ADDIS ABABA UNIVERSITY
SCHOOL OF GRADUATE STUDIES

AN ASSESSMENT ON THE PRACTICE AND PROBLEMS OF TRAINING MATERIALS IN ADDIS ABABA TECHNICAL AND VOCATIONAL EDUCATION AND TRAINING COLLEGES

BY

ALI MOHAMMED

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A THESIS SUBMITTED TO
THE SCHOOL OF GRADUATE STUDIES
ADDIS ABABA UNIVERSITY

IN PARTIAL FULFILLMENT OF THE REQUIREMENTS
FOR THE DEGREE OF MASTER OF ARTS

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JUNE 2010

Acknowledgements

First and foremost,I would like to express my deepst gratitude to my advisor, Dr. Jeilu Oumer for his unreserved and invaluable guidance and comments which played a pivotal role in the completion of this paper.

I would also like to extend my profound thanks to my wife W/ro Kerat Ebrahim for her continuous encouragement and support during my study. Moreover, I also extend my heartfelt thanks to my sisters, W/ro Hikumu Nuru and W/ro Lemlem Ebrahim, whose inspiration was so great that it gave me the courage to whole heartedly follow my studies.

My brothers Ato Abrar Nuru, Kemal Abdulwahab, Wassie Nuru, Suad Ebrahim and Anwar M/salhi also deserve due thank for their moral and material support which helped me a lot.

I am indebted to my friends particularly Zeru Muluneh, Zewdenh Arega, Dawit Girma, Temsegen Takele, Yosef Nega and Abraha Kahsay for their material supports, constructive comments and moral encouragement which I found them to be very much helpful to the progress of this study.

The school of graduate studies of Addis Ababa University must also be acknowledged for financial sponsoring of this research work.

Finally, I also express my thanks to all those who cooperated with me in filling the questionnaire and who were willing to spend their time for the interviews.

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Acronyms and Abbreviations

AACG	Addis Ababa City Government
GDS	German Development Service
ECBP	Engineering Capacity Building Program
ESDP	Education Sector Development Program
ETB	Ethiopian Birr
ETP	Educational Training Policy
ETPE	Educational Training Policy of Ethiopia
GTZ	German Technical Cooperation
ILO	International Labor Organization
MoE	Ministry of Education
MRO	Maintenance, Repair and Operating Inventory
MSE	Micro and Small Enterprise
NGO	Non Governmental Organization
SPSS	Statistical Package for Social Science
TVET	Technical and Vocational Education and Training
TTLM	Teaching, Training and Learning Materials
UNESCO	United Nations Education, Scientific and Cultural Organization

Abstract

The purpose of this thesis was to assess the practices and problems of Training Materials and facilities management in selected TVET colleges of Addis Ababa more specifically, the study was intended to improve the training and identify the potential constraints and the drawbacks encountered. To this end the study employed descriptive survey research method. Accordingly, questionnaire, interview guide and observational checklist were prepared, pilot-tested and administered to 196 sample respondents consisting of 94 trainers, 93 trainees, 3 deputy deans and 6 administrative staff. A total of 187 (95.4% percent) filled and returned the questionnaire. In addition, interview was conducted with nine of them. Moreover, document analysis was used to supplement the data gathered through questionnaire and interview. Finally, the data gathered were analyzed using percentage, chi-square T-test as well as qualitative analysis. Finding from the data analysis revealed that significant majority of the trainers and trainees did not have any information about training materials and facilities management and availability of training materials management guideline. Furthermore, the data suggested that the machines were under utilized and were most of the time idle due to lack of skilled person in maintenance. In addition most of the trainers' knowledge and experience is related to theoretical part. Furthermore, the result indicated that training materials and facilities such as training hand tools, machines, teaching aids and reference books were inadequate. To alleviate the problems the following measures should be taken. Such as raising the awareness of the trainers and trainees, providing short term training to trainers in the area of training materials and facilities management and establishing partnership with donor organizations and improving the supply of training materials facilities to assist the smooth effective delivery of training and its best outcomes.

CHAPTER ONE

1. Introduction

1.1. Background of the Study

Education is one of the most important sectors that require huge investment. It is assumed that the education sector deserves such an investment, because it is a key contributor to the economic development of countries by providing a human capital that brings about skills and increase productive capacity.

The government's National development endeavors demand the supply of skilled human power at different levels. The realization of this endeavor requires the entry of young people into the agricultural-related job opportunities, including small scale industries and strategies that encourage young people to become self employed based on a firm education and training background, including training in a wide variety of work-related skills through TVET programs (ESDP-III, 2010).

The economy in developing countries failed to create jobs; self employment option is being under taken in order to earn a living. Self employment in the informal sector is characterized by hand-to-mouth way of living and acts as a safety value in response to joblessness in the formal sector. By contrast, self-employment with more formal orientation, significantly contributes to the economy and decent work (Yekunoamlak, 2006).

The government of the Federal Democratic Republic of Ethiopia introduced the new Education and Training Policy (ETP) and Education sector strategy in 1994 that made Technical and vocational Education

development as one of the priority areas in the education system. The policy and strategy stipulates the provision of middle level technical and vocational Training in areas of different sectors to students that have completed the general education (Grade 10). The policy also emphasizes the need to expand technical and vocational training facilities, development of relevant curriculum, raising the standards of trainers etc.

To this end, as indicated in the ETP of 1994, the objectives of TVET program will be to develop self-reliance in solving personal and societal problems and develop reasonable skills in the use of tools, machines and equipment and their maintenance as well. These enrich trainee's knowledge and practical skill through group work. Develop positive attitudes for safety and manual works as well as awareness for optimum utilization of training materials, and this enables to work as an employee in any of the specific specialization (ETP, 1994).

Having these policy objectives as a framework, one of the strategies in realizing the new education and training policy in the area of TVET is developing relevant curriculum which suits training needs of diversified areas meeting economy's demand for middle level skilled work force, preparation of training materials and their implementation.

Many African countries, including Ethiopia, are not quite successful in their educational programs. Programs are inefficient and there is a mismatch between what students learn and what the world outside the school expects (Wanna, 1998).

The ESDP-3 strategy document has outlined a comprehensive development vision for the TVET sector. Economic policy and strategy of the country requires technical and professional skills in broad and specific occupational fields. It is with this intention that the government

of Ethiopia has put in place a comprehensive capacity building development program aimed at strengthening its human resource potential through TVET and having the objective of providing quality education and training in the TVET sub-sector. To this end, the curriculum was revised, skill upgrading training was given to TVET teachers, and expatriate teachers were employed to overcome the shortage of teachers.

To create quality, demand driven and outcome based training system (that can provide adequate and skilled technical and vocational human resources at different levels for the economy) and to bring development for the industrialization process to achieve poverty reduction objectives in the country. The major objective of TVET to day is to meet the challenges of preparing the work force that plays effective role in economic development of a country.

Evans and Herry (1978:4) mentioned the three basic objectives of any public vocational training program as, meeting the manpower needs of the society, increasing the options available to each student and serving as a motivating force to enhance all types of learning. Material management has reached a stage today when it can no longer be performed efficiently without specific knowledge and training, irrespective of the nature of workshop's manufacturing operations. Its dependence over a widely dispersed area has made it imperative to be treated as a responsibility of purchasing, material planning control, production scheduling, production management stores management, inventory control and disposal of scrap, supplies and salvage etc. Yet the hard fact remains that material management is an activity or more precisely, a function. But so far this has been overlooked. Nevertheless, the integrated concept is gaining strength and the top management has come to realize that workshop prosperity is much more dependent on

such an integrated approach to its organizational problems in future. The importance of training materials management in any industry, workshop or organization cannot but be too strongly emphasized. It not only affects a particular industry, but indeed the whole of the economy of a nation (Datta, 1980).

Regarding this point; UNESCO (1992) has put this fact as "one of the challenges of educational managers in developing countries is meeting of constantly soaring social demand for education." Today many countries are increasing their enrollment rates of school children while the scarcity of educational resources relatively remains constant or decreasing. In connection to this, Sherleker and Others (1988:476) noted the importance of management as follow:

> *Material management is important because we are living in the era of shortages of all kinds of materials. Optimum utilization of available scarce resources and preventation of all types of waste is required by adopting scientific system of management and control of materials.*

The scope of material management is one of the issues in management. Different writers see the scope of material management from different angles. Datta (1986) for instance, states that the scope of material management is essentially an activity of an enterprise for the procurement and use of materials that is distinctly separated from the process of procurement and uses of human resources. In relation to education, UNESCO (1992) explained material management as concerned with "... the planning, acquisition, allocation, distribution and controlling the proper use as well as maintenance of educational materials and facilities in order to realize the objective of the education system."

1.2. Statement of the Problem

In order to impart effective training, materials are quite indispensable. Concerning this the Education and Training Policy Document of Ethiopia (1994:28) states that

> *Due attention will be given to popular participation, in the production, distribution, utilization, up keep, care and safety of educational materials, educational technology and facilities.*

By definition a training institution is one, which, among other things, makes use of training facilities in improving training programs. There are no areas of the training program where this is more essential than vocational education and training (ILO, 1999).

According to Nebiyu (2000), the role of educational materials in teaching learning process is believed to be crucial and learning is believed to take place through the primary assistance of educational materials and equipment. This shows that the physical facility and material resource should be sufficient to create conducive environment for effective training program. The size and arrangement of facilities should be adjusted in such a way as to provide the use of various departments that offer training program in the respective training institutions that will use the shops, laboratories, classroom, libraries and the likes (UNESCO, 1996).

The effectiveness of TVET institutions regarding quality teaching, learning and training outcomes depends upon the quality and quantity of equipment and material resources as well as their effective utilization. Regarding this point, facility may either limit or help to develop a training program, depending upon their adequacy (Reilly, 1996).

It is also important to examine material management from the point of view of the actual problem in our situation. In our country, especially

TVET institutions, it seems that material management has not been given due concern. The entire administration of training materials appear to be left only to the store keepers or others who do not feel a sense of responsibility or do not have the ability to manage it. Thus, to show the gap, what is actually happening, what should happen is an important issue to be studied.

Due to this and other features it has become a challenge to bring change in the overall education system. This has necessitated the study of training material management.

The reality that technical and vocational training consumes huge amount of resources and the demand for training in most developing countries, which also holds for Ethiopia, was growing faster than the resource base. Studies undertaken in this area have revealed that TVET colleges which have relatively little contact with the communities are less likely to make remarkable advances and success in the improvement of technical and vocational training that can not be achieved without the contributions made by community participation.

Obviously, training material's management problems are again functionally related to quality, quantity, cost and a complete fusion of these functions into an integrated whole will determine its operating characteristics and total efficiency. Based on these issues, one could argue that most TVET colleges in Addis Ababa do not have good training workshops for practical work, adequate equipment for training in the course they offer, lack of effective inventory controlling, and handling of training materials management (TVET strategy, 2006).

The growth and expansion rate in the industrial sector necessitates the establishment of compatible storage systems. To meet the requirements

in the modern industry, pioneers in storage sector have developed compatible storage systems and equipment. The recent developments have changed the concepts. Selection of proper storage system and equipment, making proper use of available space, not only increases the efficiency, but it is also economical, faster and easier. Training materials and work shops are equipped with standard approved facilities, special tools, equipment, benches and machines. In addition to an inspection well, a ramp for heavy equipment inspection and repair is also provided (www.equipcokuwait.com/abt.html, 1990).

In view of the above mentioned statement of the problem, the study attempts to answer the following research questions.

1. To what extent are the training materials and resources available in TVET colleges?
2. To what extent the available training materials and facilities are used?
3. What are the major problems encountered in the maintenance of facilities and training materials management?
4. What strategies are in place to improve the training materials and facilities management in TVET colleges?

1.3. Objectives of the Study

The general objective of the study was to assess the practice and problems of training materials and facilities management in Addis Ababa TVET colleges and forward possible solutions.

1.3.2. Specific Objectives

- Assessing the availability and utilization of training materials.
- To identify the utilization of physical facilities of the colleges.

- To assess the availability of storage and workshops facility and handling of the existing facility.
- To examine the maintenance and store operation capacity of the colleges.
- Identity the problems encountered with purchasing, inventorying, handling and distribution system of the training colleges.

1.4. Significance of the Study

This study is basically designed to investigate the problems of training materials and facilities management in Addis Ababa Government TVET colleges. Therefore, the findings of this study may have the following contributions:

- The study is hoped to provide information about the current status of physical facilities and training materials resource management for the administrative staff.
- The findings of the study may help others to see the extent to which the training colleges understand and appreciate the importance of training materials and facilities management.
- The finding of this study may also serve as a spring board to initiate other researchers who wish to investigate a further study on the situation in a broader scope.

1.5. Delimitations of the Study

Although training programs in TVET are going on at all governmental and private colleges, it is expected that problems related to training could commonly be found in almost all TVET colleges. However, this study was confined to assess the problems of the training materials and facilities in three governmental TVET colleges in Addis Ababa to make the scope of the study more specific and manageable.

1.6. Limitations of the Study

Some of the limitation of the study were lack of proper record keeping the current turn over of the management body. The researcher try to find previous un organized documents to reveal the turn of the management body.

1.7. Definition of Key Terms

The following terms are contextually defined as used in this study:

Equipment: refers to non expandable items which are more or less permanent, have along life, and quality as capital expenditure (Stoops et, al, 1981).

Inventory control: The school administration functions of controlling, coordinating, and regulating the work of procuring and disbursing materials in accordance with the inventory (Good, 1973).

Maintenance of the school plant: repair, replacement and upkeep of the school plant and equipment

Material resource: Are any items that are designed, modified and prepared to assist teaching and learning operations (Mbamba, 1992)

Material resource management: Is the aspect of managerial functions concerned with the planning, acquisition, allocation, distribution and controlling the proper use as well as maintenance of educational materials and facilities in order to realize the objectives of the education system (Mbamba, 1992).

Physical facilities: facilities (educational material) any object or unit areas space designed and organized deliberately to support and use teaching and learning operations (Mbamba, 1992).

1.8. Organization of the Study

The study is organized in five chapters. The first chapter deals with background of the study, statement of the problem, significance, delimitation and limitation of the study. Chapter two presents the review of literature and the third chapter deals with research methodology. Chapter four focuses on presentations, analysis and interpretation of the data collected and chapter five presents the summary, conclusions and recommendations of the study.

CHAPTER TWO

2. Review of Related Literature

2.1. Concept and Essence of Facility and Training Materials Management in TVET Sub-Sector

Facility and training Materials Management is an indispensable core activity of all types of workshops. All workshops are continuously involved in storage and stock replenishment of different types of training materials. Training materials management covers efficient management of Training materials planning and programming, purchasing, inventory control, receiving, warehousing and store-keeping, materials handling and disposal of scraps and surpluses.

Material management is the function, which aims for integrated approach towards the management of materials in an industrial undertaking. Its main objective is most cost reduction and efficient handling of materials at all stages and in all sections of the undertaking (Kumar and Suresy, 1998).

Integration of management of materials functions at different levels within an industry as well a question of functions of quality, quantity and cost through a total synthesis of different methods, techniques and systems. Management-goals today are not necessarily confined to achieve control some how, but have been extended into the area of achieving a complete break through in the face of rapid technological changes.

Adequate resources and training materials includes content that is reflected in curricula and materials for the acquisition of skills and knowledge well managed classrooms, workshops machines and hand

tools facilitates the training process. Moreover, the facility of TVET colleges the water supply, health center, internet access, trainers and trainees cafeteria, sport fields, standard library and workshop are this that create a conducive environment for the training process of the colleges. Therefore there is a need of professional person to manage the training materials and facilities. It is necessary to strengthen and to improve the quality of training, which is the basis of the outcome and competency-based system (ESDP-III, 2005).

Naturally studies will first attempt to state in general terms what is operationally feasible, enquire into the theories on which practices rest and then proceed to develop techniques and methods with which to deal with the task of management (Datta, 1978).

According to Ahuja (1998), materials management provides tools and techniques, most of which are very simple, to reduce material costs substantially such as inventory control. In addition to reducing material costs, efficient materials management can bring about reduction of foreign exchange requirements by getting the maximum value out of the available foreign exchange requirements or by reducing the value of imports, thus contributing substantially towards narrowing the foreign exchange gap.

All the sections of the materials management strive to attain the fundamental objective of management. It should also be noted that inventory control is an integral part of the materials management and it is confined to the internal control of the production materials (Mahajan, 2002). Thus, material management must have the proper position and status in corporation organization. It must be established high in the corporate structure in order to carry out its responsibilities, which

involve the expenditure of huge sums of money and directly affect the long term and day to day success of operation.

The definition of materials management covers a lot of activities which is accomplished in an organization and given in a wider sense of its function. From all the above definitions of authorities on Material Management, the one with a common agreement and with the little disagreement is a definition given by Ballot (1980) stated as follows.

> *Materials management can be defined as that coordinated function responsible to plan for acquire, store, move and control materials and final product to optimize usage of facilities, personnel, capital funds and to provide customer service in line with corporate goals.*

This definition implies that, materials management is an organized, coordinated control and utilization of materials throughout an organization for the acquisition of effective and efficient result. So as Materials Management has a great impact on the organization's activity, educational institutions should play a great role in managing these scarce resources in a proper way.

Executive skill in the process of management control lies in essence, therefore, how efficiently one can exercise that skill through systems, procedures and methods applying effective techniques and correct tools of control. In fact, management did not see a dividing line between the skill in procuring of those materials and in using them, but has eventually been led to accept the idea that although there is a distinct difference they are also relative. This matters not much since every organization relies on supplies of materials and parts as an aid to manufacturing activities or production process. The actual budgeting makes it possible to gain better control and managing. Instead of over expenditures for goods and services, we need to correlate these

purchases to the actual requirements of the manufacturing functions of the workshops (Chandan, 1987).

Materials management is thus essentially an activity of an enterprise for the procurement and use of materials distinctly separated from the process of procurement and use of human skills and labors for the ultimate deployment to attain some predetermined objectives (Datta, 1998).

Materials management is not an exact science. The managing of material function in any organization requires constant balancing of interrelated objectives, which more often requires sacrifice of one objective for the achievement of the other. Poor material performance may jeopardize any plants capacity to provide the goods and services that the society so urgently requires. However, as objectives vary in relative importance from industry to industry, one may concentrate efforts more on one rather than the other (Datta, 1998).

