

**ADDIS ABABA UNIVERSITY**  
**SCHOOL OF GRADUATE STUDIES**  
**DEPARTMENT OF CURRICULUM AND TEACHERS**  
**PROFESSIONAL DEVELOPMENT STUDIES**  
**(MANAGEMENT OF VOCATIONA EDUCATION UNIT)**

**THE IMPLEMENTATION OF COMPETENCY BASED TRAINING PROGRAM IN**  
**SELECTED TECHNICAL AND VOCATIONAL EDUCATION TRAINING**  
**COLLEGES IN ADDIS ABABA CITY ADIMINSTRATION**

**A thesis submitted to the school of graduate studies of Addis Ababa**  
**University, in partial fulfilment of the requirement for the degree of**  
**Masters of Arts in Management of Vocational Education**

By:  
BantalemDemelash

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## ACRONYMS

CBT	Competency based training
COC:	Center of Competency
COMEDAF	Conference of Ministers of Education of the African Union
ESDP	Education Sector Development Program
ILO	International Labor Organizations
MOE	Ministry of Education
MSEs	Micro and small enterprise
NOS	National Occupational Standards
NGO	Non-Governmental Organization
NTQF	National TVET Qualification Framework
NTVET:	National Technical and Vocational Education and Training
OBT:	Outcome-Based Training
OS	Occupational Standard
TESDA	Technical Education Skill Development Authority
TVET	Technical and Vocational Education and Training

## **Abstract**

The purpose of this study was to investigate the challenges of the implementation of Competency-Based Training (CBT) in some selected Addis Ababa City Administration TVET colleges: Entoto and Mesrak TVET colleges in the fields of Textile and Garment, Automotive, Hotel and tourism, Electrical Electronics and Drafting and Surveying. In this study, the basic questions were formulated and Descriptive survey method was employed to assess the current condition and overall performance of Competency-Based Training (CBT). The sample population included 14 Academic staff members (Dean, TVET chief expert and supervisor of the industries) 58 trainers and 188 trainees. The data collecting instruments included questionnaires which consist of close-ended questions and open-ended, semi structured interview questions, document analysis and observation. The data was analyzed using Descriptive statistical method. The statistical tools used include; frequency, percentage and mean value. The study revealed that the understanding, readiness and commitment of trainers, trainees and Academic staffs as well as the concerned bodies of the industries were low in implementing the program. Workshop material, tools and equipment were inadequate in these colleges. The integration of school based and work place learning is at low level. In addition to this, the assessments of the performance of students were not based on the required occupational standard and unit of competency, especially in work place learning. Moreover, there was lack of cooperative training on difficult unit of competences with in occupational standards. Based on the major findings recommendations were made.

## CHAPTER ONE

### 1. Background of the study

Technical and Vocational Education and Training (TVET) plays vital role in preparing the current and future labor forces that could enhance economic and social development of a country. It becomes imperative that the development and expansion of Technical and Vocational Education as continuing education, both within and outside the formal education system, with either public or private funding, and within the framework of lifelong learning, should be a prioritized objective of all educational strategies (UNESCO, ILO.2010)

Bateman et al. (2012) stated that TVET plays important roles for instance, in providing the skill sets required by enterprises and across national economies; supporting pathways into employment for young people; strengthening mobility between occupations for experienced workers; and supporting the development of new skills and assisting workers to be prepared to change or progress in their occupations/careers.

Competence-based training is emphasized in TVET programs .This approach in TVET seen as particularly effective in closing the gap between TVET provision and employment requirements. However it is vital in vocational educational practice in many countries, various TVET colleges/institution are attracted by this approach. Making people competent has a more positive, and also a more practically relevant, TVET teachers also feel that, because of its practical relevance, competence-based education can motivate students to finish their school much more than traditional education can. Moreover, through their direct contacts with work organizations, TVET institutes notice immediately how modern companies' occupations and jobs are changing and encouraging schools to deliver graduates with broad skills in addition to specific knowledge (Biemans et al, 2005).

Prahalad and Hamel, (1990) noted that Competence systems would address the promise of rendering learning processes and outcomes that are measurable and manageable throughout the life span. On a related note, the concept of competence can easily be linked to the performance approach of learning and education made popular by ideas on core competencies of organizations.

According to (MOE 2008), Technical and Vocational Education and Training (TVET) is the three educational sub-sectors (general education, TVET and higher education) that the

government of Ethiopia has given high attention. Its primary goal is to create competent and self-reliant citizens to contribute to the economic and social development of the country. This is assumed to improve the livelihoods of all Ethiopians by reducing poverty. The overall goal of the national TVET strategy is to create a competent, motivated, adaptable and innovative workforce in Ethiopia. This contributes to poverty reduction and social and economic development through facilitating demand driven, high quality technical and vocational education and training, relevant to all sectors of the economy, at all levels and to all people in need of skills development .

However, TVET has demonstrated significant expansion in the Ethiopian Education sector over the last decade. The reform made in 2008 envisaged that it would transform TVET delivery from input-oriented to an outcome based one (MoE, 2010). The results obtained after reform the development of frame works for TVET and the forthcoming TVET Leaders and Trainers Qualifications; the completion of 250 occupational standards and 211 assessment tools; the provision of training of trainers; the start of co-operative and in company training; the creation of a “clear system for technology capabilities’ accumulation and transfer”; and “the identification, development and transfer of 180 demanded technologies to users on the basis of value chain analysis.

The TVET System will continue to serve as a potential instrument for technology transfer, through the development of occupational standards, accreditation of competencies, occupational assessment and accreditation, establishment and the strengthening of the curriculum development system. TVET institutions will serve as the centers of technology accumulation for MSEs. Rigorous and regular monitoring and evaluation will be carried out amongst TVET institutions; both government and private monitoring will enable them to ensure the minimum levels of competency (MoFED, 2010), Despite these achievements and the government’s commitment and efforts, several challenges await the sub-sector.

Training providers may face many problems on their road to create competent trainees. This may be because of their limited understandings on the outcomes and predefined standards’ on what trainees can do. Nevertheless, this can be accomplished by using actual training equipment (Machines), Materials, real work place and competent trainers that contribute to accomplish their actual job requirements (Bezawork,2010). Therefore, it is rational to study the challenges of the implementation of Competency Based Training program (CBT) in selected TVET colleges in Addis Ababa City Administration.

## **1.1. Statement of the problem**

Technical and Vocational Education and Training (TVET) systems play a vital role in the socio-economic development of a nation. Due to their vibrant nature, they are continuously subject to the forces which drive changes in the schools, industry and society. The opportunities and challenges of TVET are unique due to the needs of the changing economy and local community. The concern today is not so much about the value and importance of TVET but how to ensure its relevance, responsiveness and value in an increasingly global economy (Law, 2007).

The government of Ethiopia considers TVET as one of the core development strategies through which to achieve social and economic properties for its citizens. Currently, it is carrying out an intensive expansion and restructuring works in the sector in order to boost both quality and enrolment in TVET sector. The Competency Based Training (CBT) ensures that the TVET system in Ethiopia is better placed to serve the skill needs of employers and the labour market (MOE, 2008b). But implementing the proposed Competency Based Training (CBT) faces some problems.

For instance, according to Caroline (2013), CBT is an expensive form of education and training because of its emphasis on equipment, well equipped laboratories and other teaching and learning materials for training. All these come with huge cost implications especially when the number of trainees increases making it a challenge due to budgetary constraints of TVET Institutions.

There is also the issue mentioned that there is a challenge of facilitation. Since CBT is learner-centred, small class sizes are preferred to enable effective use of CBT facilitation techniques. The ideal CBT class size is between 16-20 learners (Norton, 1987). Currently in most of the institutions the class size is more than the average students. There is no doubt that for effective program delivery, more facilitators with relevant training to deliver CBT will be required. This will have huge financial implications for the institutions.

Beside to this, workplace experience of learning in the CBT program is important of the training, because it affords the trainee the chance to put into practice in a real work situation what he/she were taught in order to display his/her competences. There is a gap in the implementation of the Occupational standards (that define competencies and which describe good work practice) and National Occupational Standards (NOS), in company

training /industries. In addition to this the numbers of limited industries are also challenges of CBT in working place learning.

In the contrary, competency based training system is the current issue for the nation of Ethiopia to be implemented practically. From the student researcher personal experience as a teacher, it is observed that there are some gaps in the implementation of CBT program. Thus, to contribute his part in fulfilling these gaps, this study research is done.

More specifically, the study is intended to answer the following basic questions

The major question How competency based training program is implemented in connection with the occupational standards/ TVET curriculum?

1. What are the understanding and readiness of trainees, trainers, principals, TVET counsellor and coordinators to implement CBT program?
2. Are the training materials, learning resource and infrastructures' are against to the facility standards?
3. How does the training process link the school based learning and the work place learning based on the occupational standards?
4. What are the methods employed to assess occupational standards and unit of competency standards?

## **1.2. Objectives of the Study**

### ***1.2.1. General Objective***

The general objective of this study is to investigate the challenges that affect the implementation of Competency Based Training program in selected TVET Colleges in Addis Ababa City Administration.

### ***1.2.2. Specific Objectives***

The following are the specific objectives of the stud

- To assess the state of availability, competence and readiness of industries, enterprises, institutions to provide CBT program effectively integrated with TVET college
- To assess the CBT program allow each trainees have the opportunity to develop and evaluated on the competencies achieved.

- To assess the financial, materials and human factors that adversely affects the TVET colleges in the implementation of CBT.
- To assess the integration of school based and work based learning concerning the occupational standards and unit of competency.
- To assess the methods which employed to evaluate the performance of students based on the occupational standard and unit of competency

### **1.3. Significance of the Study**

With properly implemented and well organized standards or benchmarks, CBT program has the potential to produce intellectual capital that is competent in terms of what the industry or employer needs. According to Harris et al, (1995) CBT program of properly implemented provide lifelong learning, holistic and integrated pedagogy, whole person development, multi skilling, flexibility and to trainees having better skills and better ability to integrate into the world class work force. In light of this fact, it is essential to conduct a study to identify challenges affecting the implementation CBT program in TVET as to improve the quality of TVET in general and the practice of CBT program in particular.

