarcity of material resources tends to lead to more theory. Practical lessons suffer from inadequate material supply. Hence, trainees can acquire limited practical skills. The t-test ($t=4.90$ at $p>0.05$) indicated also low.

Similarly, 10 (50%) of supportive staffs members 62 (78%) of professionals responded about the number of machines and tools and it was judged as satisfactory. Where as 9 (45%) of the supportive staffs and 15 (19%) of professionals said the number of machines and tools was low.

In this regard, the researcher himself observed different kinds of machines that are installed in the workshops to be used by students for learning different operations.

Respondents were asked about the scarcity of reference books, and 15 (75%) of supportive staffs and 70 (96%) responded that, professionals and trainees are unable to broaden their knowledge through their own efforts. Trainees are depended only on classrooms lessons. Therefore, classroom lessons only are not enough by their own to equip the trainees with the necessary skills. Current and up-to-date reference books and curriculum materials are important to acquaint the training process. The result of t-test ($t=4.783$ at $p>0.05$) also reveals low.

As a result, in the skill development centers material resources are not adequately found. Trainings become more complex and abstract. Obviously, securing the necessary material resources is not an easy task, for it is expensive and demanding for developing countries like Ethiopia.

Hence, it is hard to obtain equipment and material resources on time according to the required quantity and type in the SDCs. This in turn negatively affects the quality of training.

4.14 Constraints that Hinder the Effective Implementation of the Curriculum and Utilization of Material Resources

Respondents were asked to give their ideas on the factors that hinder the training. Besides, interview was broadly conducted with principals and woreda educational officers. The results are summarized on the following table

Table 14: Constraints that Impede for the Effective Implementation of the Curriculum and Utilization of Materials Resources

No	Items	Frequency of responses				T-test
		Supp. Staffs		Proff. Staff		
		No	%	No	%	
1	Shortage of classrooms, work shops inrelation to the number of trainees					1.8429
	A. High	-	-	-	-	
	B. Medium	15	75	65	81	
	C. Low	5	25	15	19	
	D. Very low	-	-	-	-	
	Total	20	100	80	100	
2	Inappropriate machines and equipment to the nature of the course and the capacity of trainees					1.8432
	A. High	-	-	-	-	
	B. Medium	13	65	70	86	
	C. Low	7	15	10	14	
	D. Very low	-	-	-	-	
	Total	20	100	80	100	
3	Shortage of training program					0.8412
	A. High	-	-	-	-	
	B. Medium	6	30	9	11	
	C. Low	14	70	71	89	
	D. Very low	-	-	-	-	
	Total	20	100	80	100	
4	Budget problem					0.9439
	A. High	-	-	-	-	
	B. Medium	2	10	5	6	
	C. Low	18	90	75	94	

	D. Very low	-	-	-	-	
	Total	20	100	80	100	
5	Having no adequate professionals					
	A. High	-	-	-	-	
	B. Medium	8	40	18	22	1.8411
	C. Low	12	60	62	78	
	D. Very low	-	-	-	-	
	Total	20	100	80	100	
6	The degree of proper utilization of material resources					
	A. High	-	-	-	-	
	B. Medium	2	10	5	6	0.8410
	C. Low	18	90	75	94	
	D. Very low	-	-	-	-	
	Total	20	100	80	100	
7	Out-dateness of training inputs					
	A. High	-	-	6	8	0.9429
	B. Medium	8	40	15	19	
	C. Low	12	60	59	73	
	D. Very low	-	-	-	-	
	Total	20	100	80	100	

As stated in the above table, almost all the respondents replied medium concerning the problem of limited accommodation capacity of the existing classrooms, workshops etc in relation to the number of trainees.

On item 2 table 14 respondents were asked to rate how machines and equipments were inappropriate to the nature of the course and capacity of the trainees. Accordingly, 86% of the respondents said that, It was medium concerning the shortage of time. Hence, 83% of the respondents replied it was low.