Important resources like people, time, capital, raw materials are all finite and limited; they are all scarce in nature. Therefore, management must make conscious efforts to get the most of these resources (Chandan, 1987). By the same token, Melaku et al (2000) also believe that management is an instrument specifically charged with making the resources productive. Therefore, management is highly concerned in the achievement of organizational objective through efficient and effective utilization of the available materials. It provides useful techniques and methods that enable the most effective combination of the available human, material, financial and time resources.

Gaminie (2006) in his book has written, "Management is the attainment of pre-established goals by the direction of human performance along

pre-established lines." According to Gaminie management is essentially personnel management. We do not build automobiles, air planes, refrigerators, radios etc. We build men and women and these human resources build products. Human resources are our great assets. Training is the act of increasing the knowledge and skill for doing a particular job, the development means growth of individual in all respects. Development is a long term educational personnel get conceptual and theoretical knowledge (Aderson, 1975).

Good training Materials Management and cooperation benefit large-scale reductions in stock of obsolete, redundant and surplus materials which are unnecessary and often crippling in their effects. It can be seen that the concept of facility training Materials Management is that highly skilled, closely joined team of specialists which will in future control materials from the time of the raw material requisition right through all the stages of training and storage until the finished product is ready for sale or dispatch to the customer. In the manufacturing organizations, Materials being an important and inevitable input, directly affects the profitability of any manufacturing concern. It is observed that irrespective of the size of an enterprise, the expenditure on materials is a major item of the budget. The cost of materials in the different industries may range from 50 to 85% of the production cost, on an average about one-third of the total assets of a company represent the investments in inventories. The expenditure made on materials is money invested in inventories, cost of storage, transformation costs, insurance, wastage etc (Aderson, 1975)

Gejnozska (1983) states equipment as, "items which are (1) non-expandable; (2) generally last for long period of time, (3) retain their original shape and appendance with use, type writers, and musical instruments". In line with this, Jacobson, et al (1873) asserts that

equipment is often classified as: permanent or movable. Permanent equipment refers to articles that are part of the building, electric light fixtures, heating and ventilation fixtures, and any other materials permanently fastened in the building and is moved only up on requisition by the principal, and then only for unusually good causes. On the other hand, movable equipment refers to chairs, office furniture, projection instruments, portable radio, books, duplicating machines and so forth.

The quality of any TVET program is largely dependent up on the degree of the organization and its efficient utilization of training facilities. Regarding the utilization of available facilities, ILO (1999), states that if training institutions are to utilize more fully the facilities already existing in the local communities, their programs of vocational education and training should be much more significant than they are. They are characterized by the presence of adequate, well planned, and properly equipped physical facilities, which are very much similar in nature and operation to the facilities in the actual working places (Antonis, 2006).

To meet this demand TVET colleges have increased in number, the training areas have been diversified, enrolment has increased, and the trainees are prepared to perform functions valued and needed by the agricultural Development led Industrialization Strategy of the country (ESDP - IIIO, 2006).

2.1.1. Purpose of Facility and Training Materials Management

Training materials and other service facilities are subject to deterioration due to their use and exposure to environmental conditions. If this process of deterioration is not checked, it may render them unserviceable. It is therefore necessary to attend to them from time to time, to repair and recondition them so as to enhance their life

economically proper attention should be given to protect the materials, machines equipments and components from undue wear and thus protect them from failures (Anderson, 1975)

The most important purpose served by facility training materials management is to provide uninterrupted service to the manufacturing and training divisions. As Gopalak Rishnan and Sandaresan (1998) states the purpose of training materials management can classified as follows:

To receive raw materials, components, tools, machines, equipments and other items account for them. In order to meet the demands of the consuming departments and to minimize obsolescence, surplus and scrap material management should be carried out through proper codification. Besides to this, a highlight stock accumulation, discrepancies and abnormal consumption are effects of control measures. It is also helps to provide adequate and proper storage of various items and to ensure good house keeping so that materials handling, material preservation, stocking, receipt and issues can be done adequately by assisting in verification and supporting information for effective purchase action.

Better management of training materials and facilities should result in more effective outcomes. Therefore training materials management will have clear objective to manage resources under their control and will be held accountable for the achievement of targets set. They will also make sure that the training programs meet the needs of the local community. TVET will provide access to rural people so that they can enrich their own environment and improve their living standards. Preventive maintenance shall also be carried out for all college facilities to reduce cost of replacement of equipment, furniture and other facilities.

It should be remembered that the purpose of materials management be in agreement with the total objectives of the organizations. It should assist and facilitate the goal achievement of the organization. The basic objectives of the total organization might include: profit maximization for survival and growth, maximization of customer service, technological innovations to overcome resistances to growth and competition, good employer-employee relations and other social objectives (Datta, 1998).

Therefore modern material management should provide many simple tools and technique which offer great scope for cost-reduction to improve the profitability of an organization.

2.1.2. Efficiency and Effectiveness of Facility and Training Materials Management

Efficiency and effectiveness are the two important resource bound concepts that an educational leader should distinguish the difference between them. Efficiency means "doing things right" and effectiveness means" doing the right things" (in Stonner et al, 1995).

The two terms are not quantified and as a result used in comparative terms. Efficiency is an "input-output" concept. It is achieving the organizational goal in cost-effective manner. Hence, scarce resources like human, materials, time, and finance are used to the optimum possible without waste (Chandan, 1987). Effectiveness, in contrast, involves choosing the right goals. The out put of the organization should be in line or in agreement with the overall objective (Levacic, 1989).

Effectively and efficiently managing materials may lead to success as much as improper and poor handling of the same resources may lead to failure. Material management is the function, which aims for integrated

approach towards the management of materials in an organization undertaking. Its main objective is cost reduction and efficient handling of materials at all stages and in all sections of the undertaking. Its function includes several important aspects with materials such as purchasing, storage, inventory control, material handling, standardization etc (Kumar and Suresh, 1998).

Material management is defined as the function responsible for the coordination of planning, sourcing, purchasing, moving, storing and controlling materials in an optimum manner so as to provide a peer-decided service to the customer at a minimum cost. From the definition it is clear that the scope of materials management is last (Kumar and Suresh 1998).

2.1.2.1. Planning, Efficiency and Effectiveness of Training Materials Management

Planning is a mental process involved in developing and formulating a course of action. Without it, the activities of the various components may well become a series of random actions with meaningless objectives. Specifically materials planning are primarily involved in the formulation of an intelligent scheme of action designed to accomplish its objectives effectively and economically. If future events could be determined with accuracy, then a plan of action could be developed under the conditions which future could bring. Future, however, is uncertain and forecasting is at best a game of educated guesses. This element of uncertainty adds confusion and confusion needs planning of materials to achieve order. Thus, planning is a function that every materials manager performs regardless of his level or location in the organization (Datta, 1998)

Materials planning in every organization plans to meet its corporate goals in a specific time-period. These goals are both long-range and short-

range. With the long-term plan, primarily based on a forecast of product demand, a basis is developed for utilization of men, materials, machines and other resources. Materials Management has to develop and plan materials availability, including procurement of parts and supplies, storage and handling, not only on a long term basis but also according to short term requirements. Again, inventory planning to provide finished goods to meet customer demand will come at the other end the responsibilities.

Scheduling, when plan is completed, the breakdown of the long term plan is provided with a master schedule for the short term period.
The materials management department then has to ensure that it meets materials requirement according to this schedule.

In the whole network, materials control plays a pivotal role in materials planning, progressing, purchasing and inventory control etc., in coordination with quality control, providing the basis for many economic benefits and contributing to the department efficiency of an organization. Factors such, as obsolescence, losses and wastes, etc., as well as many other materials problem also call for decisions which have far-reaching effects on corporate goals (Datta, 2004).

Based on the objects and requirements of the vocational trainings, the material planning is done. This involves estimating the cost per trainee requirements based on the nature of the discipline, preparing material budget, for casting the levels of controlling, scheduling the orders and monitoring the performance in relation to the objectives intended.

As IIEP/UNESCO/1995) noted that a plan is a package of objectives and goals, the available resources and constraints and the various policy instruments and strategies to be used within a time horizon. When

planning for specific skill training must ensure that those who have received the training are likely to get jobs in the market. This is because unit cost of educational training is relatively high at that level. What the plan should insure in that the opportunity is open to all upon hard work and capability.

The most important responsibilities of a vocational training managers and trainer are planning materials integrating and executing plan. Almost all training programs, because of their relatively short duration and of the prioritized of resource require formal, detailed planning. As Kerzner (2002) noted the integration of the planning activities is necessary because each functional unit may develop its own planning documentation.

Planning, in general, can best be described as the function of selecting the organizational objectives, and establishing the policies procedures and programs necessary for achieving them.
One of the objectives of planning materials is completely define all works, activities required for the training, that is will be readily identifiable to each participant in the training program.

According to UNESCO (2000) the reason for material planning in Vocational training is that it improves efficiency of the operation and training skills.
Planning in material resources utilization also calls for the allocation of personal and financial resources. The demand driven training method involves the training purchasers, experts and managers in the field. Follow-up efforts and support to the trainers and trainees is also essential. It is imperative that the necessary material resources for the training are assured.

This helps to identify the training outcomes what skills, knowledge and attitudes do the trainees should acquire at the end of their training and this helps to communicate with the trainers and other enterprises regarding the achievement of training objectives; further training needs, problem experienced during training and other issues.

According to (Anderson, 1975), planning for efficient work place, each workplace is a miniature factory with its own 'receiving and production areas. Each workplace should be tied into the overall flow pattern.

This can be done by adopting and determining the type of material or the direction of the activity flow so that the desired direction of flow through the workplace will be attained. In this case items to be included in the workplace are machine type, bench, conveyors, stock containers etc, which help to make a layout plan drawing rough sketch of major items in the workplace to indicate direction of material flow, source of materials and to indicate destination of materials from the workplace and their direction. Wherever required, these also indicate direction of waste or scrap. To check this layout plan from 'motion' economy principles point of view and show distances in this layout plan of the workplace, finally draw a final plan to scale on an operation chart.

Material requirement planning, other than education is exercised for operation improvement through cost control. The reduction of cost is mainly the cost associated with the acquisition and management of materials. Furthermore, other than cost minimizing the holding of inventory is also another aspect considered for organizational effectiveness (Cartwright et al., 1993; Bezabeh, 1990).

Efficiency of materials or equipment management determined by the power input and labor required. Both of these must be expressed in units

of loads handled in order to measure efficiency. From the point of view workshop layout and materials management, efficiency can measured by the space required in storing the equipment and by the space required in operating the equipment. Generally the determination of equipment for maximum efficiency requires making various layouts to suit the different types of equipment. (Anderson, 1975) stated that:

Speed is of importance, where materials are to travel for long distances, and time factor is also importance where as weight affects the total power requirements. Therefore dead weight, efficiency of the equipment will be less. Weight should also be considered in connection with safe loading of the floor. Poor workshop, improper warning signs, blind corners, and the use of wrong equipment for a given job also create hazards.

The effectiveness of the material management system for its effectiveness and overall economy must be designed in a systematic, rational and logical way by careful analysis and evaluation of the entire process so as to implement a well planned material flow pattern. According to Anderson, 1975) the task of designing an effective material management system should be carried out in increase production and flexibility, reliability, performance, ease and low maintenance, standardization and maximum utilization of handling equipment.

2.1.2.2. Maintenance and Inventory of Training Materials Management

Training machineries and equipment of TVET colleges serve for many people at large through out the year by the trainee. Due to this and other reasons, training materials need continuous maintenance and follow up. Ray, et, al (2001) stress the point that maintenance enables the provision of services with out stoppage and in addition Elmo (1963) defines maintenance as continuous process of repair and replacement of pieces

of property whether grounds buildings or equipment as nearly as possible to the original condition of completeness. It also goes further and includes good care and wise of materials and equipment in a proper way.

Maintenance management is concerned with the direction and organization of resources in order to control the availability and performance of industrial plant to some specified level. Maintenance management is thus a restorative function of production /operations management entrusted with the task of keeping the machinery, equipment and plant services ever available in proper working condition. While the main objective of maintenance has been to minimize breakdowns and down time, the strategies adopted by maintenance management to achieve this goal have undergone a tremendous change in the past few decades. Not very long ago the meaning of maintenance has been just to repair the faulty machines and put them back in order in minimum possible time (Anderson, 1975).

The main objective of maintenance, according to Sharma (2003), is to maximize the availability of plant and equipment for productive utilization and extending the life span of plant as a result of minimizing the tear, wear and deterioration of the equipment. In addition to this, it reduces the cost of lost production which will be created due to breakdown and to ensure safety of personnel.

As Denyer (1979), stated the purpose and importance of maintenance is to give cost records which are helpful when it come to considering plant replacement and to reduce the chance of scrap in production as well as to improve the morale of machine operators or trainees. As a result it reduces accidents and fire risks. However; preventive maintenance has not been practiced in many TVET colleges. This is because there are

more acute areas that demand priorities. The other reason is lack of an easily administered inspection services. Thus, TVET colleges have to develop the culture of preventive maintenance for their materials and equipment, in order to develop their culture of preventive maintenance, in order to prevent further damage and cost.

Types of maintenance

Maintenance can be classified into the following categories:

1. Corrective or breakdown maintenance:

Involves correcting any fault that develops in a device as soon as possible, before it becomes worse and causes a breakdown of the device. Before you can maintain any device, you should know how it works. Completed devices do need expert knowledge and considerable understanding of how the devices work before they can be maintained but many devices or appliances in common use can be easily maintained with a little knowledge and care. In this type of maintenance no attempt is made to prevent the occurrence of breakdown.

Typical cause of equipment and machine breakdown may be a failure to replace workout parts, lack of lubrication, neglected cooling system, in difference toward minor faults, and external factors such as too low or too high line voltage, wrongful etc. And Indifference toward equipment vibrations, unusual sounds coming out of the rotating parts, equipment of getting too much heated up.

2. Preventive maintenance:- consists of routine actions taken in a planned manner to prevent breakdown and to ensure operational efficiency to the extent it is economically and practically possible. In preventive maintenance periodic inspection is carried out to anticipate breakdowns and to prevent them before they occur, instead of allowing the breakdown to happen and then to take action. The

underlying principle is that prevention is better than cure. Therefore, for adopting preventing maintenance policy, one must have the data showing the frequency with machines have maintenance free performance for a given number of operating hours (i.e. breakdown time distribution). As Denyer (1979) states the objective of preventive maintenance is:

> *To minimize the possibility of unanticipated production interruptions by locating or uncovering any condition which may lead to and plant equipment and machines always available and ready for use. To maintain the value of the equipment, machinery and other service facilities by periodic inspector, repairs, over having etc. In addition, it reduces the work content of maintenance jobs and ensures safety of life of employees and trainees.*

3. Scheduled Maintenance:- the aim of scheduled maintenance is to minimize breakdown. This system provides for inspection, over haul, lubrication and servicing of certain machines at predetermined dates. Over hauling of machines, cleaning of tanks and while washing of building is normally done in this manner. The frequency of such maintenance job is predetermined and scheduled or program of maintenance work to be done is prepared in advance. Considering available idle time of the equipment, this type of maintenance utilizes the idle time equipment without much disturbance in the production schedule. Mere scheduling, however, is not sufficient. It cannot ensure completion of work in time because the nature of details of work required to be done remains unknown. It may therefore lead to increase down time due to non-availability of requisite skills and materials.

In inventory management: the inventors are stock materials of any kind stored for future use, mainly in the production process. Thus, today's inventory is tomorrow's production. However, semifinished good awaiting

use in the next process or finished good waiting release for sale are also included in the broad category of inventories, which are nothing but idle resources. Therefore, inventories are materials or resources of any kind having some economic value, either awaiting conversion or use in future. Apart from these, there are also many indirect materials such as, maintenance materials, fuels and lubricants, etc. which are used in a manufacturing organization (Kenneth, 1989).

According to Datta (1998) there are many types of inventories, such as raw materials and production inventories, components and service parts as well as work-in-process and finished goods inventories. All of them do not necessarily require the same treatment and, therefore, policy with regard to each may also differ according to their types and need in different types of industries.

Raw materials and production inventories and other supplies, parts and components which enter into the product during the production process generally are from part of the product. In process inventories there are semi-finished, work-in-process and partly finished products formed at various stage of production. The fact that maintenance, repair and operating supplies are consumed during the production process generally do not form part of the product itself Oil and lubricant, machinery and plant spares, tools and futures for example, are referred to as maintenance, repair and operating inventory (MRO). In addition there are also finished goods inventories.

In line with the above Gapalakarishan and Sundareson (1998) define inventories as, "an idle resource of any kind having the economic value." Government organizations have responsibility to control and manage their resources effectively for its normal operation.

Workshop lay is the most effective arrangement and coordination of the physical workshop facilities to allow greatest efficiency in the combination of men, materials and machines necessary for operation of any unit of a plant or business. According to Choundray (2001) the application of workshop layout techniques and methods is not limited to any particular area of the plant, nor is it limited to any group of workshop facilities. The principles and techniques involved may be applied to offices as well as to the manufacturing and storage area. The entire plant and attendant facilities can be considered as one large machine composed of many units whose function is to produce the company product. Most workshop layout are stimulated by product design change, facilities become obsolete by frequent accidents, by poor training environment and by cost reduction.

Workshop layout is fundamentally a technique for achieving an economic arrangement of equipment and manufacturing process in conjunction with workshop services. Its objectives to combine labor with the physical properties of plant (which includes machinery, plant services, and handling equipment) in such manner that the greatest output of high-quality goods and services, management at the lowest unit cost of production and distribution vice result (Sharma, 2003).