Accordingly, the study has the following contributions:

- By revealing CBT program implementation in TVET, the study may help government, TVET authorities and other stakeholders to give a comprehensive information how the program works and how they can enhance their aptitude concerned TVET for appropriate action.
- The study may contribute to TVET Colleges some good experience mode of delivery particularly relating to the conditions of its implementation.
- The study may also provide a solution to the TVET college problem under this study.
- The study provides useful information which can serve as a spring board for further in depth study

#### **1.4. Delimitation of the Study**

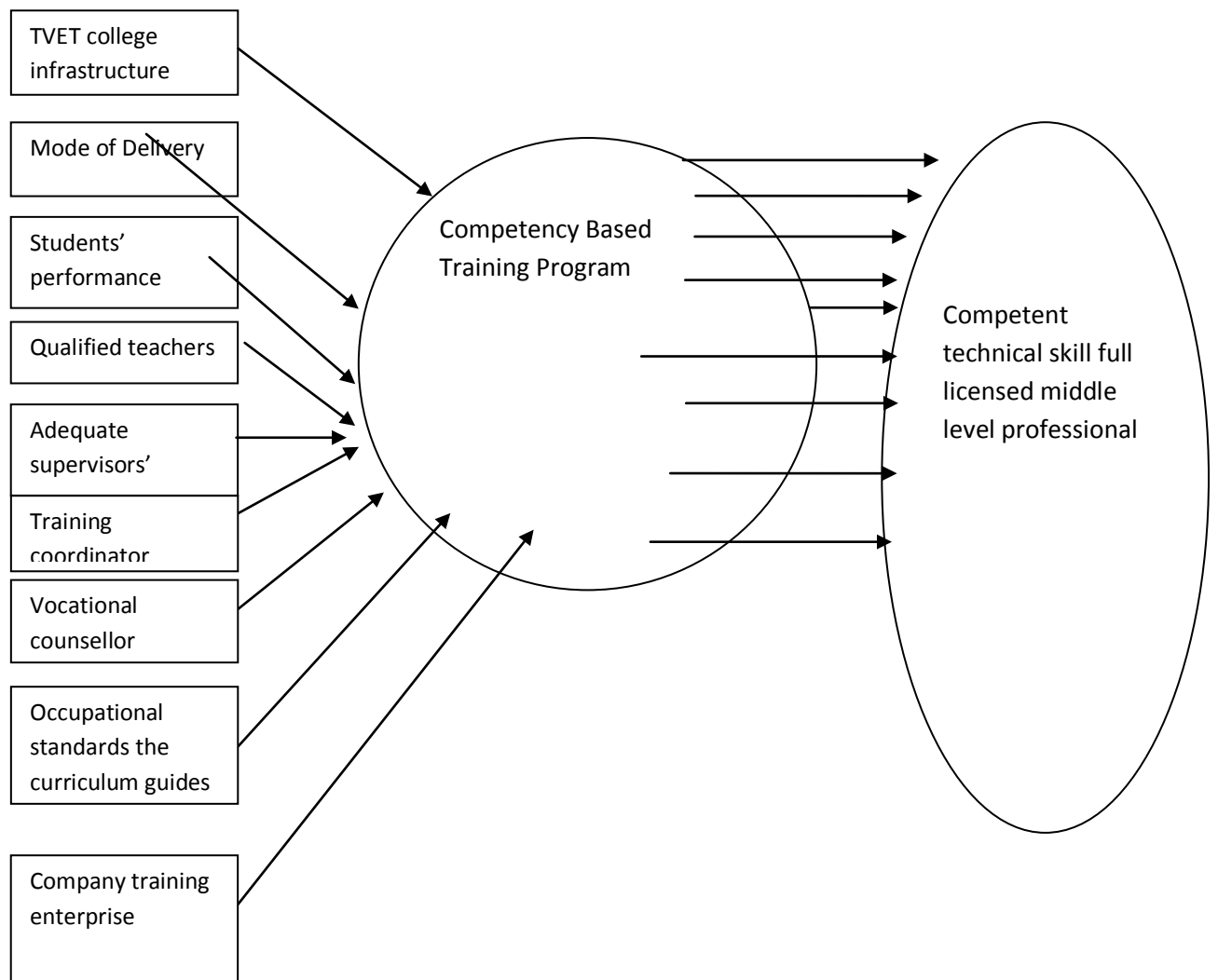
This study is delimited to some selected public TVET college of Addis Ababa City Administration because the CBT program is implemented more of in the public TVET College. In Addis Ababa, there are six government TVET colleges currently offering training in different fields of studies at college levels. This study was delimited to only two public TVET colleges in Addis Ababa City Administration .The sample colleges are Meserak polytechnic college and Entoto polytechnic college. The reasons for selecting these two TVET colleges were due to their better experiences in offering training and educational programs at college level. Furthermore, presently in Ethiopia, a number of TVET program at different levels are offered, which lead to different certificate levels which ranges from level I to level V. From this middle level technical and vocational education training programs, level III and level IV trainees were selected. Because these levels of trainees have stayed longer in the college and they can provide the necessary information better than trainees at the lower levels. In addition to this, the study was focused on five fields which are automotive technology, electrical electronics, textile and garments serving and drafting and hotel and tourism. Because these fields of trainings have to use different teaching equipment, different instructional materials and tools in their workshops and in company training or cooperative training.

#### **1.5. Limitation of the Study**

In undertaking this study, the researcher encountered the following limitations:-

- ❖ Lack of adequate literature in the area of CBT system.
- ❖ Financial and time constraints were also the major limitations of the study.
- ❖ Few of the respondents were not cooperative enough in contributing there honest opinion

## 1.6. Theoretical Frame Work



**Figure 1:** Sources the researcher

The concept of Technical and Vocational Education and Training (TVET) plays vital role in preparing the current and future labour forces that could enhance economic and social development of a country. Hence, many innovations and reforms are being introduced in the TVET system in Ethiopia. The major emphasis is towards implementing a competency based training system or market-oriented TVET system, which responds to the demand for competitive skills of the modern sector as well as to the needs of the youth and underprivileged groups. This study considered various variables which have an impact on the implementation of CBT in TVET colleges. These are, TVET college infrastructure, Mode of Delivery, Students performance, Qualified teachers , Adequate supervisors , Training coordinator , Vocational counsellor, Occupational standards the curriculum guides and Company training enterprise which are closely associated with the implementation of competency based training program to create skill full, competent, technical and licensed middle level professionals, as illustrated in the above figure 1.

### **1.7. Organization of the Study**

The research thesis is organized into five chapters. The first chapter is introduction that consists of background of the research, statement of the problem, objective of the study, significance, delimitation, and definition of terms used in the study. The second chapter focused on literature review; the third chapter is dealing with the research methodology. The fourth chapter covers the presentation, analysis of the data and interpretation of the findings and the last chapter is about summary, conclusions and recommendations of the study.

### **1.8. Operational Definition of Terms**

**Competence:** is the position and application of knowledge, skill and attitude to person activities to the standard expected in the work place (Garavan and McGuire, 2000)

**Competence-based assessment (CBA):** is gathering and judging of evidence in order to decide whether a person has achieved a standard (level of competency). (Wolf, 1995,p.1)

**Competence standard:** is made up of units of competence, which are themselves made up of elements of competence, together with performance criteria, arrange of variables, and an evidence guide. An industry-determined specification of performance which sets out the skills, knowledge and attitudes required to operate effectively in employment. (Gonczi/Hager/Oliver, 1990, p.35)

**Competency-Based Training:** is a way of approaching (vocational) training that places primary emphasis on what a person can do as a result of the training (the outcome), and as such represents a shift away from an emphasis on the process involved in the training (the inputs). It is concerned with training to industry specific standards rather than an individual's achievement relative to others in the group.(karim,2011,p 23/24)

**Competency- Based Education:** is a concept of technical and vocational education and training, whose content is heavily oriented towards the requirements of the learner's future workplace that allows a formal education and training program to be delivered in a modular and individualized learning related competence (Clement, 2003)

**Quality assurance:** is systems and procedures designed and implemented by an organization to ensure that its products and services are of a consistent standard and are being continuously improved. (MoE, 2008)

**Outcome Based Training:** is an approach to education in which decisions about the curriculum are driven by the end of the courses or the exit learning outcomes that the students should display. (Elmore et.el,in Benered and Brogan(1994)

**Occupational standard:** a standard defined by experts of the world of work indicating the competences that a person must possess to be able to perform up to the expected level and be productive in the world of work. MoE (2010)

**Technical and Vocational Education and Training (TVET):** a training program provided by training institution with a view to acquiring or upgrading his/her technical and vocational skills (FGN, March 1, 2004, No. 391,2004:2553).

## CHAPTER TWO

### 2. Review of Related Literature

#### 2.1. The concept of TVET

TVET is concerned with the acquisition of knowledge and skills for the world of work. Throughout the course of history, various terms have been used to describe elements of the field that are now conceived as comprising TVET. These include: competency based training (CBT) ,Apprenticeship Training, Vocational Education, Technical Education, Technical Vocational Education (TVE), Occupational Education (OE), Vocational Education and Training (VET), Professional and Vocational Education (PVE), Career and Technical Education (CTE), Workforce Education (WE), Workplace Education (WE), etc. Several of these terms are commonly used in specific geographic areas.

The second International congress on Technical and Vocational held in Seoul in 1999 decided that the best and most comprehensive term to use is Technical and Vocational Educational Education and Training (TVET) (Brgen and Hiebert, 2002: 16). This is reflected in the name of the UNESCO-UNEVOC International Center in Bonn, Germany, which was established in 2000 as a direct result of recommendations rising from the Seoul congress in 1999. Hence, TVET is an education, training and learning activity leading to the acquisition of knowledge, understanding and skills which are relevant for employment of self-employment. TVET serves here as an overarching term to describe all kinds of formal, non-formal and informal training and learning provided by or in all different institutions, providers and learning Locations.