As can be seen from table 14, item 4 respondents were asked whether they had a problem of budget or not. A large proportion 96 (92%) of the respondents confirmed that their skill

development center had faced a problem of budget in delaying and approval of the bids from the concerned bodies.

Moreover, respondents were asked to answer if their skill development center had adequate and qualified number of trainers. To this result, 18 (90%) of supportive staffs and 78 (96%) of professionals confirmed that, the problem was found to be low.

As can be noted from table 14 item 6, most of the respondents 95 (91%) answered that the degree of proper utilization of the existing material resources in the SDCs was low.

From all the variables and respondents of t-test analysis value indicates that above average indicating its higher influential role in utilization of material resources during the curriculum implementation and strong relationship between the respondent's views. Both groups share the same idea.

From this we can conclude the SDCs seemed relatively unable to use material resources effectively. In light of these officials were asked through interview to list down the major constraints that challenge the institutions in the implementation of the curriculum. Accordingly, the respondents pointed out:

- Shortage of raw materials, which are essential for the training program.

- Inadequacy of budget coupled with its late dissemination and failure to utilize existing funds due to delaying in submitting financial reports with supporting facts and delaying in bids.
- Lack of proper coordination of the center authorities to carryout the training activities.
- Shortage of trained and professional trainers to implement the curriculum.
- Shortage of transportation to facilitate effective skills training and utilization of resources.
- Loose communication with woreda education officials, administrative council and the community at large.
- Inadequacy is observed in the number of qualified personnel and experts and most of the principals are posted from their teaching performance without under going training.
- Shortage of students' textbooks, references, syllabus.
- The low economic background of the trainees, this leads them to dropout from the training.
- Skill training is not considered as a real curriculum program that contributes to the development of the country.
- The quality of the curriculum is affected due to lack of quality training material resources.
- Preparation of the curriculum materials such as textbooks, syllabus are not high professional inputs.

4.15 The Contribution of Utilization of Material Resources in Implementing the Curriculum

The availability of well-organized curriculum materials has a consistently positive effect on the trainees and effectiveness of the program. Thus, the success of the training depends on the quality of curriculum materials. Hence, both the respondents were asked through questionnaire to indicate whether the skill development centers has organized curriculum materials for the training and to know the contribution of curriculum materials for the implementation of the training program. Table 15 summarizes the results. Moreover, interview for principals and woreda education officers were conducted to strengthen the issue raised.

Table 15: The Contribution of Material Resources for the Implementation of the Program

No	Items	Frequency of responses				Chi-square
		Supp. Staffs		Proff. Staff		
		No	%	No	%	
1	Do you think that material resources can facilitate the implementation of the curriculum					51.431
	A. Yes	18	90	72	90	
	B. No	2	10	8	10	
	Total	20	100	80	100	
2	If your answer for item No "1" is "yes" what kinds of contribution did they have when effectively utilized					T-test
	A. Stimulate the trainee's interest	3	15	9	11	
	B. Facilitate active learning	4	20	21	27	
	C. Relate theory with practice	14	20	20	26	
	D. Promote the quality of training	3	15	10	12	

E. Provide direct interaction with the reality	3	15	10	12	0.9290
F. Make computation tasks on practical value	3	15	10	12	
Total	20	100	80	100	

As we can see from table 15 items 1 all of the respondents were indicated that, material resource is the one, which is very important asset for the implementation of the curriculum.

Chi-square result also indicates that ($\chi^2=51.431$) there is a significance difference of respondents on the utilization of material resources. According to the analysis given effective utilization of material resources can facilitate the curriculum implementation.

Moreover, respondents were asked how much the contribution of material resources to training when effectively utilized. 18 (90%), of supportive staffs, and 72 (90%) professionals indicated, it can contribute to the implementation of the curriculum.

As it was shown is table 15 item 2, 3 (15%) of supportive staff, 9 (11%) of professionals responded, material resource can stimulate the trainee's interest. 4 (20%) of supportive staff and 21 (27%) responded that, it can facilitate active learning and relate theory with practice. 3 (15%) of supportive staff and 10 (12%) of the professionals indicated, it can promote quality of training, provide direct interaction with the reality and make computation tasks on practical value.