And the allocation of resources according to Mbamba (1992) is used to satisfy the demand for materials and services required by each department. In addition to this, Mbamba (1992) states material resources are allocated to various programs on basis of a criteria established by the top management of the education system. Such criteria are usually drawn up with due consideration of the size of the system amount of materials available, or using measurement units like class size, total enrollment, cost per pupil, teacher-pupil ratio, mode of instruction, level of education etc, which help to discourage unnecessary imbalance. On

top of this, Aggarwal (1996) said "educational institutions including technical skill development schools need to erect buildings and maintain resources and equipments for the implementation of the program." The amount of absolute and surplus materials is increasing as the schools grow and the teaching and learning process get complex. Therefore, the management of these materials is paramount importance. According to Gopalakrishnan and Sundare San (1977:177) absolute and surplus materials are defined as:

> *Absolute items are those materials and equipment which are not damaged and which have economic worth but which are no longer useful for the company's operation owing to many reasons such a changes in product line, processes, materials and so on. Surplus items are those materials and equipment which have no immediate use but have accumulated due to faulty planning, forecasting. However, they have a usage value in future. In schools it is also very common to see surpluses because of faulty planning, forecasting or purchasing.*

2.2. The Framework for Physical Facility and Training Materials Management in TVET system

Training facilities are the major and fundamental resource to run technical and vocational training programs effectively and efficiently. In order to make the training program more effective and the training environment more conducive, the location, orientation and size of the school building should be planned and standardized based on the types of the training program. Similarly, the library, laboratory, workshops, classrooms, computer centers, demonstration classes and office of the different purposes should be well established and equipped with appropriate materials (MOE, 2003).

But the reality in Ethiopia, is that most of the TVET colleges are not fully equipped and furnished. Moreover TVET programs do not focus on

creating quality and demand-driven system and as a result cannot produce adequate skilled human power for the implementation of the sustainable Development and poverty reduction strategy. So, governments and other owners of public TVET providers are responsible for appropriately equipping institutions (TVET strategy, 2006).

Furthermore, health and safety facilities are among the most required facilities in training institutions. Health facilities encompass facilities such as toilets and sewage disposal, washing water and medical and treatment facilities (UNESCO, 1985)

According to Nebiyu, (2000), the role of educational material in teaching learning process is believed to be crucial and learning is believed to take place through the primary assistance of educational materials and equipment. This shows that the physical facility and material source should be sufficient to create conducive environmental for effective training program. All TVET providers and trainers are also advised to appropriately select and organize additional resources other than suggested in the Respective module which based it on their prevailing conditions. All Specialized facilities, tools and equipments and other resources require delivering the training in detail in he modules that comprise the program.

Supplies may be defined as items that are consumable and non-consumable. Consumable supplies are such as paper, pencil and pen, non consumable supplies are those small tools, scissors, staplers and the like. Equipment refers to non-expandable items which are more or less permanent, having a long life, and quality as a capital expenditure. There are two categories of equipment, fixed and movable. Fixed equipments are built in clock systems, counters, cabinets and communication systems. In contrast to this, movable equipments include

such items as large tools, office machines, furniture, television sets and projectors (Stoops, et, al, 1981).

UNESCO (1973) pointed out that, the availability of training materials and facilities management that is both raw materials for the technical schools and instructional materials are said to be the determining factors for quality training. Institutions must have enough amounts of machines, equipment, tools, instruments, raw materials and other necessary training materials in their workshops and laboratories for the achievement of their goal.

2.3. World best Practice and Experience in Management of Training Materials and Facilities

Training Materials Management concept has undergone changes during the past two decades and has come into prominence because of its vast possibilities to contribute towards the corporate goals of productivity, and growth. In the face of chronic shortages, increasing competition and staggering inflation, materials management is not considered to be the last frontier for cost-reduction to improve profitability and productivity. Special attention has been paid to present Material Management as an integrative concept, but ultimately this total concept should break a new ground with new industrial philosophy (Datta, 2004).

In some countries, statistical records of maintenance work are maintained and compiled to asses the results and to provide guidelines for future undertakings were equipment management like availability of equipment and utilization of equipment for matching the size of the equipment with that of the other equipments used together for one or related activities. They maintain the historical records of machines and then use them for planning of overhauling assembles/equipment as can be, performed. They also used computers for determining the economic

ordering size, type of spares and to carry out various analysis such FMS (Fast, medium and slow moving) etc. These in turn help inventory control, reduction in down time and better financial control. They solved various problems easily, related to operation research techniques like, quenching models, transportation models etc by using computers.

They decided very carefully the frequency of inspection. Too less inspection may cause broken, as defects could not be traced out and rectified immediately. Likewise too much inspection brings wastage of machines time and decreases labor productivity. They have a well-designed standard workshop where trainees work and have more interest in their work. They have a daily issues receiving report, transport and repairing report forms for decision making. There is a consultant person for inventory, logistic and maintenance activities (Fred Fruitman and Dar, 1990).

They used several proven methods for inventory and material management. They used Tickler control to enable the instructor physically count a small portion of the inventory each day so that each segment of the inventory is counted everyday. So many days on a regular basis. Besides this they checked materials at the yard and find out if some of them are still in good condition or need to be sent to the Junkyard. Especially for the used item like junkpipes, used electric motors and scrap materials. All inventoried items were listed and ran into the computer for inventory record.

Putting material, equipments and machines in accordance to their sizes, types and codification system category and all safety materials are ready for use during training, the machines should not be used by not more than two trainees in one machine (MRO in China, 1993).

In my view having better use of labor, materials, machines and floor space may also benefit the practice of training materials management, because greater productivity should mean lower costs. Nationally, it means the better use of the country's resource.

Most countries have well-equipped and standard workshops that systematically arrange materials. This helps for inventory and maintenance activities and to improve technical and skill development programs. They also use computer systems to control and maintain the tools, equipments and machines. Most of the materials and equipments they purchase for training are locally manufactured. As a result, the cost is reduced. In this case, the establishment of a framework for qualification and standards are determined by assessment of the training material (Fred Fluitman and Dar, 1990).

In General, the trainers and workshop technicians are taking the course of workshop management and also they have taken the training material and facilities management in the form of cooperative training in industries, on job training system. It is necessary to see and adapt the practice of world experience in relation to material management of TVET colleges.

2.3.1. Lessons Learned

As it is mentioned in the TVET strategy MOE draft 2006, of Ethiopia efforts to develop the colleges offering technical and vocational skills are being pursued. The infrastructure is still generally poor and is not up to the required standard. Most colleges do not have good training workshops for practical work.

Lessons that could be learned about Material Management and facilities from world experience could be summarized as follows:

In this case the history cards of machines could be used for maintenance purpose and for planning, overhauling of assembling parts. In addition using codification, tools, equipment and machines could be arranged as well as using proper and standard workshop layout will help for having effective training.

Inventories and inspection of tools, equipments and machineries should be given on time and all types of maintenance should be given depending on the conditions. But preventive maintenance should be carried out regularly. Prepare daily issues report form, in order to follow the condition of materials and equipments, (Sharma, 2003).

Furthermore, all safety materials should be ready for use and put them in their proper place while practical training is carried out. A practical training should be given one to two trainees involving only in a machine. Example Lathe machine, milling machine and sensitive drill press machines. Proper fire extinguisher must be place in the proper practical workshops. In this regard all tools, equipments and machines should be used according to the instructional manual and they should only use them when they know how to use them.

We should provide relevant and demand-driven education and training that corresponds to the needs of economic and social sectors for employment and self-employment through labor market assessments and by re-orienting and re-focusing the existing TVET system.

We should develop demand-oriented curricula based on occupational standard and occupational training for non-formal and formal education and training by involving experts from the world of work.

To sum up, the practices that we learned from the world experience is, all the trainers and workshop technicians should take a practical

training about workshop and training materials management in industries on job training.

2.3.2. Factors Affecting Facility and Training Materials Management

ESDP-III has outlined factors affecting training materials management. TVET curriculum is no more centralized. Each training institution is responsible for developing its training materials based on the occupational standards. In this case developing training materials has become a challenge for all TVET institutions. To curve the problem, model training material have been developed and disseminated. However, training institutions are seen using old materials and the model materials without much change. The other major problem observed in curriculum development was the continuous change made in it. At the beginning all training materials were prepared centrally and used by all institutions with similar inputs and processes. That was changed shortly by occupational standards which were prepared for level 1, level 2, level 3, and level 4 programs. The state of the condition of buildings of the training institutions face under two categories, there are buildings that are in good condition and useful, there are also old and dilapidated ones that require maintenance though still being used. In some cases compounds are very narrow.

In most cases the available equipment are reported to be in good condition and are still useful. However, government institutions are known for using too old equipment that has been used for decades. The present situation requires the use of up to date and adequate equipment. In a fast changing technological world, it is important to bring in new equipment and make trainees familiar with and use them. Furthermore, most TVET teachers/instructors have relatively low formal qualification, severely affecting TVET delivery at higher qualification levels. Beside, existing TVET teachers/instructors are mostly inappropriately practically

skilled, i.e. not competent to provide TVET in accordance with the occupational standards.

In general, resource shortage is a critical issue, lack of adequate place of work and running costs are the major challenges. And well developed training manuals are lacking in TVET centers.

2.4. An Overview of TVET Development in Ethiopia

The development of TVET explains the linkage between education and work. Both developed and developing countries, including Ethiopia, have been implementing TVET as one of the strategies for human resource development.

According to MOE (2002) development of the TVET sub-sector of education in Ethiopia is still its developing stage. It remained a neglected sub sector of education until recently. International comparative data shows that in 1994, the proportion of TVET to academic students at the second level of education in Ethiopia was nine times less than that of the sub Saharan Africa as a while. When compared to Europe, this proportion was 36 times less for Ethiopia.

As indicated in MOE (2006) traditionally Technical and vocational Education and Training (TVET) in Ethiopia has been fragmented and delivered by different providers at various qualification levels. Public TVET institutions under the education sector, concentrating on middle level technical training at post grade ten level, are competed by the employer-based in-house TVET schemes of public and private companies TVET schools run by (mainly church based) NGOs and an increasing number of private commercial TVET providers.

At the moment there is an indication which shows the deficiency of effectiveness and efficiency in Ethiopia TVET institutions. Studies have shown that many TVET graduates remain un employed even in those

occupational fields that show a high demand for skilled manpower. In connection to the MOE (2002) stated that:

> ... *"the quality of training remained poor due to: limited funding; lack of appropriate and adequate facilities; insufficient number of qualified instructors; inflexible and out dated occupational standards; lack of adequate functional relationship between training centers and the real world of work; lack of stake holders participation in curriculum design and implementation; and in efficient management".*

Additionally, MOE (2006) stats that the shortage of sufficient corps of TVET teachers/instructors represents the most severe obstacle to TVET demand in Ethiopia. The quality of TVET teachers/ instructors has suffered as a result of the low reputation of their profession. Most TVET teachers/instructors have relatively low formal qualification, severely affecting TVET delivery higher qualification levels.

Furthermore, technical teachers/instructors are often un motivated. They did not choose to be come technical teachers, but were placed in technical teacher colleges because there were no other options available. Finally, existing TVET teachers/instructors are (mostly) inappropriately practically skilled, i.e. not competent TVET in accordance with occupational standards. This is a result of a training system that long emphasized theoretical knowledge, disregarding the importance of practice skills and appreciation of the world of work. The above listed problems contribute their own share for the lack of TVET effectiveness and efficiency. To overcome the multidimensional problems of the TVET institutions, the government and the TVET institutions (like the Deans, teachers, workshop technicians, trainees and the administrative staff as a whole) should have to give due emphasis for proper managing of the existing materials. Because improper utilization of materials will contribute its own share on decreasing the quality of training.

The problems related with materials and equipment is not only confined to purchasing but also extends to allocation and distribution and lack of timely maintenance practices is a serious problem in colleges. When college resources are broken or damaged, immediate measure is not taken to repair and reuse it. The conventional practice, to repair after it has been collapsed is the most prevalent problem in the colleges. Most TVET colleges were not adequately equipped with human, material and financial resources because the training materials for every training process are very expensive and scarce. On the other hand, improper utilization, improper purchasing of training materials was not given due to low attention by the colleges (ECBP, 2006).

There is absence of carrying out of safe handling and storage procedures applicable to components, fabrication and /for assemblies most TVET colleges did not prepare materials, selecting and setting up the equipment and carrying out the manuals and inspecting for and correcting defects in a range of fabrication activities.

People do not pay attention for property aspects and as a result become un concerned, irresponsible and simply pass by while they are misused, broken and damaged. They perceive it to be a single manager's or a section's duty. However, by and large, material and equipment management is a staff function. It requires a collaborative effort of all the above concerned bodies. Maintenance function allows the repair, servicing and replacement procedures. It enables to provide service without stoppage and helps to protect further damage. In that, it gives longer life – time for materials and equipment which ultimately maximize their exhaustive utilization (GDS, 2000).

CHAPTER THREE

3. Research Methodology

3.1. Method of Study

The study employed a descriptive survey method. This research method was selected because it helps to obtain first hand information and enables the researcher to have access to multiple methods of gathering information. Besides, the survey method involves obtaining information directly from the participants by posing questions. Best and Kohn (1989) explained that descriptive survey method describes, analyzes and interprets conditions that exist. It was therefore; felt that the appropriate research type to carry out this investigation is descriptive survey, as the major intent of this study is describing and interpreting the existing conditions regarding training materials and facilities management.

3.2. Source of Data

The data for the study were from primary and secondary sources. TVETs trainers, trainees, department heads, and college deans were primary data. In the secondary data, relevant books, journals and legal documents, various statistical evidence together with government regulation, documents in TVET Colleges /Institutions, Educational Bureau and Agency, available sources from NGOs like GTZ which support the TVET sector of the region were reviewed.

3.3. Sample Size and Sampling Techniques

As it is important to collect relevant information from appropriate sources, the sample population that would serve as a focus of this study included, trainees, trainers, college deans and administrative staff. In addition to this, the study focused on three fields of technology training and nine different trades which were selected by using purposive

sampling techniques. Because they have their own industrial workshops. This technique was selected as it enables us to gain the necessary information from a given source.

In Addis Ababa city Administration, there are six TVET colleges. Among these, three (50%) of TVET colleges, namely, Tegbareid, Entoto and Misrak TVET colleges were selected using purposive sampling. Tegbareid and Entoto TVET colleges have rich experiences in giving some technical and vocational fields for decades. They are also well-equipped and resource full in having a number of lecture rooms and fully equipped workshops comparatively to others. By now, both colleges give different fields of training, for instance, Tegbareid TVET College gives a training, mainly on industrial technologies where as Entoto TVET gives a training more of Business areas. Misrak TVET College was providing a few trainings, because it was a comprehensive high school before, so less vocational trainings are given. Nowadays it is one of the TVET colleges of Addis Ababa. However, in this college all the workshops were not well equipped. Deans of the TVET colleges were also selected using purposive sampling techniques. The primary consideration in purposive sampling is the judgment of the researcher as to who can provide the best information achieve the objective of the study. The researcher only goes to those people who in her/his opinion are likely to have the required information and willing to share (Kumar 1996).

Thus, to see the experience of physical facility, training materials and management practice from these colleges, the above three TVET colleges were selected using purposive sampling techniques.

Therefore, the total population were 1472, out of this 970 were trainees and 97(10%) of them were selected using simple random techniques and

493 were trainees out of this 99 trainers were selected using stratified sampling techniques.

Because they have homogenous characteristics in respect with the field of training they provide. i.e, Electrical electronics, auto engine and metal fabrication. Based on this, the size of the sample respondent were taken all of them to have good representation.

The trainees were selected using simple random sampling because it provides equal chance of being selected, the deans and administrative staff were also selected using purposive sampling techniques because they had detail information on the study going on.

3.4. Data Collection Tools

Based on the response obtained from the respondents in the sample colleges, the analysis and interpretation of the data is presented in the following section categorized in sub topics.

Data were obtained from four groups of respondents using questionnaire, interview, observation and document analysis. And the interview was conducted with deputy deans of the colleges and administrative staff. The interview was not conducted with students because it will be redundancy.

Questionnaires were preferred for it enables this survey study conducted on large size of the population. Kumar 1996 denotes that questionnaire provides greater anonymity and some situations when sensitive questions are asked it helps to increase the likelihood of obtaining accurate information, particularly, when it is administered collectively to a study population. Interview was also used to have qualitative and in-

depth information from TVET deans and administrative staff. Kumar (1996), describes, structured interview provides uniform information which assures the comparability of data and can be used with almost any type of population: children, handicapped, illiterate or the very olds and appropriate where in depth information is required it is an extremely in expensive method of data collection...

Observation was also employed to gain first hand information on the extent of facilities available to implement formal TVET program in the TVET colleges.

The second data gathering instrument was conducted with sample respondents. This was used to collect data from college deans and administrative staff. Interview was chosen to collect relevant information and help to get detailed and flexible responses from the respondents about the problems to be studied. Questionnaire and interviews were used as major data collection instruments.

3.4.1. Quantitative Data

The questionnaires distributed to two groups of respondents that are trainers and trainees were used to obtain information for the study.

3.4.2. Qualitative Data

In addition to this, interview, observation and document analysis was undertaken in order to gather supplementary in formation for the study.

3.5. Procedure of Data Collection

The procedure used to collect data for the study was based on the information that was obtained from primary as well as secondary data sources.

The research questionnaire was the main data gathering tool that was extensively used so as to obtain sufficient primary data. The questionnaire was distributed to the sample respondents: trainers and trainees.

The questionnaire was designed with the purpose that respondents would reply in writing. Questions were asked in a closed form, but in some instances the closed type question was followed by an open ended question to enable respondents to express their opinions in detail.

A preliminary trial of the questionnaire was thirty trainees (20 male and 10 female), ten instructors (7 male and 3 female) and one dean at General Wingate Technical and Vocational Education and Training College at Addis Ababa which was not included in the research. It aimed at checking whether the questionnaire met the objective of the study. The questionnaire was filled by the respondents, each questionnaire examined item by item to detect any ambiguous and unclear statements and the items were corrected according to the suggestion and recommendations of the respondents.

The reliability of the questionnaires was checked by using correlation formula that the number of question items of trainers is 57 and having reliability of 0.742 and the number of question items of trainees 29 and this also had moderately reliable of 0.553. Moreover the validity of the questionnaires was checked by asking and discussing with the subject experts of TVET.

3.6. Method of Data Analysis

Due to the organization of the questionnaire, chi-square and T-test were used because to describe the nature and characteristics of objectives and the relationship between variables.

Percentages were also used to describe the general characteristics of respondents as well as the magnitude of their opinions and assumptions towards the study issues

Moreover, the information secured through interview, observation and document analysis was analyzed using qualitative method so as to get answers for the basic questions raised.

Data collected using interviews were interpreted and written properly to supplement the quantitative data. Moreover, documents from various sources were examined and categorized as quantitative data and analyzed accordingly.