Originally, the direct preparation for work was the main goal of TVET, and this remains prominent in many developing nations. However, with the technological revolutions and innovations in science and technology, during the 20<sup>th</sup> century, new domains of knowledge and new discipline have become important at all levels of education and training. Further, the upward differentiation of TVET from first to second level and then to the third level of education has been an important development of the 20<sup>th</sup> century and sets the stage for the 21st century. The current focus is increasingly upon preparing knowledge workers to meet the challenges posed during the transition from the industrial age to the information age, with the concomitant post-industrial human resource requirements and the changing world of work. Technical and vocational education serves different purpose (smith, 1999: 262).

(Mc Neil (1996: 332) indicated that, the current rationale for the indispensability of TVET rests on arguments like, it serves a national interest by (a) conserving and developing resources; (b) promoting a more productive agriculture, (c) preventing waste of human labor, and (d) helping to meet an increasing demand for trained workers. It helps in realizing equality by helping the youth, refugees and the hard-to-employ to find a place in economy through training in general or specific occupational skills and related work habits. And finally, it helps in facilitating the students' understanding about various issues related to society, technology, work, environment, and their own future career development

## **2.2. Concept of Curriculum Implementation**

Jon Wiles and Joseph Bondi (2007) note that over 90 % of new curricula fail to be implemented in their view educators lack the managerial skills and knowledge necessary to deliver curriculum. Leslie Bishop (1976) stated many years ago that implementation requires restructuring and replacement; it requires adjusting personal habits, ways of behaving program emphases, learning space, and existing curricula and schedules. The readiness with which teachers and other accept a new curriculum partly depend on the quality of initial planning and the precession with which the steps of curriculum development have been carried out.

Sarason (1990) notes two kinds of basic understanding essential to implementation. The first is an understanding of organizational change and how information and ideas fit in to a real world context. The second is an understanding of the relationship between curricula and the social institutional context in to which they are to be introduced.

On the other hands the social institutional context is influenced by whether one perceives the world of education as technical or non-technical. Those with a technical view believe that implementations can be planned down to specifics those with a non-technical view hold that implementation is fluid and emergent. But many people also view implementation as a combination of technical and non-technical aspects.

Successful curriculum implementation results from careful planning, which focuses on three factors, people, programs and processes. To implement a curriculum change educators must get people to change. Some, of their habits and possible views many school districts have failed to implement their programs because they ignores the people factor and spent time and money modifying only the program or process. On the other hand, focusing on the new programs provides people with new ways to meet the objectives of the school's programs.

Organizational processes, too, are important. Re organizing departments can move people in the direction necessary for successful implementation.

### **2.2.1. Closing the implementation gap**

Implementing new curriculum into practice is never easy. Typically, there is a gap between intended and implemented curriculum. Closing this implementation gap requires that two essential aspects of curriculum change are given appropriate importance and appreciation. These two aspects are *using change knowledge in curriculum implementation* and *selecting appropriate implementation methods to help teachers and schools to change* as expected. The history of curriculum reform and attempts to introduce new approaches in teaching are replete with good ideas that fail to get implemented or that are successful in one context but not in another one. A missing ingredient in most cases is insufficient appreciation and use of what is called *change knowledge*. Change knowledge in education means understanding insight about the process of curriculum change and the key drivers that make for successful curriculum implementation into practice. The presence of change knowledge does not guarantee implementation success, but its absence ensures failure (Sahlberg, 2006). There are several ways of conceptualizing what drives successful curriculum change. The following seven principles are often used in the process of implementing a new curriculum (see Fullan, 2005; Hargreaves and Fink, 2005).

1. *Making sense of why a new curriculum is necessary*. This typically refers to showing how curriculum change is connected to the overall political economy and social and economic development. The moral purpose of change is the key factor in building a commitment to raising the quality and closing the gap in student achievement.

2. *Understanding the change process*. Implementing a new curriculum requires changes on many fronts. Understanding the complexity and internal dynamics of change process is conditional for the sustainable implementation of curriculum reforms. It is often difficult and frustrating to do because it requires leaders to stop and think about the aspects of reform that they would not rather do otherwise.

3. *Capacity-building*. Capacity is one of the key conditions for successful implementation of curriculum reforms. However, it is often the missing link even when there is a consensus of the need for change. Capacity-building involves policies, strategies, resources and other actions that are aiming at increasing the collective power of people.

4. *Developing cultures of learning.* Successful curriculum change involves learning during implementation. A powerful factor of change is learning from one's peers, especially those who are further along in implementing new curriculum. The principles of learning from each other include (a) developing professional learning communities at the local, school and community level, and (b) learning from other schools and teachers.

5. *Developing cultures of evaluation.* Cultures of evaluation must be embedded in the cultures of learning. Contemporary change strategies involve strategies that are labelled 'Assessment for Learning' that incorporates (a) collecting data from student learning,

(b) Disaggregating data for more specific understanding, (c) preparing action plans based on the data mentioned above, and (d) communicating students' performance to parents.

6. *Developing leadership for change.* Good leadership is one of the key conditions for Successful curriculum change. Leadership, to be productive and sustainable must spread throughout the school. Successful managing is not about one's own success but helping others to be successful. Education leaders, more than any others, need to understand these ingredients of successful change.

7. *Utilizing the ideas that already exist in schools.* Schools are full of good ideas about how to improve teaching and help pupils learn. Many curriculum reforms ignore this reality. Recognition of the hidden capacities of schools and teachers, the identification of these passive potentials and then facilitating the exchange of good ideas and practices that work have been the missing link in some of the education systems that are today performing well (Aho, Pitkänen ,Sahlberg, 2006).

### **2.2.2. The key players in curriculum implementation**

People involved in curriculum implementation can include students, teachers, administrators, consultants, state employee, university professors, parents, political officials interested in education depending on their skills; such people may play different roles at different times in the change process (Fullan 1994)

### **2.2.3 .Facilitating and limiting factors for implementation**

Although there are a lot of individual and often contradictory research results in different implementation localities, there is some convergence of research findings about key factors, affecting implementation processes (Fullan, 1994, p.2840).

## A. Characteristics of the innovation itself

It is not surprising that the higher a perceived need for the solutions the innovation proposes is, the better the chances for implementation are. Usually, a general feeling of need or the expression of need by some political body or by academia is not enough, rather this need must be perceived by the constituencies directly involved in the implementation. It follows that careful examination of whether or not the changes address priority needs lays important groundwork before and during the production phase of a curriculum; and that frequent communication and open discussion of the curriculum's merit for coping with felt need must maintain and develop an awareness of this topic during the implementation process (Fullan 1994, p.2840).

However, there are three complications with straightforwardly addressing needs (Fullan 1994, p.2840): First, a need for the solutions offered by a curriculum must not just be 'one among many others'. Among the "overloaded improvement agendas" of today's schools there is often competition between various innovation proposals which lead not to no critical mass of improvement. "Developing a vision" could be used as an instrument to prioritize among a set of desirables. Secondly and especially in the case of complex changes, both precise needs and solutions offered by the curriculum are not clear from the beginning. Thirdly, need interacts with other factors.

Another crucial factor is the innovation's *clarity about goals and means*. Curriculum research unearthed examples of educational innovations where practitioners were not clear about what they were expected to do differently what change meant for them in practice. At least in initial implementation phases teachers relish concreteness and tangibility. They expect that teaching strategies are clearly described and material is well-thought of. The proposal should be clear about ways of doing, but not too linear and restricting in the sense that just one way of doing is advocated and no alternatives are possible. This need for clarity has been interpreted as expression of a feeling of role ambiguity in a situation of uncertainty produced by the new challenges of the innovation on one side and by the partly lacking competencies on the teachers' part. It was also found that a more flexible approach may be appropriate in later phases of implementation when teachers have strengthened their feeling of competence with respect to the innovation (Lütgert and Stephan, 1983).

A third factor is *complexity* which reflects the amount of new skills, altered beliefs und different materials etc. required by an innovation. "... Simple changes may be easier to carry

out, but they may not make much of a difference. Complex changes promise to accomplish more, but they also demand more effort, and failure takes a greater toll. The answer seems to be to break complex changes into components and implement them in a divisible and/or incremental manner." (Fullan 1994, p.2841; Thomas 1994, p.1852).

A fourth factor lies in the (perceived) *quality and practicality* of the innovation proposal. Again, it is not (only) the quality a panel of curriculum developers would attribute to the curriculum proposal, but the quality as it is perceived by the relevant actors supposed to implement the curriculum. One might distinguish several aspects of quality in this respect. Firstly (but not always foremost), there is *conceptual quality* flowing from plausibility and coherence of the conceptual elements employed. There is *formal or communicative quality* coming from the language, graphical and social design of the presentation of the innovation before and during the implementation process. And there is *practical or logistic quality* stemming from the availability of materials and other resources, such as, for example, time for development work or the consultation of external experts. As most innovation address 'urgent and ambitious needs', it happens that "decisions are frequently made without the follow-up or preparation time necessary to generate adequate materials" (Fullan 1994, p.2841).

It must be stressed that "quality" with respect to implementation points to the perceptions of the different stakeholders: Thus, an essential feature of quality is *contextual suitability*: It has been frequently demonstrated that imported programs rarely work equally well in all contexts (e.g. Huberman and Miles, 1984). Innovation proposals must fit to available funds, specific student characteristics, the communities' language patterns, teachers' abilities, parents' expectations, cultural values and much more (Thomas 1994, p.1853).

"Quality" also means that a curriculum can pass the test of *the 'practicality ethic of teachers'* (Doyle and Ponder, 1977-1978): Teachers appreciate these ideas, proposals or teaching methods which have proven to "work" in practice or which promise by their appearance of practicality to do so. Those proposals are considered as 'practical' which "address salient needs, that fit well with the teacher's situation, that are focused and that include concrete how-to-do-possibilities. 'Practical' does not necessarily mean 'easy' but it does mean the presence of next steps" (Fullan 1994, p.2841).