The interview made with principals and woreda education officers also indicated that, the contribution of utilizing material resources in implementing the curriculum has merit to broaden the base of trainees knowledge, give trainees an immediate understanding of abstract ideas and encourage creative thinking.

Generally, from the data given the contribution of material resources in the training process can promote the curriculum with direct, concrete, relevant and practical aspects and trainees can acquire easily the desired skills in a clear meaningful and effective way and mastering and understanding the skills.

4.16 Measures to be taken to Overcome the Constraints of the Skill Development Centers

Both the respondents were asked through questionnaire to suggest some solutions about the constraints that impede the effective usage of material resources on open-ended question. An interview was also conducted with the concerned bodies of the woreda education officers. Hence, the result is summarized as follows:

Both the respondents of the questionnaire and interview was speaking the same language as how to over come the major problems face in their utilization of material resources in the skill development centers. In this regard, it is essential:

- Giving sufficient orientation to trainees

- Making sufficient inventory at the end of the year
- Coordination among skill development centers in all activities
- Developing maintenance and encouraging controlling of resources.
- Encouraging controlling of material resources in collaboration with the staff.
- For those who damage the resources, giving equivalent punishment arranging material resources as effective as possible.
- Assigning qualified personnel
- Awareness creation for teachers and supportive staffs on the utilization of material resources issues has helped a lot.
- Allocate enough money for the program.
- Supportive staffs and professionals should get enough training and in-service training, to up-grade their performance.
- Fastening the process of bids at the exact time so that training centers can begin their training on time with out facing shortage of material resources.

CHAPTER FIVE

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

The major purpose of this study was to identify and describe the utilization of material resources in the implementation of the curriculum at regional level of Tigray with special focus on the skill development centers.

In order to achieve this, basic questions were raised which addressed areas such as: How are the material resources utilized in the skill development centers, how did material resources contribute for the implementation of the curriculum, are there appropriate personnel assigned specifically to deal with effective material resources utilization do professionals, supportive staffs and woreda education officers actively participate and have enough training and knowledge on proper utilization of material resources in the skill development centers, what are the factors that impeded the effective utilization of material resources in the skill development centers, and what measures should be taken to overcome material resources problems in the skill development centers.

The study was conducted in four skill development centers. Random sampling techniques were used for the selection of professionals and supportive members.

The subjects of the study were: 20 supportive staff members, 80 professionals 4 principals and 4 woreda educational officers.

The data obtained were analyzed using some statistical tools such as percentage, the chi-square and t-test Ms-SPSS computer assisted program.

From the statistical data and the analysis made from the information of the respondents forwarded the following major findings conclusions, and recommendations were drawn.

5.1 Summary of the Finding

- It was found that most of the material resources are affected by:
 - Misuse of the material resource in the training
 - Inconvenient workshops
 - Lack of providing material resources on the exact time.
 - No commitment of principals to protect materials from destruction

- The study indicated that material resources were highly destroyed during training time especially at the beginning and at the end of the training.
- Material resources were highly damaged by male trainees compared to female trainees.
- The material resources seriously affected by destruction are:
 - Desks and tables
 - Electric lights
 - Doors and windows
 - Machines
 - Computers and other tools.
- In the skill development centers, there were no continuous inventory activities to determine the maximum level of support. Some of the material resources become out of use and they were seen lying as a simple thing. For instance, desks, books, tools, metals, computer accessories were piled behind the training room.
- The study shows that all center buildings and training rooms were not maintained still the current day due to shortage of budget allocation for maintenance.
- It was indicated that all the administrative body of the skill development centers did not participate in the planning of the activities. Principals only approve the plan without the involvement of the staff members.