CHAPTER FOUR

4. Presentation, Analysis and Interpretation of Data

This chapter deals with presentation, analysis and interpretation of the data gathered from government owned TVET colleges, administrative staff, trainers and trainees in the selected TVET colleges of Addis Ababa. For this study, the necessary data were obtained through questionnaires, observation and interview with vice deans and administrative staff.

Respondents Category by Sample Colleges

Sample Colleges	Respondents			
	Dean	Administrative staff	Trainers	Trainees
	Sample	Sample	Sample	Sample
Tegbareid	1	2	34	34
Entoto	1	2	35	37
Misrak	1	2	30	26
Sub total	3	6	99	97

4.1. Characteristics of the Respondents

The study comprises 205 sample respondents of which 99 were the trainers and 97 of them were trainees, and 6 administrative staff and 3 deans.

Thus, based on the responses obtained from the respondents in the sample TVET colleges, the analysis and interpretation of the data is presented in the following section categorized in sub topics.

The following two tables (table 1 and 2) show the characteristics of respondents of the study in terms of sex, age, level of education and service year.

Table 1: Distribution of Respondents by Sex and Age

Personal data		Respondents						Total
		Administrative staff N=		Trainers N=		Trainee N=		
		No	%	No	%	No	%	
I. Name of colleges	Misrak TVET college	2	33.3	29	27.7	19	18.3	50
	Entoto TVET college	2	33.3	35	36.2	45	47.3	82
	Tegbare-ed TVET college	2	33.3	35	36.2	33	34.4	70
Total		6	100	99	100	97	100	202
II. Sex	Male	5	83.3	85	90.4	75	80.6	165
	Female	1	16.6	9	9.6	18	19.4	28
Total		6	100	94	100	93	100	193
III. Age	25 years and below	4	66.6	18	18.1	85	87.6	107
	26-35 years	2	33.3	28	28.2	12	12.3	42
	36-45 years	-	-	19	19.0	-	-	19
	46-55 years	-	-	25	25.5	-	-	25
	56-60 years	-	-	9	9.0	-	-	9
Total		6	-	99	100	97	100	202

As it can be seen from the table above, the first item refers to the sex composition of respondents. In this regard 5 (83.3%) of administrative staff 85 (90.4%) of trainers and 75 (80.6%) of trainees were males. The remaining 1 (16.6%) administrative staff, and 9 (9.6%) trainers, and 18 (19.4%) trainees were females. The above data show that there is less better involvement of women in the TVET colleges. This implies that it is

necessary to raise the number of females in all administrative staff and trainers so that it would create a conducive condition to enhance the contribution of women. Moreover, the data reveals that it would be sensible to involve females in technical and vocational training, technical managers and expertise positions at TVET agency and TVET colleges, because this helps their females counter part especially trainees to be motivated for education training.

Regarding the age structure of the respondents, item 2 in the above table shows that 4(66.6%) administrative staff, 18 (19.1%) trainers and 82 (81.1%) trainees are 25 years and below, 16 (17%) of trainers between in the age of 26-35 years and the majority of trainers 23 (24.50%) that is between the age of 46-55 years and the remaining (9.6%) are between in the age of 56-60 years.

This signifies that most of the trainees and administrative staff are youngsters that are in the age range where they can put forth maximum effort to execute their duties and responsibilities.

Table 2: Distribution of Respondents by Educational level and Service Year

		Respondents			
		Administrative staff N=		Trainers N=	
		No	%	No	%
I. level of education	TVET diploma	2	33.3	4.0	4.0
	College diploma	4	66.6	12.0	12.1
	BA/BSc	-	-	65	65.6
	MA/MSC	-	-	18	18.1
Total		6	100	99	100
II. Service year in TVET colleges	1-5 years	1	16.6	37	37.3
	6-10 years	5	83.3	43	43.3
	11-15 years	-	-	5	5.0
	16 and above	-	-	14	14.1
Total		6	100	99	100

Table 2 shows the educational background of the respondents. As it can be seen from the table above, 2 (33.3%) administrative staff trainers, and 4 (4.3%) respectively have TVET diploma, 4 (66.6%) and 12(12.8%) have college diploma respectively, 62 (66.0%) trainers BA/BSC holders, and 17 (17.0%) trainers are also MA/MSC holders. This implies that the trainers in most of the sample colleges are filled with professionals who have ample theoretical knowledge about their occupations /fields and most of them meet the minimum requirement set by the Ministry of Education. Where as some of the administrative staff did not fit the minimum requirement and this indicates there is a further need to train professionals for administrative staff.

Item 2, of table 2, shows the variation of service year of respondents. 1 (16.6%) administrative staff, and 37 (39.4%) trainers served for 5 and below 5 years, 5 (83.3%) and 41 (43.6%) severed for 6 to 10 years, 4 (4.3%) of trainers served for 11 to 15 years and the remaining 12 (12.8%) trainers served for 16 and above years.

Hence, it is believed that when the more trainers and administrative are experienced, the better they facilitate, direct and manage their major fields of study in the process of vocational training. This will assure to relate the theoretical aspect with practical aspect of the training activities.

Educational level of trainees

No	Level	Frequency	Percentage
1	Level II	2	2.2
2	Level III	67	72.0
3	Level IV	24	25.8
	Total	93	100

4.2. Availability of Training Materials and Facilities in the TVET Colleges

The success of TVET colleges rests on the optimum training materials and physical facilities such as, materials, equipments and machines. Resources are the only means through which organizational activities production, service and satisfaction ends are attainable (Durbin, et al. 1984).

In order to make the training program more effective and the training environment more conducive, the location, orientation and size of the college building should be planned and standardized based on the types of the training program. Similarly, the library, laboratories, workshops, classrooms, computer centers, demonstration classes and offices of the different purposes should be well established and equipped with appropriate training materials (MoE, 2003). According to workshop management the optimum ratio of trainees with machines, equipments and hand tools is one-to-one.

4.2.1. Availability of Training Materials and Facilities in TVET College

Availability of Training Materials in TVET colleges, maintaining quality training achieves productivity, proper skill and job match.

Table 3: Availability of training materials and facilities

		Respondents								
No	Item	Trainers, N	Mean	Trainers, N	Mean	Av. X	Std. deviation	T	df	Sign.
1	Availability of raw materials	93	2.49	94	2.61	2.55	0.922	0.828	185	0.409
2	Teaching aids and manuals	93	3.23	94	2.71	2.97	1.181	-2.885	185	0.004
3	Availability of machines, equipments and hand tools	93	2.94	94	2.93	2.93	1.01	-067	185	0.947
4	Classroom size $2m^2$ /trainee	93	2.02	94	2.16	2.09	1.152	-5.105	185	0.000
5	Safety precaution example fire-extinguisher	93	2.56	94	3.09	2.82	1.386	2.592	185	0.010

Key: df=degree of freedom, sign=significant; at Alpha (∂) = 0.05

Mean: 0-1=poor; 1.1-2.0 = fair; 2.1-3.00=Good; 3.1-4= very good; 4.1-5=Excellent.

The respondents were not satisfied with the training materials and resource available in workshops among the 5 items cited in table 3, 3 of them are found to be good or average. The mean results of these items are 2.55, 2.97 and 2.93 respectively. The mean result range of these items are 2.1-3.00 from these the training materials resource available in main store are moderate in most of the TVET colleges.

Both the responses of the TVETs trainers and trainees reveal in Table 3 that availability of raw materials and availability of machines, equipments and hand tools and availability of teaching aids and manuals were found in average status or not more than enough. This reveals training materials in the three TVET colleges of Addis Ababa city

administration where 80% of training designed to be practical were not in accordance with what is intended. This is also due to absence of appropriate planning skills to allocate wisely scarce and expensive training materials.

Item 4 and 5 of table 3 shows the classroom size and safety precautions. According to the shop organization management course, the workshops of TVET College are not up to the standard, the classroom size is below standard, having very limited height and width. There is no enough working place for practical work, the fire extinguisher gas is empty or it does not work during accident. The mean result shows in an average and in the range between 2.0 – 3.0. This implies that most of TVET colleges of Addis Ababa City administration did not deliver an outcome – based TVET system. So the government has the statutory responsibility to organize the outcome based system of quality training, it does so in cooperation with employers and other experts who are knowledgeable about the requirements and availability of training materials.

Most of the trainers and trainees agree that, there is a shortage of available materials and equipment when needed. Failure to provide materials and equipment when requested might be due to shortage of budget or even the assigned budget might not be released on time or lack of managerial competence on the part of deans in creating different mechanisms in raising fund. The interview obtained from administrative staff reveals that there is failing to supply timely the necessary and required training materials and equipments due very high constraints of financial system. This also shows that there is no, statistical significant difference among trainers and trainees regarding availability of row materials and availability of machines, equipments and hand tools. This is due to similar operating and handling of machines and equipments of trainers and trainees.

Where as in case of teaching aids and manuals, classroom size and safety precaution there is a significant difference among the respondents this may be because of shortage of the materials and problem of workshop layout.

According to Ahuja (1998), the activities of receiving the materials, stocking in appropriate locations, materials handling and issues must be done swiftly and economically. Comfortable working condition must be provided to the stores personnel to get the maximum efficiency and morale.

4.2.2. Utilization of Training Materials and Facilities

Efficient utilization of equipment and facilities at TVET colleges should result in more effective outcomes and training will be maximized. Utilization of training and efficient and cost-effective manner and commitments of colleges to continuous improvement of their processes, products and services.

Table 4: Utilization of training materials and facilities management

		Respondents								
No	Item	Trainers, N	Mean	Trainees, N	Mean	Av. X	Std. deviation	T	Df	Sign.
1	Service ability of training materials and facilities	93	2.51	94	3.05	2.78	0.95	3.931	185	0.000
2	Durability of training materials and facilities	93	2.60	94	3.01	2.80	1.01	2.274	185	0.007
3	Relevance of training materials and facilities	93	2.71	94	3.13	2.92	1.06	2.659	185	0.009
4	Simplicity of using training materials and facilities	93	2.71	94	3.01	2.86	1.13	4.216	185	0.000
5	Efficiency of training materials	93	2.66	94	3.11	2.88	1.11	2.751	185	0.007
6	Effective utilization of training materials and facilities	93	2.58	94	3.02	2.8	1.12	2.664	185	0.005

Key: df= degree of freedom, std= standard, sign=significant; alpha (∂) = 0.05

Mean: 0-1=poor, 1.1-2.0=fair, 2.1-3.00=Good; 3.1-4=very good; 4.1-5= Excellent

The respondents were less satisfied with utilization of training materials and facilities in workshops among the 6 points cited in table 5, 6 of them found to be good or average. The mean results of these items are in the range of between 2.0 and 3.0 from these, utilization of training materials/equipment in workshops is average in most of the TVET colleges.

And the interview responses do not confirm the above suggestions of respondents; this indicated that the practice of maintaining and reusing the already utilized materials is very low. Because the deans are not initiated to mobilize and hence they wait some other body to come and maintain for them. The observation done by the researcher revealed that

there were many broken training materials. Improperly handled and piled waiting for maintenance. Hence the practice of maintaining and reusing (recycling) the old materials and equipment was not effective as it should be. Therefore, it is reasonable to conclude that the practice of maintenance is not adequate to safeguard college properties from further damage that enable them to have longer life time.

The t-test analysis of variance also shows there is statistical significant difference among trainers and trainee response regarding all the items in table 6.This shows that there is a different usage and maintaining mechanism and facilities.

The realities in colleges reveal that destruction of college properties is not decreasing. Therefore, it is safe to conclude that the awareness raising instruction provided was not adequate to develop a sense of ownership in trainees. And the preparation of the specification of training materials was not prepared by the participation of each trainer in their respective field of training to secure durable and efficient training materials for the trade. So a precondition for the successful implementation of the TVET reforms as envisaged in the strategy is to create a conducive, motivating and attractive work environment for trainers, TVET managers and administrators. According to the above information, the efficiency of trainers and trainees regarding the proper handling of training materials and equipment is moderate. By implication, a major task of a trainer and trainee in vocational training is the proper handling of training materials and equipment which are very expensive and help the trainee to acquire skill knowledge, as well as that bring a change in attitudes in the trainee on how to handle a training materials and equipment. The better the trainers and trainees handling and well utilization of the training materials, facilities and equipment of the TVET College, the better the quality of training. Therefore every staff should discharge its responsibilities to maximize the proper utilization of training materials.

To this end, the TVET systems should under take all efforts to raise the utilization of training materials and facilities.

4.2.3. Management of Training Materials and Facilities

The TVET quality will be introduced to promote the performance standards of TVET colleges on the basis of the level of management system in training materials.

Table 5: Managerial activities on training materials and facilities

No	Item	Responses	Respondents'						df	X^2	p value
			Trainers		Trainees		Total				
			No	%	No	%	No	%			
1	To what extent is the dean of the college efficient in coordinating the staff in planning the training materials and facilities	Very high	9	9.5	5	5.3	14	7.4	4	12.748	0.013
		High	14	15.0	14	15.0	28	14.9			
		Moderate	38	40.4	30	32.2	68	36.3			
		Low	25	26.5	18	19.3	43	22.9			
		Very low	8	8.5	26	27.9	34	18.1			
		Total	94	100	93	100	187	100			
2	To what extent is the dean of the college effort to create conducive environment for the training?	Very high	13	13.8	24	25.8	37	19.7	4	14.423	0.006
		High	23	24.5	13	14	36	19.2			
		Moderate	27	28.7	13	14	40	20.3			
		Low	13	13.8	23	24.7	36	19.2			
		Very low	17	18.1	21	22.6	38	20.3			
		Total	93	100	94	100	187	100			
3	Do trainees get sufficient information, orientation and support about the training from the dean?	Yes	57	61.2	72	76.5	129	68.9	4	19.93	0.075
		No	36	38.7	22	23.4	58	31.1			
		Total	93	100	94	100	187	100			
4	Who is responsible for training materials planning	Trainers	15	15.9	8	8.6	23	12.2	4	12.708	0.013
		Deans	9	9.5	14	15.0	23	12.2			
		Department heads	8	8.5	15	16.1	23	12.2			
		Section heads	14	14.8	3	3.2	17	9.0			
		All	48	51.0	53	56.9	101	54.0			
		Total	94	100	93	100	187	100			

Key: df=degree of freedom, sig=significant at alpha (∂) = 0.05

Table 5 shows that guideline of training materials management. Item number 1 of table 5 shows that the trainers and the trainees are asked to respond the extent of the dean of the college efficiency in coordinating the staff in planning the training materials and facilities. Accordingly, from item number 1, 9(9.5%), 5(5.3%) of the trainers and trainees reported that the efficiency of the dean in coordinating the staff in planning the training materials and facilities very high. As shown in table 5 of item 1, 14(15.0%), 14(15.0) of the trainers and trainees respectively reported high. 38(40.4%), 30(32.2%) of trainers and trainees respectively reported moderate and. 25(26.5%), 18(19.3%) and 8(8.5%), 26(27.9) respectively reported low and very low. The majority of the trainers and trainees reported that deans of the colleges are moderately efficient in coordinating the staff in planning the training materials and facilities. This is due to the Education Bureau failed to orient the deans and assign a skilled person for the position.

Regarding the deans the college, problems lies on lack of participation from the staff members on planning the training materials and problems observed in planning of training materials is lack of budget. Effective mechanism must be established to share experience and expertise through ongoing activities, may include jointly share resource data, multimedia technologies and enter departmental cooperation.

The chi-square test result ($x^2 = 12.748$, $p=0.013$) also shows that, at $\partial = 0.5$ of significance, there is a statistical significance difference among the respondents this may because of the degree of knowledge difference in the out look of administration area between trainers and trainees.

As it can seen from Table item 2, respondents were asked to rate the extent of the college of the dean effort in creating conducive environment in the training process. In this regard, the majority 27 (28.7%) and 23

(24.5%) trainees responded moderate and high respectively and 13(13.8%), responds very high the remaining 13, (13.8%) and 17 (18.1%) responds low and very low respectively where as 24 (25.8%), 13, (14%), and again 13 (14%) responds very high, and moderate respectively the remaining 23 (24.7%) and 21 (22.6%) trainer respondents respond low and very low.

This shows that the majority of trainees support the practical effort of the dean while most of the trainers oppose the idea that the practical effort of the dean is high. The chi square observed value also reveals that trainees idea about the effort of the college dean significant difference with the trainers.

In item 3 of the same table, the trainees and trainers were asked to rate the responsible body that provide sufficient information, orientation and support for the trainees in the TVET colleges. In relation to this, 57(61.2%), and 72 (76.5%) trainees and trainers rated yes, while the remaining 36 (38.7%) and 22 (23.4%) of trainees and trainers rated no.
Lack of theoretical knowledge of management and lack of managerial experiences in the world of work affected the over all management of the TVET colleges.

When we come to table 5 of item number 4, 15(15.9%) rated the responsible body is trainer, in training materials and planning and 9(9.5%), 14(15.0%) rated that the responsible body is the dean, and 8(8.5%), 15(16.1%) and 14(15.0%), 3(3.2%) rated that the responsible is the department heads and section heads respectively and the rest 48(51.0%), 53(56.9%) rated all. This is because of the fact that all bodies share their own responsibility and duties concerning the training materials and planning.

The chi-square test result (x^2 = 12.708, p = 0013) shows that at ∂=0.05 level of significance, there is a statistical significance difference among the respondents. This might be because of the trainers and trainees different outlook on the assumption of responsibilities and duties.

This deficiency assets the problems of management in many aspects including unprofessional and inexperienced educational mangers in the TVETs because it is the deans of TVETS and educational experts in the Education department and TVET agency that are ultimately responsible for mismanagement of the system.

The talent and competence of the TVET managers to foresee the labor market demand, to make available material resources, to create participative environment for the college community.

The TVET trainers invariably responded that appropriateness of organizing departments according to their occupational specialty, the ability of the TVET dean to make use of financial and material resources in the right time and the systematic arrangement of material resources in order to achieve the desired goals of their TVET colleges were not found in appropriate quantify and quality. This evidence complemented the responses of the trainers in the proceeding tables those managerial problems in their TVETs were critical.

Moreover, the interdependent problem of budget insufficiency and material inadequacy aggravated the difficult managerial problems of deans and ultimately causes the objectives of the TVETs unattainable. Because TVETs could not be able to produce creative, productive and more importantly self-employed gradates in the absence of critical

training materials for practical training that constitutes 80% of the whole in TVET training.