## ***B. Local characteristics***

A second set of factors focuses on local decision processes and local characteristics of the implementation: First, there is the *regional administration* (e.g. *school district*): The attitude of regional administrators, inspectors and the like towards the local implementation process is essential if change is meant to be serious. Without support of regional administrators change may happen with individual teachers or single schools but it will most likely remain isolated in some innovative pockets without affecting the broader system. Just 'moral support' - in the sense of being given good words without any concrete implementation follow-through - will not be enough. "Teachers and others know enough not to take change seriously unless local administrators demonstrate *through actions* that they should." (Fullan, 1994, p. 2842)

There have been too many educational innovations without *adequate follow-through*. In some regions there is a *history of negative experiences* with previous implementation attempts which in itself is an unfavourable condition for change since system members may have built up a cynic or apathetic attitude towards change. Local administrators must show specific forms of *active support* including enduring (not just initial) support for school management and teachers (e.g. through offers of process coaching, expert consultation, demonstrations or excursions to alternative practices, in-service training etc.), through realistic time plans and resourcing, and through an adequate information system about the innovation and its implementation (Fullan 1983, p.492). And they must demonstrate *active knowledge and understanding* both of the attempted change and the processes of putting it into reality in order to provide conducive conditions for the implementation.

Another factors are *community characteristics* (as well as characteristics of the 'school board' where it has some influence on the management of the school). Even where communities are "not directly involved in implementation ... they can become activated against certain innovations" (Fullan 1994, p.2842) if the planning and implementation process does not attend to the political undercurrents in the school's surrounding community. On the other hand, the inclusion of non-professional, such as parents and the public, – at least in settings where community members are used to influence educational practice - can uncover objections and helps to accommodate to specific circumstances (see Thomas 1994, p.1855). Then, parents may be "one of the most powerful leverages to better implementation" (Fullan 1994, p.2842) if they are actively included in the implementation strategy through an adequate information system or realistic offers to participate in key phases of development and implementation.

Finally, *contextual stability* makes a difference. It is much easier to successfully advance an implementation within a stable environment. "Marked social change usually disrupts reform projects that are already on the way" (Thomas 1994, p.1853).

### **C. Organizational characteristics**

#### **C1. Actors**

Another crucial factor for implementation is the characteristics of the organization (e.g. the school) which is the venue for implementation, and, in particular, the role of the *management*, i.e. in the case of a school: the principal and the school management team. There is broad research evidence that principals, headpersons and school management teams cannot change schools just on their own, but that they are the single most influential group of persons to make change processes fail. "The principal is the most likely person to be in a position to shape the organizational conditions necessary for success such as the development of shared goals, collaborative work structures and climates, and procedures for monitoring results." (Fullan 1994, p.2842) Change processes are in need of the management's active support and participation – not necessarily as curriculum experts, but as initiators, as 'change leaders' (Fullan1983p.492).

Thus, the school leaders' *level of commitment* is a crucial feature: "The degree to which people are committed to a reform is reflected in the time and energy they devote to its implementation and in the extent to which they remain faithful to their role in the face of opposition and operational difficulties." (Thomas 1994, p.1852), Commitment is important at all levels of an educational hierarchy but particularly among the personnel at the top, so e.g. among school principals or top administrators of districts or ministers of education. They are in the position to give resources and impose both rewards and penalties, and they provide well-observed images for how seriously the innovation is to be taken.

Firestone and Corbett (1988) have identified four *leadership functions* which facilitate educational change: *Obtaining resources* (e.g. for equipment, supplies, training, clerical support and free time) *Shielding the project from outside interference* (e.g. disruption of teachers' working time, resolving problems; protecting from attacks by opponents and from many competing demands) *Encouraging staff members* and furnishing recognition from peers, experts and supervisors *Adapting standard operating procedures* to the needs of the project at an early stage in the reform process and, as Huberman and Miles (1984) suggested, stabilise and codify the new practices in school house operating rules, revised curricula,

training programs, evaluation procedures and routine funding (Thomas 1994, p. 1854). In other words, the earlier – even in the 'project phase' of implementation – the curriculum is partially built into the routine operations of the school, the better.

In reality, headpersons frequently do not play an active role in implementation – not always because they do not like the innovation itself – but sometimes because they find it difficult to transform their traditional, more passive role (at least in the school systems of German speaking countries) into a new and more active role as 'facilitator of change'. Thus, some implementation programs provide specific offers for principals and school management, e.g. specific workshops or optional coaching. These are to help them transform and maintain a conducive role among implementation processes which frequently do not pass without some conflict and pressure on the leader's role (Altrichter and Posch, 1999).

*Teachers*, their commitment and attitudes, competences, and interaction patterns make up another crucial group of factors for implementation. Both individual and collegial aspects are important. Teachers are a constant factor in the education system and thus have a key role for classroom innovation (Havelock, 1970). If they are not motivated to engage with an innovation, then nothing will happen. In the German discussion, Havelock's position has been criticised in binding curriculum development to the "weakest element of the chain" (see Haller 1983, 527). However, this involves, in my view, overstating Havelock's argument in the way that teachers have to accept *fully* the innovation at any time of the implementation process. Certainly, this cannot be expected. Certainly, every real innovation will involve some aspects which are new for teachers and which will encounter some sceptical reaction. Such discrepancies between claims of the innovation and acceptance of teachers may be important starting points for further development. However, the relationship between "irritation" (provided through the challenging elements of the curriculum and its implementation) and "acceptance" must be in such a balance that participants are prepared to embark and continue with the implementation process.

Curriculum research shows that it is possible to deal constructively with such discrepancies in implementation processes, but it also shows that it is easier in situations of face-to-face-contact and that, again, it is much more difficult to generalise results of those face-to-face negotiations to a broader group of users (Haller, 1983, p.527).

*Participation in decision-making:* Traditionally educational innovation has tended to follow a top-down pattern. However, it was frequently shown that including local personnel fosters

more effective implementation. "Early participation increases teachers' willingness to continue new practices after the initial incentives has been withdrawn. Engaging teachers in their planning process also helps to equip them with skills required by the innovation and enhances the likelihood that the reform will be adapted to local circumstances." (Thomas 1994, p.1855) Thus, one of the mottoes of organisational development has been taken up also by implementation projects, i.e. to make persons affected by change to persons involved in change (e.g. Reinmann-Rothmeier and Mandl, 1999, p.68).

Certainly, the *individual teacher's* competencies and attitudes towards change itself and towards the specific innovation intended are important factors contributing to the quality and direction of the change process. Some *schools*, however, have more change-oriented teachers on their staff than others. This is not only due to recruitment but also – as school quality research has shown – an effect of specific school cultures (e.g. Purkey and Smith 1991; Eder and Altrichter 2005).

Change involves the development of new practices and beliefs, i.e. it involves *learning*. Where these new practices and beliefs are not trivial we must assume that these processes *extend over time* and that they are *fraught with feelings* of being de-skilled, not knowing what to do, lacking instruments, competencies, and resources, etc. Since it is an innovation the learning process will refer to practices already established, i.e. it will involve *re-learning*. Thus, the process of taking up an innovation may also be described in terms of a learning process of individuals, groups, and organizations, and actually implementation projects only can profit from what Mandl (in this volume) has explained as a constructivist view of learning.

As alluded to above, teachers seem to have *changing interests during different phases of implementation*. Initially, concrete proposal and non-paternalistic support seem to be important in order to counteract the feelings of being de-skilled and of time pressure which are connected with the innovation challenge. Later, a more comprehensive view on the substantive and methodical implications of the innovation proposal becomes possible. No wonder if the implementations process is seen as a "dynamic process of appropriating curricular concepts" (Lütgert and Stephan 1983, p.508).

Individual teachers' learning is socially situated in a network of co-teachers, managers, administrators, and other relevant participants. It will be easier if it is situated in a *network which is both sympathetic and competent* with respect to the changes aspired since it will be

possible to collegially fill in individual's gaps of motivation and qualification. "New meanings, behaviours, skills, and beliefs depend significantly on whether teachers are working as isolated individuals or are exchanging ideas, support, and positive feelings about their work. The quality of working relationships among teachers is strongly related to implementation. Collegiality, open communication, trust, support, and help, learning on the job, getting results, and job satisfaction and morale are closely interrelated." (Fullan 1994, 2843) Thus, some researchers equal successful implementation with succeeding in building up a '*community of learners*' with respect to the innovation, Such a 'community' invests in different occasions and instruments of collaborating, sharing, and synthesizing individual knowledge and research in order to make full use of the expertise which is 'distributed' within the relevant community and outside of it (Reinmann-Rothmeier and Mandl 1999, pp. 306 and 310; Altrichter 2005).

Lave and Wenger (1991) have insisted that learning - by virtue of its social situatedness - also involves developing a specific *identity* in and *vis a vis* the respective 'community'. Similarly, to implement an innovation means for the practitioners involved in a long-term commitment to practice the innovation and to give it some centrality in their image of the profession and the organization. Thus, implementation will be connected with some pressure to *transform professional identity*, and it will only be considered successful if this transformation is not just an individual one but is accompanied by other individuals' (i.e. members of the organization to be transformed or of the 'community of learning') likewise transformation, or to put it in other words: some by some transformation of (what is to count as) the respective community of practice.

Certainly, innovations necessitate also other non-professional participants' learning. In the case of curricular innovations it is obvious that *students' relevant competencies and attitudes* are an important factor in implementation. If the innovative proposal is unclear, against their perceived needs, over- or under-demanding etc. it may lose students' active participation (see the example in Doyle and Ponder, 1977-1978). Also janitors, clerical staff and *other participants* may be affected by the innovation, and in a position to actively support or block implementation.