- Center managers did not make much effort on planning, acquisition and supply, allocation and distribution, evaluating and controlling etc of material resources.
- To protect material resources continuous orientation and advice were not given to trainees, professionals and supportive members about the proper care that must be taken in utilizing the resources. Thus, this leads to low sense of responsibility.
- With regard to the relationship between the skill development centers and others there was good relationship with the regional TVET commission. But loose relationship with the woreda education offices and woreda administrative council.
- As the study revealed all of the skill development center principals and personnel were not trained in the field of administration. Due to this their capacity and knowledge of utilizing all the activities, were found to be low.
- The study shows that, the contribution of effective utilization of material resources for the curriculum is essential because it can facilitate active learning, relate theory with practice, promote the quality of training, provide direct interaction with the reality and give trainees an immediate understanding of abstract ideas.
- Most of the respondents believe that the major problems that challenge the skill development centers in the training process are the following:

- Shortage of raw materials and tools, which are essential for the training.
 - Late dissemination of budget and bids from regional and woreda finance and failure to utilize existing funds due to delaying in submitting financial reports with supporting facts.
 - Lack of proper coordination
 - Shortage of trained and professional trainers to implement the curriculum.
 - Inadequacy of qualified personnel and principals were assigned from their teaching performance without taking training.
- The center's are expected to give solution at the right time, to plan, organize, coordinate, supply, distribute, supervise and evaluate the overall training programs. But, it was observed from the study, the centers were not sensitive towards material resources and give solutions directly.

5.2 Conclusions

Material resources are used to reinforce and facilitate the implementation of the curriculum. They enhance the understanding of the trainees and skill of the subject matter they are trained. Therefore, one has to understand that material resources play a great role in the training if effectively and

efficiently utilized. Hence, from the findings obtained the following conclusions were drawn:

1. As far as material resources utilization is concerned, the materials used must be controlled. To achieve the objectives of the training financial allocation is vital, without finance much of the efforts to materials the objective is unfeasible. It was explained by all of the respondents that financial requirements of the centers were unfulfilled. From this, we can conclude that the centers had no dependable sources of finance.
2. The principals and supportive staff who are assigned for the skill development centers were graduates of academic subjects. They lack the skills of how to plan, coordinate, control and utilize the overall activities of their institutions.
3. Material resources require skills and the commitment of principals and personnel. But the research findings revealed that they lack training in the field of administration how to utilize resources,
4. To effectively utilize material resources, clear and concise directives are very essential. Without the existence of these directives, the personnel may not be confident enough to carryout as they planned.
5. As revealed in the findings, professionals and supportive staffs did not participate in the plan. This demotivated members and reduced their work morale. Hence, this may entail an adverse

6. effect on the efficient utilization of material resources besides the suffering from scarcity of material resources.
7. The study pointed that, material resources are essential inputs to carryout the training process to achieve the intended objectives. Therefore, major problems that affect material resources have to be reduced and give much attention by the skill development centers.
8. Some skill development centers were not given orientation and awareness to the trainees, teaching and non-teaching staffs. Because of this, misuse of destruction and irresponsibility for material resources were observed.
9. The skill development centers material resources have to be maintained regularly or on periodic bases. The centers have responsibility to coordinate professionals, non-professional personnel and parents to gain their cooperative effort in utilizing the material resources and developing the centers budget.

5.3 Recommendations

Utilization of material resources in skill development centers needs cooperative activities and responsibilities of principals, professionals, supportive staff, trainers and the whole society. As observed in the study, the participation of all these was limited. As a result, material resources were not given due attention. To

minimize these constraints, it would be advisable that the skill development centers and the concerned bodies, have to implement the following recommendations.

1. Skill development centers are the property of the society that produce knowledgeable and skillful trained manpower. The communities of the centers are also change agents for the enhancement of the societal development at large. Hence, the center has to orient the society about the effective utilization and importance of material resources. The centers have to use transparent rules and regulations. Those who are working in the centers must be oriented well to have the necessary knowledge and skills on the proper use of material resources as well as to orient other stakeholders how to effectively utilize material resources.
2. The skill development centers in collaboration with professionals, supportive staffs must search for solutions to the destruction of material resources. This may help members to develop positive attitude toward the centers' property.
3. The study revealed that, the material resources were highly exposed to destruction at the training session and any time. To overcome this problem, trainees, trainers and supportive staff member should be oriented about the importance of material resources during staff meeting, at the flag ceremony, and students' council meetings.