Similarly, the chi square observed value also reveals in significant difference with in the trainees and trainers.

This shows that the college of deans have given due attention to the trainees in giving necessary in formations, orientations and support to follow their trainings.

4.2.4. Factors Affecting the Management of Training Materials and Facility

Inadequate skilled human power for the implementation, maintaining, handling, systematic arrangement and coding tools, machines and equipments.

Table 6: Factors affecting training materials and facilities

		Respondents								
No	Item	Trainers, N	Mean	Trainees, N	Mean	Av. X	Std. deviation	T	Df	Sign.
1	Does the dean provide awareness raising instruction regarding the utilization of training materials/ equipment?	93	2.51	94	2.60	2.55	1.00	0.013	185	-0.541
2	What measures do the college take in regard to surplus or obsolete materials	93	2.75	94	3.30	3.0	1.37	2.706	185	0.007
3	Are the properties in store-room properly recorded, classified and coded	93	2.45	94	1.88	2.16	0.087	-4.625	185	0.000
4	How effective is the college in maintaining and utilizing the broken and unused training materials	93	2.60	94	2.45	2.52	0.091	-1.189	185	0.236

Key: df-degree of freedom, STD=standard, sign=significant at ∂<0.05

Mean: 0-1=poor: 1.1-2.0= fair, 2.1-3.0= Good: 3.1-5: Excellent

The respondents were satisfied with managerial activities of training materials and facilities among the 4 points cited in table 6. Four of them are found to be good or averages the mean results of these items are between 2.00-3.00. Based on this fact it is possible to infer that most of the TVET colleges are not well organized in recycling the surplus and obsolete materials. Moreover there is no systematic way of handling, classifying, coding tools and materials. The information obtained through interview and observation also revealed that there is no maintenance department for utilizing the broken and un used training machine, equipments and hand tools.

The T-test analysis of variance also shows there is a significant difference in item 2 and item 3 in table 6 among trainers and trainees regarding obsolete or surplus materials and store room arrangement and recording. This is due to absence of effective mechanism of discarding of used materials, lack of standard store room and skill person that perform the task properly. In other way there is no significant difference in item 1 and 4 of table 6 between trainers and trainees regarding awareness raising instruction in utilization of training materials and in maintaining the broken and adjusting the unused machines and equipments of the colleges. As indicated in Antonious (2006), states that the quality of any TVET program is largely dependent up on the degree of the organization and its training facilities. They are characterized by the presence of adequate, well planned and properly equipped physical facilities, which are very much similar in nature and operation to the facilities in the actual working places.

Regarding the utilization of available facilities ILO (1999), states that if training colleges are to utilize fully the training facilities already exists in the local communities, their programs of vocational education and training should be much more significant than they are.

Improper management of equipment, machines, tools and training materials as well as improper utilization of financial resources, unable to synchronize training materials systematically in order to achieve the desire goal of the colleges. Furthermore, TVET colleges are not encouraged and empowered to develop close working relationships with large, medium, small and micro-companies regarding the improvement of training materials and facilities. In addition, special emphasis is not given to develop the training materials and facilities management for practical skill and technological innovation. The TVET colleges have low standard purchasing system as well.

In most of TVET colleges, there are different machines that are kept idle. This is due to lack of proper spare parts and lack of skilled technician or trainer that maintain the machines. Secondly in most colleges there is no maintenance shop with adequate financial budget and most trainers are not willing to maintain the tools and machines through preventing maintenance.

4.2.5. Strategies in Place to improve the Management of Training Materials and Facilities

Colleges should be networked and training materials should be improved to the highest quality possible, since they are one of the most important inputs for achieving quality training. Furthermore, training college curricula should be revised aiming at better quality instruction in practical training.

Table 7: Strategies that improve the management of training materials and facilities

		Respondents								
No	Item	Trainers, N	Mean	Trainees, N	Mean	Av. X	Std. deviation	T	Df	Sign.
1	Participatory planning method of the college?	94	1.83	93	2.19	2.01	0.55	-5.23	185	0.000
2	Plan implementation of the training materials and facilities	94	1.96	93	2.09	2.02	0.51	-5.58	185	0.004
3	Program improving training materials and facilities	94	2.20	93	2.21	2.20	0.55	-2.97	185	0.020
4	Monitoring and evaluation of training materials and facilities	94	1.98	93	2.18	2.08	0.56	-6.21	185	0.000

To extent to which trainees and trainers participate in monitoring and evaluation affects the effectiveness and success of TVET program implementation. In this direction, TVET colleges are expected to make their program management system participatory that involves the concerned stakeholders in all courses of decision-making activities. Accordingly, the t-test results on the participation of trainees and trainers in management functions practiced in the TVET colleges show that there was significant difference between trainers and trainees at alpha less than 0.05 for all items. Furthermore, the mean values for all items are in the range between 2.0 – 3.0, this shows the participation level was rated average for trainees and trainers.

From the above information, it is possible to deduce that relatively there was moderate communication the management and trainers and trainees. Success with which any training system can discharge its responsibility depends on how well it has organized with the necessary and sufficient materials with quality management.

The economic policy and strategy of the country requires technical and professional skills in broad and specific occupational fields. It is with this intention that the government of Ethiopia has put in place a comprehensive capacity building development program aimed at strengthening its human resources potential through TVET (ESDP-III).

Efforts have also been made to build the managerial capacity of the sub-sector. Accordingly, trainings were given on management, procurement, training material and human resource management with a purpose of building their capacity of TVET administration, professional support, follow-up and supervision to ensure standards of quality in teaching-training process. In addition the management of TVET is decentralized to the region where in some regions and Addis Ababa.

TVET commissions or agencies are organized. In addition to this institutions should be networked. This strategy will help training institution to ensure quality through the education and training system for competency-based vocational and technical qualification. For the successful implementation of this strategy, training materials will be revised in order to make them practical oriented and relevant to the training program (ESDP-III).

Table 8: Responses with regard to physical facilities

No	Item	Respondents			
		Trainers		Trainees	
		N	%	N	%
1	College building and standard workshop				
	a. Not available	10	10.6	-	-
	b. Scarcely available	30	31.9	-	-
	c. Available	24	25.5	-	-
	d. Moderately available	22	23.4	-	-
	e. Highly available	8	8.5	-	-
	Total	94	100.0		
2	Availability of students service (cafeteria, toilet etc)				
	a. Not available	13	13.8	28	30.1
	b. Scarcely available	27	28.7	24	25.8
	c. Available	30	31.9	15	16.1
	d. Moderately available	12	12.8	12	12.8
	e. Highly available	12	12.8	14	15.1
	Total	94	100	93	100
3	Availability of health facilities				
	a. Not available	20	21.3	34	36.6
	b. Scarcely available	23	24.5	18	19.4
	c. Available	27	28.7	23	24.7
	d. Moderately available	20	21.3	11	11.8
	e. Highly available	4	4.3	7	7.5
	Total	94	100.00	93	100.0
4	Enough light and ventilation of workshops				
	a. Not available	8	8.5	14	15.1
	b. Scarcely available	25	26.6	21	22.6
	c. Available	33	35.1	17	18.3
	d. Moderately available	25	26.6	12	12.9
	e. Highly available	3	3.2	29	31.2
	Total	94	100.0	93	100.0
5	Degree of the college opportunity to future expansion (sport field) e.g.				
	a. Low	24	25.8	13	13.8
	b. Very low	13	14	23	24.5
	c. Medium	13	14.0	27	28.7
	d. High	23	24.7	13	13.8
	e. Very high	21	22.6	17	18.1
	Total	94	100.0	93	100

Table 8 tries to treat the state of physical facilities in TVET colleges. Having this in mind, of the trainers of the sample TVET colleges 10(10.6%), 30(31.9%) replies that not available and scarcely available respectively and 24(25.5%), 22(23.4%) replies that available and moderately available and the rest 8(8.5%) replies that highly available.

From these figures, one can understand that the sample colleges are on the average or medium status in state of physical facilities.
Table 8 item 2 tries to answer availability of student's service. As it is indicated in the table, 13(13.8%) 28(30.1%) rated not available, 27(28.7%), 24(25.8%) rated scarcely available, 30(31.9%), 15(16.1%) rated available, 12(12.8%), 12(12.8%) rated moderately available and 12(12.8%), 14(15.1%) rated highly available in both trainers and trainees respectively this shows that regarding students service are below average.

Table 8 item 3 attempts to answer the question on availability of health facilities which is the most important aspect TVET training colleges.

According to Table 8, item 3; 20(21.3%), 34(36.6%) of trainers and trainees indicated that not available, respectively. 23(24.5%), 18(19.4%) both trainers and trainees indicated that scarcely available, 27(28.7%), 23(24.7%) of both indicated that available, 20(21.3%), 11(11.8%) of them indicated moderately available the rest 4(4.3%) and 7(7.5%) of trainers and trainees indicated highly available.

According to the above information, the availability of the health facilities of the colleges is modernized. By implication a major task of trainers, staff members, college administration, and TVET agency help the college to enhance the college's status.

In item 4 of table 8, respondents were required to answer in enough light and ventilation of workshops.

According to the respondents' point of view, 8(8.5%), 14(15.1%) of both trainers and trainees indicated not available, 25(26.6%), 21(22.6%) scarcely available respectively, 33(35.1%), 17(18.3%) of both trainers and trainees indicated available, 25(26.6%), 12(12.9%) both indicates moderately available and the rest 3(3.2%), 29(31.2%) both trainers and trainees respondents rated highly available.

Most of the respondents reported that the all workshops of TVET colleges not available and scarcely available in having enough light and ventilation and this shows that all workshops are below standard and this may be a factor of accidents for trainers and trainees and limits the training and production process of the colleges.

Item 5 of table 8, respondents were asked to answer attractiveness of the college and access to future expansion. According to table 8, item 5, 24(25.8%), 13(13.8%) trainers and trainers rated low 13(14.0%), 23(24.5%) both rated very low respectively and 13(14.0%), 27(28.7%) medium, 23(24.7%), 13(13.8%) high available and the rest 21(22.6%), 17(18.1%) of the trainers and trainees rated very high.

Thus, from the above data it appears that the degree of opportunity of the colleges and access to future expansion almost half of the trainers and trainees give their idea as negative aspect and half of them give their idea as positive aspect and thus shows that there is an idle place for further expansion but it needs some investments like sport field, fence etc).

From the figure one can infer that the TVET colleges are not using the available resources, physical facilities are proved by allocating a significant investment from the country's limited resource. Therefore the

colleges with good facilities create attractive training environment and this, in turn, makes the information flow efficient. Therefore every staff should discharge its responsibilities to maximize the proper physical facility.

To sum up, effective training can minimize material wastage. Therefore; to avoid this problem the available resources can be managed, identified, organized and used to get the maximum training outcome.

Table 9: Performance and attitudes of trainers in arranging training materials and facilities

No	Item	Respondents	
		Trainer	
		No	%
1	Performance of trainers in organizing training materials and facilities		
	a. Poor	4	4.3
	b. Fair	6	6.4
	c. Good	38	40.4
	d. Very good	34	36.4
	e. Excellent	12	12.8
	Total	94	100.0
2	Attitude of trainers in organizing training materials and facilities		
	a. Poor	3	3.2
	b. Fair	12	12.8
	c. Good	37	39.2
	d. Very good	34	36.2
	e. Excellent	8	8.5
	Total	94	100.0

Scale: Poor =1, fair =2, good =3, very good=4, excellent =5

Table 9 tries to treat the performance and attitude of trainers in organizing training materials and facilities. As it is indicated 4(4.3%) 6(6.4%) trainer respondents reported poor and fair respectively, 38(40.4%), 34(36.4%) trainer respondents reported good and very good

respectively and the remaining 12(12.8%) trainer respondents reported excellent. This shows that most of the trainer respondent give their idea that almost more than half of the trainer of TVET colleges graduate from universities, assume themselves they have "good" and "very good" performance in organizing training materials. In the contrary 4(4.3%) and 6(6.4%) reported "poor" and "fair" this shows that there are few trainers having lack of organizing training materials due to low educational level or lack of enough experience.

And the interview and the observation data indicated that the efficiency of trainers regarding the organizing of training material is very less. This is due to the wide performance gap in the activity of organizing of training materials and physical facilities. In another way some of the trainers assume that coordinating and organizing of different activities of the colleges is the major task of the administrative body, which is the wrong assumption they directed.

In Table 9, Item 2 attempts to answer the question, attitude of trainers in organizing training materials and facilities. Hence 3(3.2%), 12(12.8%) of the trainers responded as "poor" and "fair" respectively. And 37(39.4%), 34(36.2%) of the trainers responded as "good" and "very good". The remaining 8(8.5%) responded excellent.

This implies that the majority of trainers have a positive aspect in attitude of organizing training materials and facilities as to the feeling and attitude of the trainers about their colleges, in organizing, arranging and proper setting up to training materials. But they don't have the background how to organize the training materials, equipment and hand tools. Most of the TVET trainers did not take the course of material organization in their universities they graduate.

In another way, as there is no on job training and other similar trainings, some of the trainers expressed their view negatively. From this it can conclude that even though the college community understand or realize the importance of organizing training materials, to support for the improvement of training program. It seems that there is still the tendency that the government has to take complete responsibility to run TVET colleges. In other words, the need to raise the awareness of the trainers and the college community as a whole, especially, on the trend of the educational policy has to be given serious consideration.

Most of the trainers they want to acquire skill knowledge, as well as they bring a change in attitudes in organizing, coordinating and working with in a team. Especially the TVET agency obliged every trainer to be come all rounded regarding his/her fields or occupation areas to cover most of the activities around the college with in time limit.

Table 10: Responses on durability of training materials

No	Item	Responses	Respondents						df	X^2	P value
			Trainer		Trainee		Total				
			No	%	No	%	No	%			
1	To what extent do you think the available material in the system are effectively used	Very high	3	3.1	4	4.3	7	3.7	4	3.509	0.471
		High	19	20.2	12	12.9	31	16.5			
		Moderate	49	52.1	55	59.1	104	55.6			
		Low	20	21.2	16	17.2	36	19.2			
		Very low	3	3.1	6	6.4	9	4.8			
		Total	94	100	93	100	187	100			
2	To what extent is your college equipped with training materials and equipment	Very high	1	1.0	2	2.1	3	1.6	4	3.188	0.527
		High	11	11.7	8	8.6	19	10.1			
		Average	51	54.2	46	49.4	97	51.8			
		Low	22	23.4	31	33.3	53	28.3			
		Very low	9	9.5	6	6.4	15	8.0			
		Total	94	100	93	100	187	100			

Key: df=degree of freedom, sig=significant at alpha (∂) = 0.05

Table 10 shows efficiency of training materials and facilities of the college. Item number 1 of table 10 shows the trainers and trainees are

asked to respond whether they are effectively utilized the available training materials and physical facilities or not. Accordingly, from item number 1, 3 (3.1%) and 4(4.3%) of the trainers and trainee reported that the extent of availability of materials in the system are effectively used or very high and 19(20.2%) and 12(12.9%) of trainers and trainees are reported high respectively. 49(52.1%) of the trainers and 55(59.1%) trainees reported moderately. The remaining respondents reported that 20(21.2%) and 16(17.2%) reported respectively low and 3(3.1%) and 6(6.4%) reported respectively very low. The majority of the trainers and trainees reported that the durability of the training materials and physical facilities of the colleges are fairly utilized. This is due to the college minimum effort to orient the trainees the way how to use them.

In addition to this there is a communication gap between the college administrators and trainers regarding the tendering method and purchasing technique of machines, equipments and hand tools that are used for training process. For this purpose, the variety, sufficient and quality of materials and equipment, the better to accelerate the achievement of the desired objective.

The chi square test result (X^2 = 3.509, p= 0.471) shows that at ∂=0.05 level of significance, there is no statistical significance difference among the respondents. This may be because of the day to day proper handling occurred on the training materials of the college on the part of the trainers and trainees.

In the case of table 10 item number 2, (11(11.7%), 8(8.6%) of the trainers and trainees reported that the extent of the college equipped with training materials high and 51(54.2%), 46(49.4%) rated moderately equipped respectively and 22(23.4%), 31(33.3%) and 9(9.5%), 6(6.4%) rated low and very low respectively.

The majority of the trainers and trainees reported that the colleges equipped with training materials and facilities in moderate rate. This is due to the constraint of budget.

Where as success with which any training system can discharge its responsibility depends on how were it has organized with the necessary sufficient material. But the reality shows that most of the TVET colleges are not characterized by the presence of adequate, well planned and properly equipped and sufficient physical facilities.

The chi-square Test result ($x^2 = 3.188$, $p = 0.527$) shows that, at ∂=0.5 level of significance, there is a statistical significance difference among the respondents, this may be because of the damage regularly seen on the facility of the colleges by trainer and trainers.

Table 11: Maintenance of training materials and facilities

No	Item	Respondents	
		Trainee	
		No	%
1	In your college, are there any idle or unused training materials, equipments and machines?		
	a. Yes	60	64.5
	b. No	12	12.9
	c. I don't know	21.0	22.6
	Total	93	100.0
2	To what extend to trainers have the skill of maintaining facilities, training materials, tools and equipments in the college?		
	a. Very good	12	12.9
	b. Satisfactory	33	35.5
	c. Low	34	36.6
	d. I don't know	14	15.1
	Total	93	100.0

Scale: Very good > 3, satisfactory =3, and low from 0-3

As item 1 of table 11, in your college are there any idle or unused training materials equipments and machine? Regarding this question 60(64%) of trainee respondents said yes, 12(12.9%) of trainees said no and the remaining 21(22.6%) of the trainees respondents said I don't know. As it can seen from the data, it implies that most trainees, take their training program in practical work, many trainees to one machine ratio especially the heavy duty machines 12:1 ratio is normal in almost all TVET colleges. The trainers and the administrative staff also agree with the point raised. This shows in almost all colleges of TVET there is no preventive and predictive maintenance as a whole. There is also a skill gap in performance of trainers in maintaining the broken machines.

Item 2 of table 11 indicates the extent of the trainers in having the skill of maintaining facilities, training materials, tools and equipments. 12(12.9%) of trainee respondents rated "very good", 33(35.5%) rated "satisfactory", 34(36.6%) of the respondent responds "low" and the remaining 14(15.1%) said "I don't know".