## ***C2. Organizational characteristics***

*Compatibility of the goals of the innovation and its implementation* with the strategic long-term goals of the organization into which the innovation is to be implemented is crucial, too (Sonntag *et al*, 1998, p.341; Euler and Sloane, 1998, p.325). The same holds true for situational characteristics: *Organizational structures, instruments and processes* are important factors for implementation. An innovation usually aims at directly transforming some organizational structures and processes (e.g. new material for collaborative learning) and in the process of doing so, also indirectly puts pressure on other organizational structures and processes (e.g. teachers' work organization, time tabling, decision making procedures). The *system of incentives and the career patterns* valid in the organization to be changed must be re-thought in order to be in consonance with the innovation (Sonntag *et al*, 1998, p.343). For curricular innovations the structure of the *existing curriculum and assessment procedures* are particularly relevant: Attempting to change teaching and learning styles while syllabi and assessments remain unaltered will most likely run into difficulties (Reinmann-Rothmeier and Mandl 1999, p.294).

Thus, implementation must work towards a fit between the *culture of the organization and both the culture of the innovation proposal and its implementation process*. Intensive collaboration, collegial reflection and sharing of individual knowledge are features which to some extent, run counter to the *culture of traditional schools* (at least in German speaking countries) which may e.g. characterized by a frame of mind called "autonomy-parity-pattern" by Lortie (1975). This pattern is characterized by two rules which are considered crucial for smooth interaction between teachers: First, no grown-up person should interfere in a teacher's classroom ("autonomy"). Secondly, all teachers are to be treated equally, regardless of their actual competencies, energy invested, and qualities displayed. It has been shown that new challenges, such as school development or quality evaluation, tend to interfere with these rules since they usually opt for more coordination and sharpening profiles of the organization (which interferes with autonomy). And they are in need of delegation and differential taking up of development roles, and of evaluation which is necessary for rationally steering more autonomous organizations (which interferes with "parity"; Altrichter, 2000). In a recent study in vocational upper secondary schools we found that the relative weight of teachers who discard "autonomy" and "parity" as guiding principles for collegial life in schools is decisive for successful engagement in school development (Eder and Altrichter 2002).

The *culture of learning* valid in an organisation is particularly important because it does not only refer – in the case of curriculum implementation - to central content aspects of the innovation, but also to conditions of learning during the process of implementation. Using Weinert's definition, we see the organizational culture of learning as the totality of forms of learning and styles of teaching which are typical for an organisation at a given time including the anthropological, psychological, societal and educational orientation on which they are based (Weinert, 1997, p.12). It is considered conducive for implementation if learning is awarded a high profile in the goals, vision, resources, and instruments of an organization (Sonntag *et al*, 1998, pp. 344ff) if there are forums for learning and information exchange in the regular operation of the organisation (e.g. the cases in Willke 1995, pp.58ff ; Mingers, 1998) if there are conducive images of learning continuously represented in the organisation by management and other participants; i.e. that the competent learner is valued, not just the full expert who is right in any case (Reinmann-Rothmeier and Mandl 1999, p.307). It follows that innovation also involves or necessitates an innovation of school as an organization, i.e. a process of system change or *organizational learning* (Euler and Sloane 1998, p.320).

Organizational learning is – as has been frequently described (Altrichter *et al*, 1998) – not a straightforward process because it deals with transforming structures which have been and are continuously partially self-produced and reinforced by the actors in the organization to be changed (Giddens 1988). Consequently, we will expect some 'resistance' in the course of the implementation process and adverse reaction to innovation does not always aim at the characteristics of the innovation itself but sometimes at the pressure to transform one's way of working and relating to colleagues in schools.

#### ***D. Government and other agencies***

Priorities for education which arise from political forces, lobbying of interest groups and public concerns channel resources and gratification, "put pressure on local districts (sometimes to the point of mandates) and also provide various incentives for changing in the desired direction." (Fullan, 1994, p.2843) Its instruments are legislation, regional guidelines, incentives, sponsored projects etc. Fullan (*ibid.*) is critical of government agencies which all too often "have been preoccupied with policy and program adoption, and have vastly underestimated the problems and processes of implementation. The policy maker and the local practitioner inhabit different worlds, each side ignorant of the subjective world of the other."

In fact, the *quality of relationships between central and local actors* is a key issue of implementation. However, all too often it has come "in the form of episodic events rather than processes: for example, submission of requests for money, intermittent progress reports on what is being done, external evaluations, all amounting to paper work, rather than people work." (Fullan, 1994, p.2843)

Through *resource support and training* (Lütgert and Stephan, 1983, p.510) external agencies can promote curriculum implementation. "... through resource support, standardization, and closer monitoring, state departments of education have sometimes directly influenced implementation of specific objectives, especially when local conditions were favorable. Mostly, however, lack of role clarity, ambiguity about expectations, absence of regular interpersonal communication, ambivalence between authority and support roles of external agencies, and solutions that do not work have combined to frustrate implementation." (Fullan, 1994, p.2843).

### **2.3. The concept of Competence and Competency Based Education**

#### ***2.3.1. Historical Background of CBET***

Competence-based education and training (CBET) can be traced back to the education of primary and vocational teachers in the USA in the 1970s. Poor learning in vocational education programs was the reason for applying new principles to teacher education. Teaching should be based on the role requirements and standards of the behaviour of effective teachers. The National Centre for Research in Vocational Education at Ohio State University started research on "performance-based vocational teacher education" in 1969. Over a period of ten years 100 performance-based modules for vocational education were developed, which were supplemented by modules for adult and special education. In 1977, some 23 states had implemented performance-based vocational teacher education and in the late 1980s the concept shaped many programs of vocational education and training (TVET).

Despite skepticism from the very beginning, CBET gradually entered the context of VET in the UK, Australia and New Zealand. Several other countries are currently copying the concept of CBET by re-inventing or reforming their VET systems. Many hopes lie on CBET respectively because it is an "outcome-based approach" and is seen as a "major driver, incentive and motivator of learning" where the role of individuals is rated higher than that of teachers, government or other stakeholders (Reuling, 2002, p. 15). Therefore, CBET has both a didactical dimension (competences and qualifications) and a political and social dimension

(pathways and opportunities for learning). Consequently, CBET itself may be described as *"training which is performance- and standards based and related to realistic workplace practices. It is focused on what learners can do rather than on the courses they have done"* This definition (ANTA, 1998, p.10; Misko, 1999, p.3) places the focus of CBET on outcomes measured against industry standards rather than on courses based on institutional arrangements (classes in schools, e.g., or apprenticeships) where individual achievements are normally valued against others .Outcome orientation places emphasis on new forms of assessment. "Recognition" or "Accreditation of Prior Learning" (RPL/APL), mainly through work experience, is another essential tool to ensure the relevance and transferability of skills and knowledge as well as to lead people back into learning.

Competence-based curricula consist of work place oriented and performance-based modules or units of competence that can be accumulated to a vocational qualification. Delivery of CBET can be designed individually by learners, teachers and trainers, which allow a self-paced mode independent from courses. However, a modular and self-paced approach to curricula and delivery is not necessary, although it is very compatible with CBET.

### **2.3.2. Competency**

Competency can be defined as the capacity to choose and utilize an integrated combination of knowledge, skills and attitudes with the goal to do a task. Knowledge, skills and attitudes serve to realize the standard to perform job-related tasks that typify profession. Several authors offer competence definitions. For example, Garavan and McGuire (2000) define competence as an action, behavior and outcome a person should be able to demonstrate. This definition constitutes what a person can do. Competency might also be viewed from the possession of certain attributes such as knowledge, skills, and attitudes.

Kricher et al (1997) view competency as the ability to choose and use the attributes suggesting that competence is the capability to choose a set of available behavior and to execute suitable skills to meet certain goals. The comprehensive definition covering all aforementioned is offered by Mulder (2001):"Competence is the ability of a person or an organization to reach specific achievements. Personal competence comprise: integrated performance oriented capabilities, which consist of clusters of knowledge structures and also cognitive, interactive, affective an where necessary psychomotor capabilities, and attitudes and values, which are conditional for carrying out tasks, solving problems and more generally, effectively functioning a certain profession, organization, position or role".

Kouwenhoven (2003) suggests that the execution of tasks involves a cognitive process comprising the utilization of knowledge, skills and attitudes; personal characteristics of professional, and the meta-cognition. The knowledge, skills, attitudes and personal characteristics should be present in realizing the task since these elements reflect the deliberate actions.

Kouwenhoven (2003) also holds that the knowledge, skills and attitudes should be used in an integrated manner although they might be used in varying degrees, depending on the task to be performed. Aschrott (1994) adds that the mental processing of performing tasks requires cognitive monitoring which is called meta-cognition.

Competence can be broken down into two types, the core competency and the generic competency (Kouwenhoven, 2003). The former relates to the set of appropriate competencies required to realize a key professional job at a satisfactory level. The latter is associated with 'life skills' including self-concept, values and personality traits.

#### **2.4. Concept of Competency Based Training (CBT) in TVET**

Competency based training (CBT) places emphasis on what a person can do in the workplace as a result of completing a programme of training. The emphasis in CBT is on "performing" rather than just "knowing". A competency-based training system includes more than just training courses related to job performance. It identifies the level of competence required for different levels of performance within a given work function. Progress with in a CBT programme is not based on time. An important characteristic of CBT is that it is focused not only on the actual jobs that are required in the workplace, but also the ability to transfer and apply skills, knowledge and attitudes to new situations and environments (Karim, 2011, pp.23-24).

CBET is an approach to TVET, in which skills, knowledge and attitudes are specified in order to define, steer and help to achieve competence standards, mostly within a kind of national qualifications framework. Competence (e.g. in the British context) or competency (e.g. in the Australian context) can be understood as "the specification of knowledge and skill and the application of that knowledge and skill to the standard of performance expected in the workplace". A way of approaching (vocational) training that places primary emphasis on what a person can do as a result of training (the out-come), and as such represents a shift away from an emphasis on the process involved in training (the inputs). It is concerned with

training to industry specific standards rather than an individual's achievement relative to others in the group".