4. Centers should make continuous inventory twice a year and record of every items by forming clear data for items that are in use and that have been damaged and how the destruction was caused and take immediate measure to make adjustment.
5. The data revealed that, most of the material resources maintained after they ceased their functions, to solve this problem there has to be protective maintenance before the opening, during the training, and after end of the training.
6. Adequate budget should be allocated to buy and to carry out maintenance of equipment, furniture, machines and buildings. Thus, bureau of technical and vocational commission should give due attention to the centers training program in its allocation and approval of financial resources. It should develop supportive policy for promoting effective utilization of material resources and work attentively for the fastening of the process of bids in supplying the material resources in order to implement the curriculum on the exact time.
7. Professionals and personnel of the centers should work jointly in planning, deciding and implementing programs related to material resources utilization in the centers.
8. The centers have to develop a sense of responsibility to handle properly and to protect the material resources from destruction by contributing more effort and by sharing their experiences.

9. Unmotivated and un-oriented trainees, professionals and supportive staff members can misuse and mishandle material resources. Hence, centers have to make concerted efforts to motivate and orient workers of the centers to engage and participate in protecting material resources.
10. To solve the problems in utilizing material resources effectively, centers have to strengthen periodic maintenance by giving appropriate training and sharing experiences within and outside the center.
11. Making trainees to repair classroom, broken doors, windows, and worn-out material resources may help them to develop negative attitude towards destruction. Therefore, continuous advice has to be given.
12. Trained and professionally valued staff is required to utilize the material resources effectively. Therefore, programme orientation and training for all to acquaint with the utilization of material resources is vital.
13. Establishing strong and permanent linkage with the surrounding environment, such as the church, mosque, 'Edir' and with relevant local governmental institutions is vital to community development. Therefore, centers should work with all sectors of the society to secure the necessary resource and to share better experiences.
14. Utilizing material resources require skills. As exhibited in the finding however, all of the principals and supportive staffs

were qualified in academic subjects and other fields. Hence, they are not familiar with principles and theories of resources utilization. This hinders them running from effective utilization of material resources in particular and implementing the curriculum in general. Hence, the regional TVET commission and woreda education should either:

- a. assign personnel for the centers who are qualified in the field
- b. give short term training in the form of workshops and seminars based on utilization of resources.

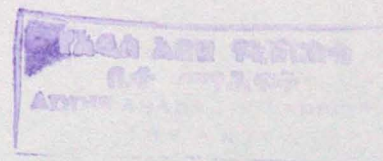
15. Continuous evaluation and supervision have to be carried out mutually by concerned bodies to assess the entire utilization of material resources.

REFERENCES

- Aggarwal, J. C (1996) **Principles, Methods and Techniques of Teaching**. Vikas. Pub. House Pvt. Ltd.
- Arora, S.P. (1980). **Office Organization and Management**. New Delhi: Vikas Publishing House Pvt. Ltd.
- Ayalew Shibeshi (1992) "**Resource Management in Education**" (Unpublished) A.A.U EdAd 342 Teaching Material.
- _____ (1989). "Regional Disparities in Primary School Participation". The Ethiopian Journal of Education. Vol.11 No.1 September 1989. A.A. (Page 4).
- Berhane Girmay (1999). **Hampering Factors in Preparing and use of Instructional Material in Mekele Zone**. A.A.U Unpublished.
- Brown, W. J. (1985). **Technology and Methods**. New York: McGraw-Hill Inc.
- Burup, Percy E. (1982). **Modern High School Administration**. New York: Allyn and Bacon Inc.
- Campall, Roald et.al (1983). **Introduction to Educational Administration**. Boston: Allyn and Bacon.
- Castetter, W.B (1962). **Administering the School Personnel Program**. New York Macmillan Company.
- Certo, C. (1986). **Principles of Modern Management and Utilization**. A Canadian Perspective, Dubuque: W. M.C. Brown Publishers.
- Chaube. A.S. P. (1996). **School Organization**. New Delhi: Vikas Publishing House Pvt. Ltd.
- Condoli, I, and et. al (1984). **School Business Administration A Planning Approach**. Boston: Allyn and Bacon Inc.
- Dale, Edgar (1954) **Audio Visual Methods in Teaching**. N.Y Holt, Rinehart and Winton.
- Dobler, Donald W. (1977) **Purchasing and Materials Management**. New Delhi; Tata McGraw Hill.