This reflects that most of the trainees are not satisfied the performance of trainers in maintaining the training equipments and machines of the college as I have mentioned in item 2 of table 11. There is a wide skill gap in practical operation and maintenance activities. So the skill should full fill through different short term trainings in different industrial sectors. Otherwise; the impact can continue and the trainees may become the victim of the problem.

Table 12: Responses on purchasing system of training materials and facilities in TVET

No	Item	Respondents			
		Trainer		Trainee	
		No	%	No	%
1	Materials and equipment purchase on time?				
	a) Yes	47	50	55	60
	b) No	36	38	37	40
	C) I don't know	10	11.6	-	-
	Total	94	100	93	100
2	Who should participate in purchasing the training materials?				
	a) Trainers	15	16.67	18	20
	b) Department heads	10	11.11	18	20
	c) Committee with purchaser	69	72.22	57	60
	d) Deans	-	-	-	-
	Total	94	100	93	100
3	Who should prepare specifications of training materials for purchasing?				
	a) the department	62	66.0	55	60
	b) the trainers	26	27.98	37	40
	c) the purchaser	6	6.56	-	-
	d) the dean	-	-	-	-
	Total	94	100	93	100
4	Is the training material equipment purchased appropriate to the objective of the training program?				
	a) Yes	57	61.11	74	80
	b) No	16	16.87	19	20
	c) I don't know	21	22.22	-	-
	Total	94	100	93	100

In Table 12, item 1 respondents were asked to answer whether the training materials and equipments are purchased on time, it indicates that 47(50%) of the trainers said yes; 36(38%) said no, and the rest 10 (11.6%) said I don't know. Concerning trainees, 55(60%) answered yes, the rest 37 (40%) said no.

This shows that training materials and equipment are not purchased on time for those sample TVET colleges. Training materials should be purchased at the right time so that they will be delivered when they are needed, if may affect the training program. It is desirable to realize that the purchaser have the knowledge of the quality, the right quantity, the right price of the training materials.

In item 2, the respondents were required to answer who should participate in purchasing the training materials for the training. 15(16.67%) of the trainees said that trainers said that trainers should participate in training materials purchasing, 10(11.11%) stated that department heads should participate, where as the rest 69(72.22%) of the trainers said a committee with a purchaser should participate in purchasing the training materials. Regarding the trainees 18(20%) said that trainers should participate, again 18(20%) said that department heads should be participate in training materials purchasing the rest 57(60%) answered that a committee with a purchaser should participate in purchasing.

From the figure, one can infer that the purchasing activities for the training are conducted by a purchasing committee. The participation of all concerned, the departments heads the purchasers and the deans can be organized to that high concern and responsibility can be develop, at the same time experience and expertise knowledge of purchasing can be realized.

In item 3, of Table 12, 62(66%) of the trainers stated that the departments should prepare the specification, 26(27.98%) said that the trainers should prepare the specification and the rest 6(6.50%) said that purchaser should prepare the specification for the training. Concerning the deans 55(60%) answered that the department heads should prepare

the specification. Where as 37(40%) of the deans confirmed that the trainers should prepare the specification of training materials purchase.

This implies that the preparation of specification of training materials should prepared by department heads. It is believed that vocational training requires skills and knowledge on what type of material to what type of field of study and at the same time to what quantities and qualities of training materials. Therefore; has its non specific skills and knowledge which helps to facilitate and bring bout quality training.

Item 4 of Table 12 indicates that the equipment purchased is appropriate to the objective of the training program. As it is indicated 57(61.11%) of the trainers said yes, 16(16.87%) of the trainers said no, where as 21(22.22%) have answered that they do not know. Concerning the deans of the sample TVET colleges, 74(80%) said yes, the rest 19(20%) said no.

This shows that the training materials purchased in the training colleges are appropriately purchased. Since the fields of studies have their own characteristics, they need care and attention when purchase, for what purpose, what type of material equipment and tools according to the specification designed by the trainers or department heads.

CHAPTER FIVE

5. Summary, Conclusions and Recommendation

5.1. Summary

The main purpose of this study was to assess the practice and problems of training materials and facilities of TVET program in the government TVET colleges in Addis Ababa, in particular to industrial technology occupational fields. In light of this, the study focused on meeting the following specific objectives.

1 To identify the utilization of physical facilities of the colleges.
2 To assess the availability of storage and workshops facility and handling of the existing facility.
3 Assessing the availability and utilization of training materials.
4 To examine the maintenance and store operation capacity of the colleges.
5 Identity the problems encountered with purchasing, inventorying, handling and distribution system of the training colleges.

The study was guided by the following basic questions and attempted to answer them.

1. To what extent are the training materials and resources available?
2. To what extent is the available training materials and facilities are used?
3. How the training materials and facilities are managed?
4. What are the major problems encountered in the maintenance, of facilities and training materials management?
5. What strategies are in place to improve the training materials and facilities management in TVET colleges?

The study was carried out in three TVET colleges found in Addis Ababa city administration namely Misrak TVET College, Entoto TVET College and Tegbareid TVET College which were selected using purposive sampling.

The study focused on three groups of respondents: trainers, trainees and college deans and administration staff. Questionnaire was used to collect data from trainers and trainees. Interview was used to get data from college deans and administrative staff Out of the 196 questionnaires distributed to the two groups of respondents, 187(95.8%) were filled and returned and all of the intended interviews have participated in supplying the necessary information.

Finally, the data obtained were analyzed using percentage, T-test, chi-square and qualitative analysis for open ended question.

5.1.1. Major findings of the study

1. Availability of tools, equipment, machines and physical facilities of the college are not adequately furnished with the required training materials and facilities.
2. The physical facilities are not efficiently handled, as the study indicated the training materials such as equipments, tools and the machine were not given proper attention and they were not properly handled, controlled by the trainers and administrative staff members.
3. In the sample TVET colleges of the study, there are idle or under used equipments material resource and machineries with a problem of qualified trainer and inadequate material resource. Therefore, the available training materials in these colleges are not effectively used.
4. According to the trainees response, it is found that most trainers have no skills in maintaining equipment, tools and machineries, but from

the observation conducted, it is found that they lack not only skill of maintenance, but also they lack of the commitment.

5. In planning of training materials and physical facilities as the study shows, in most of the TVET colleges, the plan of training materials was prepared by the members of each department; the study indicated that the trainer and administrative staff of TVET colleges showed limited participation in training materials planning.
6. Even if the specification of training materials was prepared by each of the trade or occupation, the purchased training materials are not according to the standard, the purchasing procedure also is not known by most of the trainers of the college and also takes long time due to lack of follow-up by the concerned body.
7. In case of distribution and efficiency of training materials, were not distributed to the colleges on time and distribution of training materials was not given due concern by the dean of the college and administrative staff as well.
8. The durability of training materials, efficiency of training materials, relevance of training material, simplicity of training material were found to be average; and maintainability of training material was below average. And of the trainers reported that they did not know the availability of training materials guideline in the college.

9. Regarding availability of training materials and facilities
   - As the mean value of the two groups of respondents that is 2.55 and 2.93 for trainers and trainees the extent of the availability tools, equipment, machines and physical facilities of the colleges are not adequately furnished with required training materials.
   - As asserted by the majority of trainer and trainee respondents the classroom size and safety precautions, according to he shop organization management, workshops of TVET colleges are not

standard and the classroom size is below standard as the two groups mean result shows between 2.0 and 3.0.

- The majority of respondents agree that 80 percent training to be practical were not in accordance with what is intended and most of TVET colleges did not deliver an outcome based TVET system. As the mean result of two groups shows between 2.0 and 3.0

10. Regarding utilization of training materials facilities
    - The respondents were not satisfied and the interview responses also confirm that practice of maintaining and reusing the already utilized material is very low. The mean result of two groups shows in the range of 2 and 3
    - The majority of respondents and from the observation done shows that the practice of maintaining and reusing the old materials and equipments was not effective as it should be
    - The trainer and trainees respondents agree that, the destruction of college properties is not decreasing and luck of skill and low of understanding about their duties and responsibilities.

11. Regarding managerial activities on training materials and facilities
    - The majority of respondents of trainers and trainees that is 74 percent have asserted that, the dean of the college are moderately efficient in coordinating the staff in planning the training materials and facilities management.
    - Majority of the trainees support the practical effort of the dean where as most of the trainers oppose this idea. As indicated from the interview. Administrative staff, supports that the practical effort of the dean is low.

- In creating conducive environment in the training process of the college, the dean score "low" and "very low" and this is may due to lack of commitment and skill.

12. Regarding the factors affecting training materials and facilities
    - As the mean result of the two groups shows between 2.0 and 3.0 there is no systematic way of handling, classifying and coding tools and materials.
    - As the information obtained through interview and observation revealed that there is no maintenance department for utilizing the broken un used training machine, equipments and hand tools

13. Regarding strategies that improve the management of training materials facilities
    - The participation level was average for trainers and trainees and communicates moderately with the management. As the mean result of the two groups shows between 2.0 and 3.0. But from the interview of administrative staff obtained the information that the level of participation in planning and resource allocation shows a tendency of decreasing as we go down from deans to trainers and trainees.
    - As the majority of respondents assert that most of the deans have lack of practical, technical and tendencies know how of the industrial and technological occupation to plan the implementation training materials and facilities the information obtained from the interview also the idea.

5.2. Conclusions

Vocational education is an expensive program compared to other academic courses and it has a close link with training materials. In light of the findings of the study, the following conclusions were drawn:

Although, the colleges are not equipped with all the necessary training materials and facilities. The scarce, resource were not efficiently utilized to the best of their capacities and as a result, there is under utilization of the physical facilities and training materials.

The physical facilities of the colleges are not efficiently utilized due to lack of coordinated work by the college community and the administrators of the colleges did not efficiently manage the training materials due to negligence, lack of adequate knowledge and skill in the training materials management practice. The existing government material management guideline is not implemented properly by the administrator and not known by the trainer of the colleges. Therefore, this paves the way to improper purchasing, inventory control place and exerts negative impact on the training process.

The maintenance activities of the colleges are poor. When the training material, equipments and machines are broken or damaged, immediate measure is not taken to repair and reused it. This is due to improper allocation of budget. As a result of this, a lot of training materials are out of use. Therefore, it is possible to conclude that scarcity on the one hand and improper utilization on the other affected the smooth implementation of training program in the colleges.

5.3. Recommendations

On the basis of the findings and conclusions made, the following recommendations are forwarded to improve the training materials and physical facilities management in the colleges.

To utilize the college training material efficiently, the commitment of trainers and assistance technicians in addition to the administrative

body of the colleges are very crucial. Awareness raising work should be done by the TVET Agency to the dean, department heads and the trainer, regarding accountability and responsibilities of the trainees for the facilities of the colleges.

Promoting the idea of wise use of available scarce resources by the trainees, trainers and administrative staff is essential in order to maximize the effective use of available training materials.

The guideline, rules and regulation of TVET colleges should be open and accessible for trainers, trainees and administrative staff. Using and understanding these documents may contribute for efficient utilization of training materials in the college and coordinated work should be mandatory for the college community .Besides, capacity building program should be carried out by TVET Agency. To justify and monitor the application of the guidelines. The colleges should devise efficient and effective system which enables them to monitor and control training materials.

According to the findings of the study, in terms of problem of training materials utilization of Addis Ababa TVET colleges, the practice of purchasing, skill on maintenance, improper handling of training materials, income generating activities and lack of skills in training materials and physical facilities management should be evaluated vigorously by the college to enable the vocational training colleges run their program more effectively and efficiently.

The problem can be resolved by the introduction of modern techniques. Utilize the college physical facilities efficiently, awareness raising work should be done by the dean, department heads and the trainer, regrinding accountabilities and responsibilities of the trainees for the

facilities of the college capacity building program should be offered for administration staff for effective and efficient utilization of the colleges training materials.

The finding reveals that very expensive and important machinery was out of use due to lack of spare parts. To solve this problem there should be a maintenance section with the necessary equipment in each department. For this purpose, the college officials should work jointly with the trainers and TVET Agency and prepare short-term trainings, workshops, and sharing of experience with other TVET colleges and other organization regarding maintenance and capacity building program of trainers and workshop technicians.

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Appendix I

Addis Ababa University

School of Graduate Studies

Department of Business Education

A. Questionnaire to be filled by trainers, department heads and administrative staffs.

General direction

The purpose of this questionnaire is to collect first-hand information on the practice and problems of training materials and facilities management in TVET colleges of Addis Ababa. Hence your genuine, frank and timely response are vital in determining the success of this study. So, I kindly request your contribution in filling the questionnaire completely and honestly. The information you give will be kept strictly confidential.

Note that: A. No need of writing your name

B. Please circle answers given in a multiple choice form and using a "✓" or "x" those presented in a table form.

C. Please supply brief responses to open ended questions wherever needed.

Thank you in advance for taking time to complete this questionnaire.

Part I: Personal Information

1. Name of the college _____

2. Sex ☐ Male ☐ Female

3. Age ☐ 25 years and below ☐ 36-45 years ☐ 56-65 years
☐ 26-35 years ☐ 46-55 years

4. Your educational level
☐ High school completed ☐ College diploma ☐ MA/MSC
☐ TVET diploma ☐ BA/BSC ☐ PhD

Other _____

5. Area of specialization _____

5.1 Present post

☐ Trainer ☐ Department head

☐ Section head ☐ if any other, please specify: _____

5.2 Any training received relevant to your post: _____

_____

6. Year of services in TVET institution (college)

☐ 1-5 years ☐ 11-15 years

☐ 6-10 years ☐ 16 and above

7. Total service year

☐ 1-10 years ☐ 21-30 years

☐ 11-20 years ☐ 31 and above

If any years of services in other institutions _____

Part II: Availability of training materials and facilities in the college

1. Does your college provide you with adequate type of training materials needed to train your lesson properly?

A. Yes B. no C. I don't know

2. To what extent is your college equipped with training materials and equipment

A. Very high C. average

B. high D. low E. very low

3. If your response is 'low' and 'very low' what alternatives have you been using

A. To use wisely what is available

B. To leave some of the tasks

C. To report to concerning bodies and wait

D. All

E. Other / please specify _____

4. To what extent do you think the available training materials in the system are effectively used?

A. Very high C. Moderately

B. High D. low E. very low

5. Have you used your college physical facilities efficiently?

A. Yes B. No C. I don't know

6. How do you rate your college status in availability of training materials and facilities management among other TVET college in Addis Ababa

A. Excellent B. very good C. good D. fair E. poor

7. To what extent does your college engage in income generating activities

A. very high C. Moderately

B. High D. low E. very low

8. Which of the following training materials are sufficiently available in your college? Rate sufficiently of the training materials in the table. The number indicates:

5. Highly available 4. Moderately available 3. Available

2. Scarcely available 1. Not available

No	Items regarding availability of training materials	5	4	3	2	1
8.1	Availability of raw materials					
8.2	Teaching aids and manuals					
8.3	Availability of machines					
8.4	Availability of equipments					
8.5	Availability of measuring devices					
8.6	Availability of hand tools					
8.7	Availability of professional journals					
8.8	Classroom size $2m^2$/trainee					
8.9	Enough floor space for practical work					
8.10	Safety precaution, example fire extinguisher					
8.11	Blackboard and white board					

9. Which of the following physical facilities are sufficiently available in your college? Rate sufficiently of the facility in the table. The number indicates.

5. Highly available 4. Moderately available 3. Available

2. Scarcely available 1. Not available

No	Items regarding availability of physical facilities	5	4	3	2	1
9.1	Access to water supply					
9.2	Access to electric supply					
9.3	Library					
9.4	Display corner					
9.5	Attractiveness of the college (sport field, tree fence etc					
9.6	College building and standard workshop					
9.7	Access to future expansion					
9.8	Availability of student service (cafeteria, toilet etc					
9.9	Health facilities					
9.10	Internet access					
9.11	Enough light and ventilation of workshops					
9.12	Space for storage					

10. What additional problems have you observed in training materials and facilities of your college _____

_____

_____

Part III: Appropriateness and usage of training materials and facilities

1. How do you rate the quality, relevance and usage of training materials and facilities?

No	Items regarding appropriateness of training materials and facilities	5	4	3	2	1
1.1	Service ability of training materials and facilities					
1.2	Durability of training materials and facilities					
1.3	Relevance of training materials and facilities					
1.4	Simplicity of using training materials					
1.5	Efficiency of training materials					
1.6	Effective utilization of training materials and facilities					

2. What do you suggest and recommend to solve the problems of effective utilization of training materials and facilities

---

Part IV: Organization of training materials and facilities

1. Who is responsible for training materials planning?

   A. Trainers C. Department heads

   B. Deans D. Section heads E. All

2. to what extent is the dean of the college efficient in coordinating the staff in planning the training materials and facilities

   A. Very high C. Moderately

   B. high D. low E. very low

3. How do you rate the efficiency of trainers in the college regarding the efficient organizing and proper handling of training materials and facilities. The number indicates 5. Excellent 4. V. good 3. Good 2. Fair 1. Poor

No	Items regarding and proper handling	5	4	3	2	1
3.1	Performance of trainers in organizing training materials and facilities					
3.2	Attitude of trainers in organizing training materials and facilities					

Part V: Management activities

1. Does the dean provide awareness-raising instruction regarding the utilization of training materials/equipment?

   A. Yes B. No C. sometimes D. I don't know

2. Does your college have disposal and surplus materials

   A. Yes B. No C. I don't know

3. What measures the college take in regard to surplus or obsolete materials?

   A. Give them to poorly furnished institutions

   B. Not disposed

   C. Burn them

   D. Direct sale to trainers and administrative staff

   E. Any other measures please specify _____

4. Are the properties in store-room properly recorded, handled, identified, classified and coded?

   A. Yes B. No C. I don't know

5. The store-room of the college is managed by:

   A. employed person B. deans C. assigned trainer

   D. others if any _____

6. How effective is the college in maintaining and utilizing the broken and unused training materials

   A. highly B. moderate C. low D. not at all

7. If your response to question number "6" is "highly" or moderate what type of maintenance they usually utilize?

   A. Preventive maintenance C. Predictive maintenance

   B. Breakdown maintenance D. No maintenance at all

8. To what extent do you perform the following managerial activities in your college. Please, show your level of performance by a thick /✓/ or "x" mark on the space provided.