#### ***2.4.1. Characteristics of Competency-Based Training Programs***

According to (Karim, 2011, p.25; w.r.t. Foyster, 1990; Delker, 1990; and Norton, 1987) key characteristics are summarized below:

- ❖ Competencies are carefully selected.
- ❖ Supporting theory is integrated with skill practice. Essential knowledge is learned to support the performance of skills.
- ❖ Content of training are specifically related to the skills and abilities required to do a job.
- ❖ Detailed training materials are keyed to the competencies to be achieved and are designed to support the acquisition of knowledge and skills.
- ❖ Methods of instruction involve mastery learning, the premise that all participants can master the required knowledge or skill, provided sufficient time and appropriate training methods are used.
- ❖ Participants' knowledge and skills are assessed as they enter the programme and those with satisfactory knowledge and skills may bypass training or competencies.

#### ***2.4.2. Competence Standards***

Competence standards are the core feature of a competence-based curriculum, since they are an important instrument for identifying training needs, specifying career paths and recruiting personnel (Gonczi/Hager/Oliver, 1990, p. 35). Competence standards can be categorized into three types, namely industry standards, cross-industry standards and enterprise standards (Harris et al., 1995, p. 105). Industry standards refer to units of competence that are required in a range of workplaces within a certain industry. Cross-industry standards share common units of competence and are integrated in to industry standards. Enterprise standards are developed and implemented at the level of an individual company and are, usually, a specification of industry standards as additional units are added, replaced or modified. Although, the flexible development of standards at the enterprise level is important to address individual needs, national consistency and acceptance of competences across industries or even nation-wide must be preserved. Therefore, authorized institutions approve these enterprise standards before they are endorsed.

### ***2.4.3. Competence based Assessment***

With the shift from processes to outcomes assessment has to be rethought and re-defined as it is indispensable for the verification and valorization of competences. Wolf (1995, p. 1) defines assessment in CBET programs as follows:

"Competence-based assessment is a form of assessment that is derived from the specification of a set of outcomes; that so clearly states both the outcomes, general and specific, that assessors, students and interested third parties can all make reasonably objective judgments with respect to student achievement or non-achievement of these outcomes; and that certifies student progress on the basis of demonstrated achievement of these outcomes. Assessments are not tied to time served in formal educational settings."

It is the outcomes and not the learning processes or courses which are assessed. Outcomes have to be clearly identifiable as such in order to assure transparent and reliable assessment procedures. Outcomes are the "real side" of a competence standard and according to the CBET philosophy it is essential to conduct assessment strictly in accordance with these standards irrespective of the learning process or the circumstances involved. However, it also means an individual decides which element of competence should be assessed and the assessor then only measures the demonstrated performance in line with the relevant criteria. Every single criterion must be fully met before the assessor can judge the performance as competent. Otherwise the assessment must be repeated. Graded assessment is not encountered in competence-based assessment.(Wolf, 1995, pp.21).stated that Competence-based assessment is conducted on demand and under conditions which should come as close as possible to real workplaces. Competence based training assessment does not require a peer group to measure an individual's achievement against others, i.e. norm referenced assessment, as it is criterion referenced ,i.e. achievements are measured against the respective competence standard.

According to (Beever, 1993) factors undermining effective implementation CBT an important assumption underpinning competency-based training is that competency standards can be established through analysis of work carried out in business and industry and that there will be agreement about these standards. In fact it has been an exceptionally difficult process to establish national competency standards in many industries.

Further, the fact that so many teachers in Cornford's studies (1996, 1997) perceived a lack of agreement in standards, with these teachers all having extensive industrial experience, leads to the conclusion that there is a major problem with the concept of agreed, industry-based competency standards for the following reasons. In reality, in industry, there are three distinct levels of standards in most fields of specialization: the first is essentially the cheap and barely sufficient, the second involves a middle level of excellence, and the third the deluxe or very superior job involving high level craftsmanship. It depends upon the circumstances and the business organisation as to which standards will be preferred at any one time.

The introduction of enterprise bargaining has further eroded any assumption of uniform standards. Now it has become possible for an enterprise agreement to establish quite unique sets of competency standards for workers within the individual enterprise, irrespective of Industrial Training Advisory Board or national standards (Ewer & Ablett, 1996).

However, The variety of industrial standards stands as a problem quite distinct from the fact the newer version of competency-based training advocated by Hager and Gonczi (1993) includes holistic assessment, and cognitive and affective as well as performance elements. Such departures from the older behavioural standards result in statements of competency standards of greater generality, and thus concomitant problems with interpretation and establishing reliability and validity in assessment (Ewer & Ablett, 1996). Further, it is possible that the newer conceptualization of competency-based training advanced by Hager and Gonczi (1993) was seriously and grievously flawed from the outset. More recently Hager (1995) has admitted that competency standards are concerned with summative assessment that is measuring the effectiveness of overall training. Summative assessment and competency-based training standards thus represent the end product and do not reflect the complex processes of learning which lead to this desirable end state of training (Cornford, 1993, 1999), that is, issues of formative assessment (Hager, 1995).

Formative assessment, which involves all assessment of learning prior to summative assessment, provides vital feedback necessary for improvement in the long term learning process. It is also apparent that the competency-based training model advanced by Hager and Gonczi lacks a substantial basis provided by research and theory from skill learning, and cognition and development of expertise areas (Cornford, 1993; Stevenson, 1994, 1995). Hence, because of lack of a substantive base for formative assessment, it cannot provide any substantial guidance for those who need to develop curricula over a number of stages of development of learning in whatever specialist field. Nor can it provide guidance for teachers

as they assist students with feedback through the development of various skills at varying levels of expertise (Cornford, 1997). The absence of guidance in curriculum development and implementation in the Hager-Gonczi model almost guarantees counterproductive diversity and confusion (Cornford, 1999). In addition, because the newer competency-based training paradigm, which Gonczi and Hager have introduced, lacks clear conceptualization of formative skill stages and learning processes, it cannot effectively supplant the earlier, inappropriate, behavioral competency-based training paradigm (Cornford, 1997).

Smith and Keating (1997) suggested that Problems in implementation are certainly causally related to the findings and the lack of effectiveness of competency-based training. However it would be a mistake to see errors in implementation or faulty combinations of different strategies as largely responsible for the outcomes, with these outcomes being largely rectifiable by introduction of different combinations.

The conceptual confusion that surrounds competency based training among teachers and business and industry personnel, as identified by FitzGerald (1994), Lidbury (1995) and Roux-Salembien et al. (1996) among others, is clearly a major stumbling block. The fact that there appears no general agreement on the nature of competency-based training or the elements which need to be implemented to achieve success would appear to indicate that we are dealing with a broad, general concept that cannot be easily or adequately defined enough to operationalize. In any case, in terms of Foyster's (1997a) propositions of the possible need to maintain quality control if there is ineffective implementation, such a proposal for quality control is almost certainly impossible since there appears no agreement possible on what it is that has to be quality controlled.

## **2.5. Institution Building for Outcome-Based TVET Delivery**

Previously, TVET delivery did not consider the competence requirements of the labor market as it should be in occupational standards; thus, it failed to appropriately address the ever-changing demands of the labor market. Building an Outcome-based TVET delivery system is therefore the centre piece of the TVET reform that strives for enhanced quality and relevance of TVET. An Outcome-based TVET system design will also make it easier to recognize the wide range of non-formal training and informal learning schemes available, opening access to neglected target (MOE, 2008:25).

Training for high quality skills require appropriate equipment, tools, adequate supply of training materials and practice by the learners (Midlotn, 1993:210-215). World Bank on the

other has confirmed that inadequate supply of equipment; very poor basic equipment lack of laboratory and materials will make effective teaching impossible (World Bank, 1993:130-140). Other requirements include relevant text books and training manuals and qualified instructors will experience in enterprises. Well qualified instructors with will experience in enterprises. Well qualified instructors with industry based and well equip workshops in TVET are very important in preparing the training towards self-employment.

The question of institutional facilities are an important issues in TVET programs, often, access to jobs that training provides depends on the nature and quality of training and job performance of graduates depends on the right kinds of skills acquired (Getachew, 2005:27). Meeting the entire costs of functional workshops and providing up to date teaching materials one of the relevant measures to maintain quality of training. Vocational and technical usually have high development and recurrent cost (Midleton, 1993:210-215). The more highly advanced the technology taught, the more expensive the needed equipment and materials will usually be the extremely high cost of facilities makes it difficult to easily secure the latest technology (World Bank, 1993:130-140).

On the other hand, Norton (1999:240) contained that government decisions about TVET are often stated in terms or quantity rather than quality. Simply replacing programs or changing size will have considerable impact on the breadth and depth of services (quality) provision in an environment where there is more focal constituency for the quality of places than quality; it is often troublesome for institutions to enhance the quality of programs.

Taking into account the above discussion in order to provides quality education for TVET trainees that prepares for wage employment as well as job creation. The Ethiopian TVET strategy stipulated detailed standards regarding establishment and training equipment enumerated as, TVET institutions will have suitable. Library and workshops, a class room on average accommodates 25 trainees for each specialization, rooms for strong training und row materials with regard to training materials, the strategy stipulates that there will be sufficient hand tools, machines and different equipment and materials in conformity with the number of trainees in each fields, basic and essential measurement equipment and role materials for training appropriate teaching aid and others, which are essential for training in each institution (MOE, 2008: 49-51).

## **2.6. Vocational Counsellor In TVET institute**

The vocational counsellor's job in at TVET College is to work with training coordinators and enterprise/ companies to implement the cooperative training program. The counsellor needs to be trained for performing this role and assisted during the implementation process of cooperative training program. These stuffs at TVET institutions are instrumental in facilitating apprenticeship and preparing youth for apprenticeship training (MOE,2008). It is also focal point in organizing self- employment support for TVET graduates.

## **2.7. Worksite Mentor Identification and Training**

As one of the requirements of workplace learning, employers are expected to assign a supervisor and/or an in-company trainer for being a coordinator to follow-up and support trainer in real work environment. Large companies might have a supervisor for training and educated trainers for in-company training as well. Small companies might have experienced workers/ employees working as instructors (MOE, 2002:11).