- Durbin, J. Andrew et.al (1989). **Management and Organizations**. Ohio: south Western Pub. Company.
- Geinich, R. et.al (1999). **Instructional Media and Technologi s for Learning**. 6th ed. Metril Prentice Hell.
- Good Carter V. (1973). **Dictionary of Education**. McGraw, Hill Book Company, New York.
- Hoyel, E. and A. McMohon (1986). **The Management of Schools**. London: Kogan Page.
- Knezevich, Stephen J. (1969). **Administration of Public Education**. New York: Hrppar and Raw Publisher.
- Koumi, J. (1994). "Media Comparison and Development: A Practitioner's View." In British Journal of Educational Technology. Vol. 25, No. 1, 1994.
- Lockheed, M.E. et al (1991). **Improving Primary Education in Developing Countries**. A World Bank Publication.
- Mbamba, A. Mauno (1993) **Book of Reading In Educational Management**. Harare: UNESCO Sub-Regional office for South Africa.
- Melaku Yimam (2000). **School Finance Management**. (Unpublished Teaching Material. A.A.U.
- Mohsin. M (1981). **Financial Planning and Control**. New Delhi: Vikas Publishing House Pvt. Ltd.
- Monks, Joseph G. (1982) **Operations Management: Theory and Problems**. **New York: McGraw-Hill.**
- Newby T. J. et. al (1996) **Instructional Technology for Teaching and Learning** New Jersey. Prentice. Hoill
- Nwanko, John I. (1982). **Educational Administration. Theory and Practice**. New Delhi: Vikas Pub. House Pvt. Ltd.
- Sadker, M.P. and D.M. Sadker (1988). **Teachers, Schools and Society**. New York: Random House, Inc.

- Seyoum, Teffera (1988). "The Impact of Legislation on the Development of Modern Education in Ethiopia.": A.A.U. (Unpublished).
- Shaw, R (1992). **Teacher Training in Secondary Schools**. London: Kogan Page. Pub. Inc.
- Simon and Schelter (1970). **Webster New 20th C Dictionary**. New York: W.P.
- Steeps. Et.al (1981). **Handbook of Educational Administration**. 2nd edition. Boston: Allyn and Bacon. Inc.
- Terison R.(1994) **Principles of Management**. Illinois Richard D. Drwin Inc.
- Transitional Government of Ethiopia (1994) **Education and Training Policy**. A.A: EMPDH.
- UNESCO (1984). **The Educational Administrator and Instructional Materials**. Paris: UNESCO.
- _____ (1985). Training Materials in Educational Planning Administration and Finance. Unpublished.
- Wittch, W. A. and Schuller (1953). **Material Resources. Their Nature and Use**. New York: Harper and Brothers Publishers.



①

APPENDIX - I

**ADDIS ABABA UNIVERSITY
SCHOOL OF GRADUATE STUDIES
DEPARTMENT OF CURRICULUM AND INSTRUCTION**

A questionnaire set on "utilization of material resources in implementing the Curriculum in skill Development Center of Tigray"

This questionnaire is to be filled by professionals and supportive staffs. The main purpose of this questionnaire is to gather the available data on the current practice of utilization of material resources in the skill development center of Tigray. It also aimed at identifying the major challenges in the utilization and provision of material resources in implementing the curriculum. Hence, you are kindly requested to fill-in this questionnaire that comprises various issues related to the study. The success of this study directly depends upon your genuine and honest response to the questions.