	Managerial activities	Very highly	Highly	Satisfactory	Poorly	Not at all
8.1	Need assessment					
8.2	Planning					
8.3	Purchasing system					
8.4	Allocation					
8.5	Distribution					
8.6	Controlling mechanism					
8.7	Auditing					
8.8	Inventorying					

9. Are the training materials and equipment purchased on time?

   A) Yes B) No C) I don't know

10. Who should participate in purchasing the training materials for the program?

    A) Trainers B) Department heads C) Purchasers D) Deans

11. Who is responsible for the activity of specification of training materials for purchase?

    A) The department B) The trainer C) The purchaser

    D) The dean

12. Do you think the purchases made by your college are approrpate to the objective of the training process

    A) Yes B) No C) I don't know

13. In your opinion, the managerial activities practiced in your college favors what? Please rate your answers as

    1. Not participatory 2. Moderately participatory

    3. Highly

		1	2	3
13.1	Planning			
13.2	Plan implementation			
13.3	Program management			
13.4	Resource allocation			
13.5	Monitoring and evaluation			

14. What additional problems you observed in training materials and facilities management and what are the possible solutions for the problems _____

_____

VI: Items regarding problems encountered in training materials and facilities management

1. The following questions are forwarded to know level of agreement in training materials and facilities management. Kindly check your position on the scale as the statement first impress you.

No	Items	Strongly agree	Agree	Undecided	Disagree	Strongly disagree
1.1	The deans of the colleges have the necessary knowledge and skills in training materials and facilities management					
1.2	Training materials positions are adequately staffed					
1.3	Necessary follow-up of the purchasing process on side of the deans, trainers and shop technician					
1.4	Regarding purchasing there is right quality, right quantity, right price and right time					
1.5	Good efficiency of trainers and shop technicians regarding the proper utilization and handling of training materials and equipment					

2. Do you think the training materials and facilities to TVET colleges are sufficient to achieve the desire goal? _____

Thanks again.

Appendix II

Addis Ababa University
School of Graduate Studies
Department of Business Education

B. Questionnaire to be filled by Trainees

Dear respondents

General direction

The purpose of this questionnaire is to collect first-hand information on the practice and problems of training materials and facilities management in TVET colleges of Addis Ababa. Your cooperation in providing pertinent and reliable information will be invaluable. So, please fill out the questionnaire completely and honestly.

Note that: A. No need of writing your name

B. Please circle answers given in a multiple choice form and using a "✓" or "x" those presented in a table form.

C. Please supply brief responses to open ended questions wherever needed.

Thank you in advance for taking time to complete this questionnaire

Part I. Personal Information

1. Name of the college _____

2. Sex ☐ Male ☐ Female

3. Age ☐ 20 years and below ☐ 31-40 years
   ☐ 21-30 years ☐ 41-50 years

4. Your educational level
   ☐ Level II ☐ Level Iv
   ☐ Level III ☐ Level V

5. In this year, are you
   ☐ 1st year trainer ☐ 3rd year trainer
   ☐ 2nd year trainer ☐ 4th year trainer
   ☐ 5th year trainer

6. Your field of study (occupation) _____

Part II: Availability of training materials and facilities in the college.

1. To what extent is your college with training materials and equipment?

   A. Very high C. Moderately

   B. High D. Low E. Very low

2. To what extent do you think the available training materials in the system are effectively used?

   A. Very high C. Moderately

   B. High D. Low E. Very low

3. In your college, are there any idle or unused training materials, equipments and machines?

   A. Yes B. No C. I don't know

4. If your answer for question number is 3 is "yes". How did these training materials, equipments and machines come to be idle (you can respond more than one).

   A. Faulty purchase C. being obsolete E. misuse

   B. lack of quality D. getting old F. faulty allocation

5. What are the major reasons for shortage of training materials and facilities of your college? _____

6. Which of the following training materials and facilities are sufficiently available in your college? Rate sufficiently of the training materials in the table. The number indicates:

   5. Highly available 4. Moderately available 3. available

   2. Scarcely available 1. Not available.

No	Items regarding availability of training materials and facilities	5	4	3	2	1
6.1	Availability of raw materials					
6.2	Availability of machines, equipments and hand tools					
6.3	Availability of safety precautions, ex fire extinguisher					
6.4	Availability of standard workshop layout					
6.5	Availability of manuals, measuring devices, white board					
6.6	Availability of standard library					
6.7	Access to water and electric supply					
6.8	Availability of health facilities and internet accesses					
6.9	Attractiveness of the college (sport field, tree, fence,					
6.10	Access to future expansion and trainee service (cafeteria, toilet etc)					

Part III: Appropriateness and usage of training materials and facilities

1. How do you rate the quality, relevance and usage of training materials and facilities?

   The number indicates 5. Excellent 4. Very good 3. Good 2. Fair 1. Poor

No	Items regarding appropriateness of training materials and facilities	5	4	3	2	1
1.1	Serviceability of training materials and facilities					
1.2	Durability of training materials and facilities					
1.3	Relevance of training materials and facilities					
1.4	Simplicity of using training materials and facility					
1.5	Efficiency of training materials and facilities					
1.6	Effective utilization of training materials and facilities					

2. What do you suggest and recommend solving the problems of effective utilization of training materials and facilities _____

_____

Part IV: Organization of training materials and facilities

1. Who is responsible for training materials planning?

   A. Trainers C. Department heads

   B. Deans D. low E. Very low

2. To what extent is the dean of the college efficient in coordinating the staff in planning the training materials and facilities

   A. very high C. moderately

   B. high D. low E. very low

3. Why do you think trainees break or misuse the training materials and equipments?

   A. They don't know its cost C. They are careless

   B. The quality of training materials is very low D. All can be answers

4. How do you rate the capacity of your college from other colleges regarding the organizing of workshops, and working manuals?

A. Among the best C. Among the poor

B. Among the average D. I don't know

Part V: Management activities

1. Does the dean provide awareness raising institution regarding the utilization of training materials /equipment?

A. Yes B. No C. Sometimes D. I don't know

2. What measures the college take in regard to surplus or obsolete materials?

A. Give them to poorly furnished institutions

B. Not disposed

C. Burn them

D. Direct sale to trainers and administrative staff

E. Any other measures please specify _____

3. Are the properties in store-room properly recorded, handled, identified classified and coded?

A. Yes B. No C. I don't know

4. How effective is the college in maintaining and utilizing the broken and unused training materials

A. highly B. moderately C. low D. not at all

5. Is there inventory management and control of training materials in your college

A. Yes B. No C. I don't know

6. To what extend do trainers have the skill of maintaining facilities, training materials, tools, and equipments in the college?

A. very good B. satisfactory C. low D. I don't know

7. Are the training materials and equipment purchased on time?

A) Yes B) No C) I don't know

8. Who should participate in purchasing the training materials for the program?

A) Trainers B) Department heads C) Purchasers D) Deans

9. Who is responsible for the activity of specification of training materials for purchase?

A) The department B) The trainer C) The purchaser

D) The dean

10. Do you think the purchases made by your college are approrpate to the objective of the training process

A) Yes B) No C) I don't know

11. In your opinion, the managerial activities practiced in your college favors what? Please rate your answers as

1. Not participatory 2. Moderately participatory

3. Highly

		1	2	3
11.1	Planning			
11.2	Plan implementation			
11.3	Program management			
11.4	Resource allocation			
11.5	Monitoring and evaluation			

Part VI: Items regarding problems encountered in training materials and facilities management

1. What major problems do you observe in training materials and equipment planning?

2. What are the major reasons for training materials damage in your college

3. What do you suggest the best possible solution for the problem in utilization of training materials in your college?

Appendix III

በአዲስ አበባ ዩኒቨርስቲ
የድህረ ምረቃ ኘሮግራም
የቢዝነስ ትምህርት ክፍል

በአዲስ አበባ ከተማ አስተዳደር ቴክኒክና ሙያ ትምህርትና ስልጠና ኤጀንሲ መደበኛ የሆኑትን የቴክኒክና ሙያ ትምህርትና ስልጠና በመንግስት ኮሌጆች በመሰልጠን ላይ ያሉ ሰልጣኞች የሚሞላ መጠይቅ ነው።

የዚህ መጠይቅ ዓላማ መደበኛ በሆኑት የቴክኒክና ሙያ ትምህርትና ስልጠና ኮሌጆች በስልጠናው ሂደት የማሰልጠኛ መሳሪያዎች አጠቃቀምና አያያዝ ላይ ያጋጠሙ ችግሮችንን የመፍትሔ ሀሳብ ለመጠቆም የተዘጋጀ መጠይቅ ነው። ለተዘጋጀለት ዓላማ ግብ መምታት የእርስዎ ግልፅና ትን መልስ ይጠበቃል። ይህንን በማድረግዎም ለችግሩ የመፍትሄ ሀሳብ አስተዋፅኦ አለው።

የሚሰጡት ምላሽ በሚስጥር የሚያዝ መሆኑን አውቀው ጥየቄውን በጥንቃቄና በትዕግስት እንዲሞሉ በትህትና እጠይቃለሁ።

በቅድሚያ ላደረጉት ትብብር አመሰግናለሁ።

አጠቃላይ መመሪያ

ሀ. ስም መፃፍ አያስፈልግም

ለ. በምርጫ መልክ የቀረቡት ጥየቄዎች መልሶቻቸው ፊደል ላይ ያክበቡ እንዲሁም በምርጫ ሳጥኖች ላይ የሰፈሩት ጥየቄዎች ለይ የ " ✓ " ወይም "x" ምልክት ያድርጉ። አማርር መግለጫ ለመስጠት ከፈለጉ በተሰጥዎ ክፍት ቦታ ላይ በአጭሩ ይግለፁ።

ክፍል አንድ፡ አጠቃላይ መረጃ

1. የኮሌጁ ስም _____
2. ፆታ ወንድ ☐ ሴት ☐
3. ዕድሜ ከ20 በታች ☐ ከ21-30 ☐ ከ31-40 ☐ ከ41-50 ☐
4. የትምህርት ደረጃ፡ ደረጃ ሁለት ☐ ደረጃ አራት ☐
   ደረጃ ሦስት ☐ ደረጃ አምስት ☐

5. በአሁኑ አመት የስንተኛ አመት ሰልጣኝ ነህ/ነሽ?

የአንደኛ አመት ☐ የሦስተኛ አመት ☐ የአምስተኛ አመት ☐

የሁለተኛ አመት ☐ የአራተኛ አመት ☐

6. የሚሰለጥነበት የመ.ያ አይነት _____

ክፍል ሁለት፡ የስልጠና መሳሪያዎች መሟላት በተመለከተ

1. በኮሌጁ የመሰልጠኛ መሳሪያዎችና ዕቃዎች ምን ያህል ተሟልተዋል?

ሀ. በጣም ከፍተኛ ሐ. መካከለኛ

ለ. ከፍተኛ መ. ዝቅተኛ ሠ. በጣም ዝቅተኛ

2. በስልጠናው ሂደት ላይ የማሰልጠኛ መሳሪያዎች ምን ያህል በብቃት ትጠቀማላችሁ?

ሀ. በጣም ከፍተኛ ሐ. በመካከለኛ ደረጃ

ለ. በከፍተኛ ደረጃ መ. በዝቅተኛ ደረጃ ሠ. በጣም ዝቅተኛ

3. በኮሌጃችሁ ውስጥ ያለ ስራ የቆመ የማሰልጠኛ መሳሪያዎችና ማሽኖች ይገኛሉ?

ሀ. አሉ ለ. የሉም ሐ. አላውቅም

4. የተራ ቁጥር "3" ጥያቄ መልስህ/ሽ/ "አሉ" ከሆነ እንዴት ያለ ስራ ሊቆመ ቻለ /ከአንድ በላይ መልስ መስጠት ይቻላል/

ሀ. በስህተት የተገዙ በመሆናቸው ሐ. ጊዜ ያለፈባቸው በመሆኑ

ለ. ጥራት የጎደላቸው በመሆናቸው ሠ. የአጠቃቀም ችግር

መ. የአገልግሎት ዘመኑ በመድረሱ /በእርጅና/

5. በኮሌጃችሁ የማሰልጠኛ መሳሪያዎች እጥረት ዋና ምክንያት ምንድ ነው ይላሉ

_____

6. ከታች ከተዘረዘሩት የማሰልጠኛ መሳሪያዎችና ሌሎች አገልግሎቶች በኮሌጃችሁ በበቂ ሁኔታ ስለመገኘታቸው ደረጃ ስጥ/ስጪ. ከታች የተሳፉት ቁጥሮች የሚያመለክቱት፡ 5. በከፍተኛ ደረጃ ይገኛሉ 4. በመካከለኛ ደረጃ ይገኛሉ 3. በመጠኑ ይገኛሉ 2. እጥረት አለ 1. ፈፅሞ የሉም

ተ.ቁ	የማሰልጠኛ መሳሪያዎችና ሌሎች አቅርቦት በበቂ ሁኔታ መገኘት በተመለከተ	5	4	3	2	1
6.1	በቂ ጥሬ ዕቃ የመገኘት ሁኔታ					
6.2	በቂ ማሽኖች የእጅ መሳሪያዎች የመገኘት ሁኔታ					
6.3	በተግባር ስልጠና ላይ የአደጋ መከላከያ መሳሪያ ምሳሌ እሳት ማጥፊያ የመገኘት ሁኔታ					
6.4	ደረጃ የጠበቀ የተግባር ስልጠና ክፍል (workshop)					
6.5	የመሳሪያዎችና የማሽኖች አጎራሽን መመሪያ (manual), የመለኪያ መሳሪያዎችና ነጭ ሰሌዳ (white board)					
6.6	ደረጃውን የጠበቀ ቤተመፃህፍት					
6.7	የቢንቢ ውሀና የኤሌክትሪክ አቅርቦት					
6.8	ክሊኒክና የኢንተርኔት አቅርቦት					
6.9	የኮሌጁ ማራኪነት /የስፖርት ሜዳ ባፎች አጥር ወዘተ/					
6.10	የሰልጣኞች አገልግሎት የሚሰጥ /ካፍቴሪያ ሽንት ቤት ወዘተ/ እና ለወደፊት ኮሌጅ የሚስፋፉበት ቦታ/					

ክፍል ሦስት፡ የማሰልጠኛ መሳሪያዎች ተስማሚነትና አጠቃቀማቸው በተመለከተ

1. የመሰልጠኛ መሳሪያዎችና ሌሎች አቅርቦቶች ጥራት ተገቢነትና አጠቃቀማቸው በተመለከተ ደረጃ ስጥ/ስጪ ከታች የተዛፉት ቁጥሮች የሚያመለክቱት 5. እጅግ በጣም ጥሩ 4. በጣም ጥሩ 3. ጥሩ 2. በመጠኑ 1. አነስተኛ

ተ.ቁ	የማሰልጠኛ መሳሪያዎችና ሌሎች አቅርቦቶች ተስማሚነት በተመለከተ	5	4	3	2	1
1.1	አገልግሎት አሰጣጣ ሁኔታ ✓					
1.2	ብዙ ጊዜ የማገልገል /የመቆየት/ ሁኔታ					
1.3	የማሰልጠኛ መሳሪያዎች አግባብነት ሁኔታ					
1.4	የማሰልጠኛ መሳሪያዎች በቀላሉ የመጠቀም ሁኔታ ✓					
1.5	የማሰልጠኛ መሳሪያዎች የብቃት ሁኔታ					
1.6	የማሰልጠኛ መሳሪያዎች በሚገባ የመጠቀም ሁኔታ					

2. የማሰልጠኛ መሳሪያዎችና ሌሎች አቅርቦቶች በተመለከተ ያለውን ችግር ለመቅረፍ በሚገባ ለመጠቀም እንዲቻል የግልም አስተያየትና የድጋፍ ሀሳብ ካለ በገልፁልን

ክፍል አራት፡ የመሰልጠኛ መሳሪያዎችና ሌሎች አቅርቦቶች የመቀናጀትና ማቀናበር በተመለከተ

1. የመሰልጠኛ መሳሪያዎችና ሌሎች አቅርቦቶች ዕቅድ በተመለከተ ሀላፊነት ያለው ማን ነው

   ሀ. አልጣኞች ለ. የኮሌጁ ዲኖች ሐ. የትምህርት ክፍል ተጠሪዎች (department heads)

   መ. የክፍል ተጠሪዎች (section heads) ሠ. ሁሉም

2. የኮሌጁ ዲን የማሰልጠኛ መሳሪያዎችና ሌሎች አቅርቦቶች ለዕቅድ በተመለከተ የኮሌጁን ማህበረሰብ የማስተባበር ብቃቱ ምን ያህል ነው

   ሀ. በጣም ከፍተኛ ለ. ዝቅተኛ ሐ. መካከለኛ መ. ዝቅተኛ ሠ. በጣም ዝቅተኛ

3. የማሰልጠኛ መሳሪያዎችና ሌሎች አቅርቦቶች በሰልጣኞች የመሰበር የማጉሳቆልና ያለ አግባብ የመጠቀም ጉዳይ ምክንያቱ ምንድ ነው ብለው ያስባሉ

   ሀ. ዋጋው ምን ያህል እንደሆነ ስለማያውቁ ሐ. ግድየለሽ በመሆናቸው

   ለ. የመሳሪያዎቹ የጥራት ጉድለት ምክንያት መ. መልስ ሊሆኑ ይችላሉ

4. የኮሌጅም አቅም የተግባር ትምህርት የማሰጥበት ክፍል (work shop) እንዲሁም የማስተማሪያ መመሪያ (manuals) በማደራጀት ከሌሎች ኮሌጆች አንፃር በየትኞቹ ደረጃ ይመድቡታል

   ሀ. በጣም ጥሩ ከሆኑት ለ. በመካከለኛ ደረጃ ከሚገኙት

   ሐ. በጣም በዝቅተኛ ደረጃ ከሚገኙት መ. አላውቅም

ክፍል አምስት፡ የአመራር ወይም የማስተዳደር ስራዎች በተመለከተ

1. የኮሌጁ ዲን የመሰልጠኛ መሳሪያዎች አጠቃቀምና አያያዝ በተመለከተ የማነቃቂያ መመሪያዎች ሰጥቶ ያውቃል

   ሀ. አዎ ለ. ሰጥቶ አያውቅም ሐ. አልፎ አልፎ ይሰጣል መ. አላውቅም

2. ኮሌጁ ትርፍና ጊዜው ያለፈበት ማተሪያል ለማስወገድ ምን እርምጃ መውሰድ አለበት ይላሉ?