In these companies, the supervisor is responsible for the overall planning, follow-up and evaluation of in-company training. Compared with these trainers for in company training responsible to train and guide the trainees at the workplace. The workplace training is assuming increasingly critical position in the provision of training opportunities. Trends in both developed and developing countries suggest that this shift will become enshrined as a central element in skill formation policies in the near future, as more initiatives seek to achieve the twin goals of making training an attractive undertaking for employers and of ensuring that training is relevant and useful for workers (Harris. 2000:36).

The quality or work- based learning is heavily dependent on who provides the training (Bailey and Merritt, 1993). Work – based learning must be carefully planned and monitored by people who understand both the work setting and what is to be learned if it is going to not only expose students to the workplace and give them an opportunity acquire specific procedural skills but also achieve broader goals (Strern, 1997a). Worksites mentors assist in cognitive, personal and professional development of students. Though sequencing learning opportunities and making connections between what is learned at school and the worksite, worksite mentors students' ability to become independent thinkers and workers ( Evanciew and Rojewski,1999). Worksite mentors must ensure their worksite have educational value (Bailey, et. Al, 2000).

Workplace mentoring has been identified as important aspect of work-based learning. By establishing relationships with caring and competent adults with who can provide emotional support and facilitate skill development, less experienced youth are more likely to bridge the gap between school and work. As in other endeavours, workplace mentoring requires planning, training, monitoring and assessing to ensure that individuals being mentored will achieve successful outcomes (Brow, 2001).

## **2.8. Memorandum of Agreement Between industries, Enterprise and TVET Institutions**

The cooperating partners (industries /enterprise/ TVET institution) in the cooperative training should establish a memorandum of agreement (MoA) to identify the occupations in which they want to cooperate. In principle, the participation will be voluntarily and be promoting program of mutual benefits, incentives and in mutual respect. The memorandum agreement content includes nature and objective of the cooperative training program, occupational area and activity for which cooperative training is to provided, duration in hour (start and end, theory and practice) and performance monitoring and evaluation system. Cooperative training program is a win-win situation because it is a partnership between enterprise/company, the TVET collage and trainees for mutual advantage. Since the interest of industry and TVET collage are complimentary, they call for partnership and increase awareness of their interdependence (peter, 1987:34).

## **2.9. TVET and practice based learning**

### ***2.9.1 Integration of course work and work place learning***

Practice based learning in vocational education and training is one of the important issues to deliver the integration of course work and work place learning. According to Brown,B (2003) practice based learning is the engagement of student learning activates through the collaboration with tertiary institution, industry partner and work place learning includes industry based placement, work based learning programs integrated with the formal curriculum at a certificate level. Workplace learning is multifaceted and is utilized in organizations in a variety of ways and is an essential component for effective employment-based training. Historically when TVET programmes have been delivered the delivery has predominately relied on Lecturer directed instruction, however over recent times there has been an increased focus for trainees to acquire practical vocational skills in the workplace as pre-employment programmes have lacked the necessary practical hands on skills in

preparation for employment in the workplace. With the introduction of TVET courses in various disciplines and levels being offered by tertiary providers as alternatives to apprenticeship training, industry placements and work experience have been introduced into certain courses to provide for a collaborative learning experience during course delivery. Vocational education and training courses are designed to prepare people for the workplace, to extend their skills while at work and provide for positive change so that they are able to work in new or similar occupations.

### **2.9.2. Workplace learning**

(Collin, 2002). Stated that Research into the literature by various authors has brought about an increasing awareness by stakeholders i.e. employers, employees, tertiary educators and trainees that workplace Learning has become an important aspect of 'informal' at the workplace Learning. Previous studies indicate that Learning work is the most common way of Learning. For employees and by far exceeds Learning in formal settings outside the workplace.

Research into how people learn show that most Learning related proficiencies are learned outside the formal classroom, and Greenagel and Lagay (2003) suggest that where the Learning occurs and how it's used is closely associated to how adults learn. Workplace Learning has been identified in the literature as an accepted and effective form of training and differing points of view from several researchers have been acknowledged (Billett 2001, Boud and Garrick 1999, Brown 2003, Collin 2002, Harris, Simons and Bone 2003). There has also been general agreement amongst stakeholders that workplace Learning has developed and improved employee's skills and vocational knowledge through positive workplace training. Various authors have defined workplace Learning in a number of ways and Boud and Garrick (1999, p.2) stated that there cannot be just one definition ... "many perspectives are needed not only because of the diversity of work and the differences which exist even within a single organization but because learning in the workplace so multifaceted". The Australian National Training Authority (ANTA, 2002) defines workplace learning as or training undertaken in the workplace, usually on the job, including on-the-job training under normal operational conditions, and on-site training, which is conducted away from the work process (e.g. learning centre).

Skill New Zealand (2001) defines workplace learning as the formal acquisition of skills and knowledge in the workplace. Two possibilities of learning may occur at the workplace, firstly

the learning may be either ‘employer based’, where the learner is an employee working and learning at their place of work, or secondly it may be ‘work based’, where someone who is not an employee of the company is there for the purpose of work experience or work based learning. The formalization of knowledge and skills in the workplace are obtained through assessment and the achievement of a national qualification.

Workplace learning may be supported by additional education and training on a regular or occasional basis (Skill New Zealand, 2001). Billett (2001) argues that workplace activities are structured by historical, cultural and situational factors and these factors influence the kind and quality of learning that occurs through work. He critiques earlier assumptions regarding workplace learning and in particular determines that by describing workplace learning environments and experiences as ‘informal’ is incorrect. He states that by “describing workplaces as ‘informal’ learning environments is negative, inaccurate and ill-focused and it does little to assist the understanding about workplaces as learning environments” (Billett, 2001, p1-3). In my view for effective practice based learning to occur the learning that occurs in the workplace is an essential component of the formal learning process and has to be fully integrated with the vocational education courses. The experiences gained at the workplace cannot be replicated effectively outside the workplace and adds enormous value to the achievement of a valid qualification.

### ***2.9.3. Co-operative education***

According to MoE(2006), Co-operative education is a process of learning that is used to integrate the content of a course with productive work experiences in a field related to the learners’ academic, personal and career goals. It has been effective in providing closer relationships between tertiary institutions and industry by integrating the curriculum into a meaningful process of learning through productive work experience: - students gain the opportunity to combine their academic knowledge with the practical skills necessary to secure future work prospects. Several examples of work based learning programmes have been identified in the literature, and numerous institutions predominately in the higher education sector have utilized co-operative education programmes extensively as the preferred choice of an integrated learning and practical experience.

Co-operative education programmes are also being delivered in the TVET sector as an alternative option to courses that do not include a work based component. Co-operative education programmes consist of some form of work related experience where students are

required to arrange a work placement with an employer where an agreed period of time is spent at the workplace. A student will normally be required to arrange a learning contract with the academic supervisor together with the work based supervisor prior to spending their time in industry. The work experience component can be completed alongside the academic requirements prior to graduation whether by studying full time or part time. The learning contract will normally be used as part of the assessment requirements.

According to Hodges &Coolbear, (1998), There are variations to the work experience component where students may be required to attend multiple work placements over a set period of time and gain nonspecific experience or there may be a portion of the programme that occurs at the workplace that is carried out as project based course under the supervision of an industry supervisor and an academic supervisor. Industry placements have been used as alternative methods of learning options with tertiary education providers for some time linking education programmes to a real work environment, and generally the two main objectives of industry placements either provide for students to gain hands on work experience, or for students to earn academic credits within an academic programme

#### ***2.9.4. Competency Assessment on work place learning***

According to Roegiers(2004), the majority of the educational systems have agreed to integrate the competency based approach within their curricula to respond to both the economic and social needs. That determines a ternary relationship between a public target or “actor”, knowledge and a skill. Professional competence consists of cognitive, integrative, relational, affective/moral, and habits of the mind dimensions. It is developmental and context-dependent. Competencies are demonstrable elements or components of performance (knowledge, skills, attitudes and their integration) that make up competence.

Grant, et al (1979) states that competence-based assessment is a form of assessment that is derived from a specification of a set of outcomes; that so clearly states both the outcomes-general and specific-that assessors, students and interested third parties can all make reasonably objective judgments with respect to student achievement or non-achievement of these outcomes; and that certifies student progress on the basis of demonstrated achievement of these outcomes.

In addition, Raven, et al (2001) states that the practice of competence-based assessment encapsulates the following features: the emphasis on outcomes; specifically, multiple outcomes, each distinctive and separately considered and the belief that these outcomes can

and should be specified to the point where they are clear and transparent Assessors, assesses, and third parties should be able to understand what is being assessed and what should be achieved. The decoupling of assessment from particular institutions or learning programmes. With this increased emphasis on student learning outcomes, Universities must necessarily turn their attention to the articulation and direct assessment of competencies, and not rely merely on the accrual of hours as a proxy for competence. The passage of time, in and of itself, does not produce professional competence. Instead, competence is achieved by engaged participation in structured educational activities and closely supervised experiences that, in fact, do occur over time. That is, competence is a product of both intentional educational interventions and a sufficient passage of time to allow for development.

Black, & William (1998), state that formative evaluations assess competence and provide on-going corrective, developmentally informed feedback to the individual to foster growth. Summative evaluations measure outcomes at the end-point of a developmental process for purposes of progression and gate keeping. Placement learning should incorporate both formative and summative assessment.

### **Formative Assessment**

The concept of the formative assessment was first introduced by Scriven, M in 1967, then enhanced by Bloom, in 1971. According to Scallon, , formative assessment takes a focal place in any learning process, whose role, is not to certificate, but to provide a scholastic democratisation, which has been introduced since the 1960's, highlighting a concern for assessment as a process of continual verification to guide the teaching and learning demarche.