Thank you in advance for your cooperation.

Bekuression H/Silassie

PART I. BACKGROUND INFORMATION

- Instruction**
1. Please Put "✓" mark in the space provided
 2. Give short answer in the space provided
 3. No need of writing your name.

- 1.1 Name of the institution _____
- 1.2 Sex _____ Zone _____ Woreda _____
- 1.3 Age _____
- 1.4 Martial status _____
- 1.5 Educational qualification _____ Major _____ Minor _____
- 1.6 Work of experience _____
- 1.7 Occupation _____

Part II

Instruction: Please put "✓" mark in the box after you read carefully.

1. From the following the best plan of material resources utilization is:
 - A. Planned and approved by the principal ☐
 - B. Prepared by academic committee and approved by the principal ☐
 - C. Prepared and approved by professionals ☐
 - D. Prepared by the principal and then approved by professionals ☐
 - E. Others _____
2. Where is the source of the budget?
 - A. from the institution ☐
 - B. from the government ☐
 - C. from non-governmental organizations ☐
 - D. Others _____
3. According to your experience and observation to what extent did the skill development center utilize the resources effectively and efficiently?
 - A. it is on the process of wastage ☐
 - B. it is used in appropriate manner ☐
 - C. resources have been stolen ☐
 - D. I don't know ☐

4. Who decided when resources are sent to the training center? Based on what task?
 - A. Principals based on the interest of the trainees ☐
 - B. Principals based on the academic task ☐
 - C. Principals based on the interest of professionals and personnel ☐
 - D. Staff based on the curriculum ☐
 - E. Others _____
5. When did material resources mostly damaged?
 - A. at the opening ☐
 - B. at the end ☐
 - C. at examination ☐
 - D. at training ☐
 - E. at any time ☐
6. Who involve in damaging the material resources in the skill development center frequently?
 - A. Males ☐
 - B. Females ☐
 - C. Both ☐
7. How did the activity of inventory practiced in the skill development center?
 - A. Once a year ☐
 - B. Twice a year ☐
 - C. Once a semester ☐
 - D. Twice a semester ☐
8. From your experience, which one can affect the utilization of material resources seriously?
 - A. Utilizing without planning ☐
 - B. Absence of sufficient maintenance ☐
 - C. Utilizing resources excessively ☐
 - D. un appropriate storekeeping room ☐
 - E. Lack of qualification especially on the part of the personnel ☐
 - F. Inconvenience of the workshops ☐
9. The institution has close relation from
 - A. Regional TVET commission ☐
 - B. Woreda education office ☐
 - C. Woreda administrative council ☐
 - D. Coordinating committee ☐

10. Who control the supply and utilization of material resources effectively in the training process?
- A. Principals ☐ C. Coordinating committees ☐
 B. Professionals ☐ D. Department heads ☐
 E. Others _____
11. Do you have an experience on the utilization of material resource?
- A. Yes ☐ B. No ☐ C. I don't know ☐
12. Is there sufficient skilled manpower in your skill development center?
- A. Yes ☐ B. No ☐ C. I don't know ☐
13. Are there guidelines, rules and regulations documents that can inform about the utilization of material resources
- A. Yes ☐ B. No ☐ C. I don't know ☐
14. Are there available material resources that can help for the process of training in the skill development center?
- A. Yes ☐ B. No ☐ C. I don't know ☐
15. Did the number of trainers create a problem in the utilization of material resources?
- A. Yes ☐ B. No ☐ C. I don't know ☐

Direction II- Following are list of possible factors that influence the extent of the utilization of material resources.

N.B. 4 shows the factors is the most hindering one, while 1 shows the factor is the least in affecting the utilization. Hence, the ranking will be from number 1 to 4.