   ሀ. ምንም ለሌላቸው ተቋሞች መስጠት ለ. አለመጣል ሐ. ማቃጠል

   መ. ለኮሌጁ አሰልጣኞችና የአስተዳደር ሰራተኞች በመሸጥ ማስወገድ

   ሠ. ሌላ መወሰድ የሚገባ እርምጃ ካለ በገልፁልን _____

_____

3. በአንተ/ቺ አስተሳሰብ የኮሌጅ አስተዳደር ስራዎች ሲከናወኑ አሳታፊ ስለመሆናቸው በዚህ መልኩ መልስ ስጥ /ጪ/

1. አሳታፊ አልነበሩም 2. በመካከለኛ ደረጃ ይገለፃል 3. በከፍተኛ ደረጃ ያሳትፋሉ

		1	2	3
3.1	በፅቅድ ዙሪያ			
3.2	በፅቅድ ተግበራ ላይ			
3.3	በገንዘብ አስተዳደር ዙርያ			
3.4	በሀብት አጠቃቀም ዙርያ			
3.5	በክትትልና ግምገማ ዙርያ			

4. የማሠልጠኛ መሣሪያዎች በወቅቱ ይገባሉ?

ሀ/ አዎ ለ/ አይገዙም ሐ/ አላውቅም

5. በማሠልጠኛ መሣርያዎች ላይ በግዢ የሚሳተፈው ማን ነው?

ሀ/ አሠልጣኞች ለ/ ተቀዳሚ መምህራን ሐ/ ዕቃ ግዢዎች መ/ርእሰ መምህርን

6. የማሠልጠኛ መሣርያዎች ግዢ መስፈርት / specification/ ሆላፊነት ወስዶ የሚያዘጋጀው ማን ነው ?

ሀ/ ተቀዳሚ መምህሩ ለ/ አሠልጣኙ ሐ/ ዕቃ ግዢው ክፍል መ/ ር/መምህሩ

7. በኮሌጃችሁ የሚገዙት የማሠልጠኛ መሣርየዎች ብቁና ተገቢ ናቸው ብለህ ታስብያለህ/ሽ/ ?

ሀ/ አዎ ለ/ አላስብም ሐ/ አላውቅም

8. በኮሌጁ መጋዘን የሚገኙ ንብረቶች በአግባቡ ተመዘግበዋል፣ ተይዘዋል፣ ተሰፍኒል ተደራጅኒል እንዲሁም መለያ ቁጥር ተደርጉላቸዋል

ሀ. አዎ ለ. አልተደረገላቸው ሐ. አላውቅም

9. ኮሌጁ የተሰበሩና ከጥቅም ውጭ የሆኑ የማሰልጠኛ መሳሪያዎች ጠግኖ ስራ ላይ የማዋል ብቃቱ እንዴት ነው?

ሀ. ከፍተኛ ለ. መካከለኛ ሐ. ዝቅተኛ መ. ፈፅሞ አይጠግንም

10. በኮሌጃችሁ የመሳሪያዎች ቆጠራና ቁጥጥር ይደረጋል

ሀ. አዎ ለ. አይደረግም ሐ. አላውቅም

11. አሰልጣኞች የማሰልጠኛ መሳሪያዎች ማሽኖች እንዲሁም ሌሎች አቅርቦቶች ጠግነው ስራ ላይ የማዋል ችሎታቸው ምን ያህል ነው::

ሀ. በጣም ጥሩ ለ. በቂ ሐ. ዝቅተኛ መ. አላውቅም

ክፍል 6 ፡ የማሰልጠኛ መሳሪያዎችና ሌሎች አቅርቦቶች በተመለከተ ያጋጠሙ ችግሮች በተመለከተ

1. በመሰልጠኛ መሳሪያዎች ዕቅድ በተመለከተ ያስተዋሉት ዋና ችግር የሚሉት ካለ በገለፁልን?

2. የማሰልጠኛ መሳሪያዎች በየጊዜው የመስበር ዋና ምክንያት የሚሉት ምንድ ነው?

3. በክሊጁ በማሰልጠኛ መሳሪያዎች አጠቃቀምና አያያዝ ረገድ ዋና የችግሩ የመፍትሄ ሀሳብ ይሆናል የሚሉት ካለ ይግለፁልን

በድጋሚ ለትብብርዎ አመሰግናለሁ

Appendix Iv

Interview

Interview guide for the administrative staff (store keeper, and shop assistances)

Part I: Personal Information

1. Name of the college _____
2. Sex Male ☐ Female ☐
3. Age _____
4. Educational level _____
5. Area of specialization _____
6. Year of service in TVET institutions

Part II Interview Guides

1. Does the college have sufficient training material?

_____

2. Does the physical facility of the college efficiently utilized?

_____

3. Do the trainers and trainees concern with training materials feel a sense of responsibility?

4. Does your college provide awareness-raising instruction the way to utilize the facilities of the college?

_____

5. How do you share the budget for each department for purchase of material?

6. Is there a guideline regarding the training materials management?

7. To what extent storage and inventory management is implemented in the college? How many times inventory take place?

8. What measures your college take in regard to surplus and obsolete materials

Appendix V

Interview Guide

Interview guide for the administrative vice dean of the college

Part I: Personal information

1. Name of the college _____
2. Sex Male ☐ Female ☐
3. Age _____
4. Educational level _____
5. Area of specialization _____
6. Year of service in TVET institutions (colleges)
7. Total service year _____

Part II Interview Guides

1. How do you rate the state of training materials and facilities available for the implementation of the program? _____

2. What factors do you think affect the availability of training materials in your college? _____

3. Do the trainers and trainees concern with training materials feel a sense of responsibility?

4. What are the major reasons for training materials, and facilities damage in your college? _____

5. Do you think the allocated training materials and facility to TVET colleges are sufficient and appropriate to achieve the desire goal

6. Do you have a guide line to organize the training materials and facilities of your college? _____

7. What are the major problems of your college encounter on purchasing? _____

8. Do you have budget allocated for maintaining, inventorying controlling management implemented in the college? _____

9. What measures your college take in regard to surplus and obsolete materials? _____

10. What strategies you suggest to be undertaken in order to reduce training materials wastage and maximize effective utilization of available materials and equipment? _____

Appendix VI

Observation checklist of training materials and facilities of the TVET College

Part I

1. Name of the TVET college _____

2. Year of establishment _____

3. Geographic setting --- Addis Ababa

Sub city _____ Kebele _____

Key: 5. Excellent 4. More than satisfactory 3. Satisfactory

2. Barely satisfactory 1. Not satisfactory

Part II: Availability of training materials and facilities in the college

No	Items regarding availability of training materials and facilities	5	4	3	2	1	Remark
1	Raw materials						
2	Teaching aids and manuals						
3	Availability of machines, equipments and hand tools						
4	Measuring devices and professional journals						
5	Class room size $2m^2$/trainee						
6	Enough floor space for practical work						
7	Safety precaution, ex. Fire extinguisher						
8	Blackboard and whiteboard						
9	Access to water supply						
10	Access to electric supply						
11	Standard library						
12	Display corner						
13	Attractiveness of the college (sport field, tree, fence etc						
14	College building and standard workshop						
15	Access to future expansion						
16	Availability of trainee service (cafeteria, toilet etc						
17	Health facility (clinic)						
18	Internet access						
19	Space for tool room						
20	Standard store-room						

Part III. Appropriateness, quality, relevance and usage of training materials and facilities

No	Appropriateness of training materials and facilities	5	4	3	2	1	Remark
1	Serviceability of training materials and facility						
2	Durability of training materials and facility						
3	Relevance of training materials and facility						
4	Simplicity of using training materials and facility						
5	Efficiency of training materials						
6	Effective utilization of training materials and facility						

Part IV: Organization of training materials and facilities

No	Organization of training materials and facilities	5	4	3	2	1	Remark
1	Maintenance of training materials						
2	Inventory of materials						
3	Purchasing of training materials						
4	Need assessment of training materials						
5	Standard workshop layout						

Part V: Management activities

No	Management activities	5	4	3	2	1	Remark
1	Planning of training materials						
2	Controlling mechanism						
3	Auditing						
4	Distribution						
5	Utilization						

Test

Group Statistics

	Respondents' cat	N	Mean	Std. Deviation	Std. Error Mean
Availability of raw materials	Instructors	94	2.61	.870	.090
	Trainees	93	2.49	.974	.101
Teaching aids and manuals	Instructors	94	2.71	.887	.092
	Trainees	93	3.23	1.475	.153
Availability of machines	Instructors	94	2.93	.919	.095
	Trainees	93	2.94	1.101	.114
Classroom size $2m^2$/trainee	Instructors	94	3.16	1.071	.110
	Trainees	93	4.02	1.233	.128
Safety precaution, example fire extinguisher	Instructors	94	3.09	1.325	.137
	Trainees	93	2.56	1.448	.150

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means				
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference
Availability of raw materials	Equal variances assumed	1.537	.217	.828	185	.409	.112	.135
	Equal variances not assumed			.827	182.259	.409	.112	.135
Teaching aids and manuals	Equal variances assumed	43.765	.000	-2.885	185	.004	-.513	.178
	Equal variances not assumed			-2.878	150.569	.005	-.513	.178
Availability of machines	Equal variances assumed	7.139	.008	-.067	185	.947	-.010	.148
	Equal variances not assumed			-.067	178.546	.947	-.010	.148
Classroom size m2/trainee	Equal variances assumed	.293	.589	-5.105	185	.000	-.862	.169
	Equal variances not assumed			-5.101	180.865	.000	-.862	.169
Safety precaution, example fire extinguisher	Equal variances assumed	2.960	.087	2.592	185	.010	.526	.203
	Equal variances not assumed			2.590	183.198	.010	.526	.203

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means							
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference		
									Lower	Upper	Lower
Does the dean provide awareness-raising instruction regarding the utilization of training materials/equipment?	Equal variances assumed	.021	.884	.613	185	.541	.090	.147	-.200	.381	
	Equal variances not assumed			.613	184.971	.541	.090	.147	-.200	.381	
What measures the college take in regard to surplus or obsolete materials?	Equal variances assumed	4.007	.047	2.706	185	.007	.545	.201	.148	.943	
	Equal variances not assumed			2.704	180.837	.007	.545	.202	.147	.943	
Are the properties in store-room properly recorded, handled, identified, classified and coded?	Equal variances assumed	.032	.859	-4.625	185	.000	-.569	.123	-.811	-.326	
	Equal variances not assumed			-4.625	184.978	.000	-.569	.123	-.811	-.326	
How effective is the college in maintaining and utilizing the broken and unused training materials	Equal variances assumed	20.384	.000	-1.189	185	.236	-.155	.131	-.413	.102	
	Equal variances not assumed			-1.187	162.263	.237	-.155	.131	-.414	.103	

Crosstabs

To what extent is your college equipped with training materials and equipment * Respondents' cat

Crosstab

			Respondents' cat		Total
			Instructors	Trainees	
To what extent is your college equipped with training materials and equipment	Very high	Count	1	2	3
		Expected Count	1.5	1.5	3.0
		Residual	-.5	.5	
	High	Count	11	8	19
		Expected Count	9.6	9.4	19.0
		Residual	1.4	-1.4	
	Average	Count	51	46	97
		Expected Count	48.8	48.2	97.0
		Residual	2.2	-2.2	
	Low	Count	22	31	53
		Expected Count	26.6	26.4	53.0
		Residual	-4.6	4.6	
	Very low	Count	9	6	15
		Expected Count	7.5	7.5	15.0
		Residual	1.5	-1.5	
Total		Count	94	93	187
		Expected Count	94.0	93.0	187.0

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	3.188(a)	4	.527
Likelihood Ratio	3.208	4	.524
Linear-by-Linear Association	.147	1	.702
N of Valid Cases	187		

a 2 cells (20.0%) have expected count less than 5. The minimum expected count is 1.49.

To what extent do you think the available training materials in the system are effectively used? * Respondents' cat

Crosstab

			Respondents' cat		Total
			Instructors	Trainees	
To what extent do you think the available training materials in the system are effectively used?	Very high	Count	3	4	7
		Expected Count	3.5	3.5	7.0
		Residual	-.5	.5	
	High	Count	19	12	31
		Expected Count	15.6	15.4	31.0
		Residual	3.4	-3.4	
	Moderate	Count	49	55	104
		Expected Count	52.3	51.7	104.0
		Residual	-3.3	3.3	
	Low	Count	20	16	36
		Expected Count	18.1	17.9	36.0
		Residual	1.9	-1.9	
	Very low	Count	3	6	9
		Expected Count	4.5	4.5	9.0
		Residual	-1.5	1.5	
Total		Count	94	93	187
		Expected Count	94.0	93.0	187.0

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	3.509(a)	4	.477
Likelihood Ratio	3.543	4	.471
Linear-by-Linear Association	.378	1	.538
N of Valid Cases	187		

a 4 cells (40.0%) have expected count less than 5. The minimum expected count is 3.48.

Who is responsible for training materials planning? * Respondents' cat

Crosstab

			Respondents' cat		Total
			Instructors	Trainees	
Who is responsible for training materials planning?	Trainers	Count	15	8	23
		Expected Count	11.6	11.4	23.0
		Residual	3.4	-3.4	
	Deans	Count	9	14	23
		Expected Count	11.6	11.4	23.0
		Residual	-2.6	2.6	
	Department heads	Count	8	15	23
		Expected Count	11.6	11.4	23.0
		Residual	-3.6	3.6	
	Section heads	Count	14	3	17
		Expected Count	8.5	8.5	17.0
		Residual	5.5	-5.5	
	All	Count	48	53	101
		Expected Count	50.8	50.2	101.0
		Residual	-2.8	2.8	
Total		Count	94	93	187
		Expected Count	94.0	93.0	187.0

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	12.708(a)	4	.013
Likelihood Ratio	13.390	4	.010
Linear-by-Linear Association	.185	1	.667
N of Valid Cases	187		

a 0 cells (.0%) have expected count less than 5. The minimum expected count is 8.45.

To what extent is the dean of the college efficient in coordinating the staff in planning the training materials and facilities * Respondents' cat

Crosstab

			Respondents' cat		Total
			Instructors	Trainees	Instructors
To what extent is the dean of the college efficient in coordinating the staff in planning the training materials and facilities	Very high	Count	9	5	14
		Expected Count	7.0	7.0	14.0
		Residual	2.0	-2.0	
	High	Count	14	14	28
		Expected Count	14.1	13.9	28.0
		Residual	-.1	.1	
	Moderate	Count	38	30	68
		Expected Count	34.2	33.8	68.0
		Residual	3.8	-3.8	
	Low	Count	25	18	43
		Expected Count	21.6	21.4	43.0
		Residual	3.4	-3.4	
	Very low	Count	8	26	34
		Expected Count	17.1	16.9	34.0
		Residual	-9.1	9.1	
Total		Count	94	93	187
		Expected Count	94.0	93.0	187.0

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	12.748(a)	4	.013
Likelihood Ratio	13.275	4	.010
Linear-by-Linear Association	5.605	1	.018
N of Valid Cases	187		

a 0 cells (.0%) have expected count less than 5. The minimum expected count is 6.96.

Group Statistics

	Respondents' cat	N	Mean	Std. Deviation	Std. Error Mean
Service ability of training materials and facilities	Instructors	94	3.05	.932	.096
	Trainees	93	2.51	.974	.101
Durability of training materials and facilities	Instructors	94	3.01	.989	.102
	Trainees	93	2.60	1.044	.108
Relevance of training materials and facilities	Instructors	94	3.13	.930	.096
	Trainees	93	2.71	1.203	.125
Simplicity of using training materials	Instructors	94	3.41	.977	.101
	Trainees	93	2.71	1.290	.134
Efficiency of training materials	Instructors	94	3.11	1.000	.103
	Trainees	93	2.66	1.229	.127
Effective utilization of training materials and facilities	Instructors	94	3.02	.994	.103
	Trainees	93	2.58	1.254	.130

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means				
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference
Service ability of training materials and facilities	Equal variances assumed	2.364	.126	3.931	185	.000	.548	.139
	Equal variances not assumed			3.930	184.444	.000	.548	.139
Durability of training materials and facilities	Equal variances assumed	2.259	.135	2.747	185	.007	.408	.149
	Equal variances not assumed			2.746	184.229	.007	.408	.149
Relevance of training materials and facilities	Equal variances assumed	13.602	.000	2.659	185	.009	.418	.157
	Equal variances not assumed			2.656	173.105	.009	.418	.157
Simplicity of using training materials	Equal variances assumed	7.965	.005	4.216	185	.000	.705	.167
	Equal variances not assumed			4.210	171.437	.000	.705	.168
Efficiency of training materials	Equal variances assumed	6.525	.011	2.751	185	.007	.450	.164
	Equal variances not assumed			2.748	176.878	.007	.450	.164
Effective utilization of training materials and facilities	Equal variances assumed	9.372	.003	2.664	185	.008	.441	.165
	Equal variances not assumed			2.661	175.060	.009	.441	.166

T-Test

Group Statistics

	Respondents' cat	N	Mean	Std. Deviation	Std. Error Mean
Does the dean provide awareness-raising instruction regarding the utilization of training materials/equipment?	Instructors	94	2.60	1.019	.105
	Trainees	93	2.51	.996	.103
What measures the college take in regard to surplus or obsolete materials?	Instructors	94	3.30	1.277	.132
	Trainees	93	2.75	1.472	.153
Are the properties in store-room properly recorded, handled, identified, classified and coded?	Instructors	94	1.88	.841	.087
	Trainees	93	2.45	.841	.087
How effective is the college in maintaining and utilizing the broken and unused training materials	Instructors	94	2.45	.713	.074
	Trainees	93	2.60	1.044	.108

Appendix VIII

Rate of Return of the questionnaire

	Name of TVET colleges	Trainers			Trainees		
		Expected	Collected		Expected	Collected	
		No	No	%	No	No	%
1	Misrak	30	26	86.6	24	23	95.8
2	Entoto	35	34	97.1	34	34	100
3	Tegbare-ed	34	34	100	39	36	92.3
	Total	99	94	-	97	93	-