16. 4= high 3= medium 2= low 1= very low

No	Items	High (4)	Medium (3)	Low (2)	Very low (1)
1	To what extent is the utilization of material resources				
2	Professionals, supportive staff participation in decision making of material resources				
3	What is your participation in controlling and utilizing of material resources in the skill development center				
4	What is the degree of maintenance capacity				

	in the skill development centers				
5	To what extent is the responsibility of professionals supportive staff to the utilization of material resources				
6	What is the degree of quality, supply, utilization and amount of material resources				

17. Availability of material resources in the skill development center is

No	Items	High (4)	Medium (3)	Low (2)	Very low (1)
A	Amount of raw materials				
B	Amount of books				
C	Availability of machines				
D	Number of computers				

18. Efforts in relation to their utilization in protecting material resources

No	Items	High (4)	Medium (3)	Low (2)	Very low (1)
A	Principals				
B	Professionals				
C	Supportive staffs				
D	Students				
	Total				

19. Efforts of principals in controlling and evaluating for effective use of the material resources

No	Items	High (4)	Medium (3)	Low (2)	Very low (1)
A	In planning				
B	In organizing				
C	In supplying				
D	In allocating				
E	In coordinating				
F	In controlling				
	Total				

20. Which resources are damaged frequently in the skill development center?

No	Items	High (4)	Medium (3)	Low (2)	Very low (1)
A	Tables and chairs				
B	Boards				
C	Flours				
D	Wells				
E	Electric lights				
F	Doors and windows				
G	Water pipes				
H	Fences				
I	Machines				
J	Computers				
	Total				

21. To what extent is the quality and supply of material resources in the skill development center?

No	Items	High (4)	Medium (3)	Low (2)	Very low (1)
A	The nature of classroom				
B	The nature of workshops				
C	The up-to-dateness of books, machines and raw materials				
D	The amount of resources supply				
	Total				

22. Constraints that impede for the implementation of the curriculum

No	Items	High (4)	Medium (3)	Low (2)	Very low (1)
A	Absence of workshops and classrooms				
B	Lack of machines and resources allocated				
C	Shortage of the program/time				
D	Unrelatedness of the training system with the world of work				
E	Absence of qualified and skilled professionals				
F	Ineffective utilization material resources				
G	Lack of up-to-dateness of resources				
H	Delay of budget				
	Total				

23. What is the contribution of material resources in implementing the curriculum when effectively utilized in the skill development center?

No	Items	High (4)	Medium (3)	Low (2)	Very low (1)
A	Enhances learners interest				
B	Increase learners motivation				
C	Combined theory with practice				
D	Promote quality of the training				
E	It can promote concrete practice				
F	It creates skilled manpower				
	Total				

24. Discuss the factors that hamper the effective utilization of material resources in implementing the curriculum?

25. From your experiences, what can you suggest for the effective utilization of material resources in the skill development center?

APPENDIX II
ADDIS ABABA UNIVERSITY
SCHOOL OF GRADUATE STUDIES
DEPARTMENT OF CURRICULUM AND INSTRUCTION

Interview Guidelines for principals and Woreda education officers in Tigray Region.

Name of the SDC _____ Zone _____ Woreda _____

Sex _____ Age _____

Marital status _____ Occupation _____

Educational background _____ Work experience _____

1. To what extent is the responsibility of professionals, supportive staffs in utilizing the material resource efficiently and effectively in implementing the curriculum?
2. Who prepares the general plan?
3. To what degree are the material resources of the SDCs found to be sufficient?
4. What is the controlling mechanism of resources?
5. Do they have enough qualification and experiences those who are assigned as supportive staff of the SDC?
6. How many times did inventory takes place in a year to control the utilization of material resources?
7. Mention some of the material resources that are damaged frequently? What about their maintenance?
8. What are the factors that hinder the effective utilization of material resources?
9. What do you suggest and recommend to solve the problems of effective utilization of material resources in implementing the curriculum?
10. What is the degree of collaboration with the nearby woreda education office?
11. Do you think the effective utilization of material resources has a significant contribution for the implementation of the curriculum? How?