According to Endrizzi, et al (2008), the objective of reflections is to engage learners and increase their interest to make a progress in addition to accurately measuring them. Besides, it involves a trial in regard to a standard and the challenge is not just exactitude and objectivity, but an invitation to adhere to one's learning and encouragement to share the outcome too. The formative assessment involves a cycle composed of three levels:

1) *Observation*: the role of this stage is to construct a reality of learning, conditions, modalities and their results. According to Perrenoud,(2005), the observation is formative when it is used to guide and improve learning regardless of ranking, certifying or selecting the learner. It is rather to expose the state of knowledge and skills, instead of confining himself to be on a scale and compare it to other learners.

2) *Intervention*: it separates the symptoms to address the sources of the difficulties. It involves analysing metacognitive knowledge that is very mysterious as stated by Perrenoud, Indeed, he believes that assessing competency by only observing the learners reach limits very quickly, especially in a training exercise: say "you can do better" does not help the learner to do it better. To be useful, the observer must identify, isolate mental functions or specific actions and identify their weaknesses.

3) *Regulation*: Allal, (1989) states that the concept of regulation has been developed to describe the mechanisms that provide guidance, control and the adjustment of cognitive activities, emotional and social as well as their relationship with a learner. Endrizzi, et al (2008) states that the regulating of learning process involves all operations of the metacognitive learning and interactions with the environment that influence learning process in the sense of a defined object

### **Summative Assessment**

Summative assessment is a formal process and is used to see if learners have acquired the skills, knowledge and attitudes that the practice learning set out to provide. The goal is to measure the level of success or proficiency that has been obtained at the end of the learning practice. Black, et al (1989), as cited by Brook hart, (2001), explaining summative assessment via analogy, states, "When the cook tastes the soup, that's formative assessment; when the customer tastes the soup, that's summative assessment".

Summative assessment in practice provides students with opportunities to demonstrate their achievement of the enduring learning addressed during the placement period. It is used in combination with data from formative assessment to: describe what students know, can do and value; evaluate student growth relative to the purpose of the activity or programme; evaluate student growth relative to the curriculum expectations and the provincial standards. Summative assessment in practice learning certificates learners which help them build self-confidence. The skills acquired are validated certifying that the learner has achieved the performance required. Summative evaluations are used to determine if students have mastered the specific competencies set.

## **2.10. The Ethiopian TVET Reform into Outcome Based Approach**

At present Ethiopian TVET system is undergoing fundamental change in its teaching-learning approach which enhances the goal of poverty reduction strategy. According to MOE (2008) TVET of the country is re-organized into an outcome based system. This

reform is intended to ensure competences needed in the labour market and it became the final benchmark of teaching, training and learning.

The purpose of this reform is to make TVET serve as important tools for the countries poverty reduction strategy by different international fund providers. As GTZ (2006) noted the TVET system reform of the country is able to develop a coherent and comprehensive TVET system that allows Ethiopia to train the middle level workforce and it boosts the country's economic growth and competitiveness in global markets. Therefore, the Ethiopian TVET Strategy reflects best international practices regarding governance, management, delivery and financing. This reform also ensures fair rates of funding, standard-based quality assurance and transparent accountability mechanisms and used for any kind of training provided by any kind of providers. Likewise, the Ethiopian TVET Qualifications Framework addresses importance of a reform from expanded opportunity point of view.

MOE (2010) describes that an outcome-based TVET system creates ways for the fair recognition of the wide range of formal, non-formal and informal training and learning existing in the country. Thus, building an outcome-based TVET system is the centre piece of the TVET reform. For this reason, the main thrust of the strategy relies on an outcome-based system, dedicated and trusting cooperation among stakeholders. Hence, it opens access to qualifications for previously neglected target groups and increase chances of an occupational career and creates options for further education and training.

In general, the reform is expected to reflect an important improvement regarding poverty reduction. To this end, it ensures achievement of its intended goals and thus, it is appropriate to address the development needs of the Ethiopian economy.

### ***2.10.1. TVET Curriculum Development in Ethiopia***

TVET are important components of the educational system in Ethiopia. According to Woube Kassaye (2013;175) the TVET system in Ethiopia immense problems such as lack of adequate facilities , qualified trainers ,poor governance structure etc....but the government introduce important reforms after the adoption of the national TVET strategy of 2002 and the TVET proclamation of 2004.in the proclamation No.Regulation199/2011 TVETA establishment adopted march 25,2011,the duties of the agency connected with the curriculum development and research focuses on the development standards and occupational standards and legislative framework, qualification frame work and occupational standard and

enhancement of the implementation of outcome based TVET through action research and further studies.

However there are three levels of training program are envisaged in order to achieve the purpose of TVET in Ethiopia the programs are 1) the basic TVET program which provides training for school leavers with the appropriate age from grade 4 to 8. 2) Junior level TVET designed to accommodate primary education completes of grade 8 after the national examination. The duration is 6 months up to 1 year depended on the nature of the area to studies. 3) The medium level TVET program provides training opportunities for students which complete grade 10.

According to MOE (2008) the national TVET Strategy that was adopted in 2008 by the MOE could be taken as a significant effort. It seems that this strategy has laid the foundation for the adoption of the recent proclamation of TVET. In this strategy, very useful points with regard to curriculum development and research are indicated. The framework adopted in this strategy emphasizes an outcome based approach and competencies by considering the modern TVET system in use worldwide. Competences in national occupational standards are determined by individuals who are knowledgeable and experienced in the world of work (MOE, 2008, P.21). The responsibility of establishing occupational standards rests on the Federal TVET agency (p.42). TVET providers are expected to develop their own curricula based on the national occupational standards (p.17). Its mode of delivery follows a modular approach. Furthermore a strategy regarding monitoring and evaluation of TVET was specified.

### ***2.10.2. The Ethiopian TVET Qualifications Framework and Accreditation***

TVET has a direct consequence on fundamental political, economic and social development. Therefore, TVET transformation is dynamic that needs efforts to find suitable concept and approach how to best standardize the TVET trainer's professional development. From this point of view, it is very important that quality of TVET is significantly depends on the qualification and motivation of the teaching staff combined with other standards. Thus, the general agreement worldwide in relation to trainer's development refers to the creation of an internationally benchmarked (MOE 2010). Hence, the principal function of NTQE is to strengthen mutual trust between the different stakeholders. It also entitled to facilitate the transfer, transparency and recognition of qualifications based on training outcomes which are assessed and certified by respective nationally accredited competent bodies.

The NTQF rationalizes all TVET into a single nationally recognized qualification and defines the different occupational qualification levels to be awarded and describes the scope and composition of these qualifications and the degree of responsibility a qualified person can assume in the workplace (MOE, 2010). In this regard, NTQE is responsible to set the overall frame for the outcome-based TVET system of the country. And it describes five qualifications levels with different descriptor. Thus, the Ethiopian TVET Qualifications Framework is based on the following assumptions:

- ❖ All qualifications will be described using one single set of descriptors, which will be subject to discussions with stakeholders, because these descriptors will be used in the education and training system as well as in the world of work.
- ❖ One single set of levels will illustrate all qualifications.
- ❖ All qualifications and sub-qualifications will be described and assessed in terms of learning outcomes, regardless of the venue where or the way in which they were acquired.
- ❖ All qualifications can, in principle, be organized in units for which a certain amount of learning time can be assumed and corresponding credits at a specified unit level can be granted. Furthermore, units can be packaged to become a full occupational qualification and are aligned to the qualifications hierarchy with the help of rules and descriptors.
- ❖ Qualification frameworks and outcome-based standards provide the foundation for a learner-centred training system. This opens up options for individuals and, in doing so, assign them responsibility for organizing their respective education and career path.

The Ethiopian TVET registration and accreditation also depends on the NTQF. For this reason, ministry of education has prepared documents on the process of registration and accreditation. Accreditation of program involves both a status and a process. As a status, it provides public notification that a programs provider meets standards of quality set forth by accrediting agency. As a process, NTQF reflects the fact that in achieving recognition by the accrediting agency, the program is committed to self-study and external review in seeking not only to meet standards but to continuously seek ways in which to enhance the quality of TVET program provided by different providers. Self-awareness can be conducted through simple questionnaire which is filled out by the people in order to assess the system. This

assessment is essential to make the trainees to think about themselves, their interests, their values and aspirations in a systematic and focused way and TVET institutions must be consider all necessary physical facilities like library, workshops, and like others (MoE,2010) TVET institutions must be consider all necessary physical facilities like library, workshops, and like others (MoE, 2010).

### ***2.10.3. Understanding the Ethiopian Occupational Standard***

Learning outcomes for required occupational competences are formulated in terms of knowledge, skills and attitude (KSA). Hence, in order to define competence and learning outcome requirements, it is important to develop a consistent and coherent terminology of competences. According to MoE (2010), occupational standard defines the competences required for effective performance in the workplace and describes the work that is performed and expressed as outcomes. Practically, it focuses on workplace activity rather than training or personal attributes through emphasis on outcomes and on the application of skills and knowledge, not just on specification. This means it is concerned with what the person is able to do and also with the ability to do this in a range of contexts. The document must be understandable to employees, employers, supervisors, workers, competence assessors, learners and trainers.

Similarly, the Ethiopian TVET strategy MoE (2008) defines occupational standard as the competences that a person must possess to be able to perform and be productive in the world of work. It includes the entire range of KSA necessary to perform a specific job. The contents are focus on competences required by the occupational fields to reflect real job rather than prescribed requirements of an occupation. Thus, it keeps pace with changes in technology and job requirements.

Based on particular work function that focuses on what people are expected to perform (duties and tasks), a unit of competence is measurable and achievable in terms of outcomes. This unit of competence is part of occupation and consists of a series of units of competences. It may be accumulated over time to achieve the full qualification. It can also break down into elements of competence, which must be stated very precisely in order to avoid ambiguity. They include performance criteria to indicate the standard to which the outcome described has to be demonstrated. It includes a range of statements describe the contexts and variations over which the element of competence shall apply.

There for, Occupational standards can be checked for compatibility with the participation of the industry and verified to be in conformity with the national vision according to appropriate internationally recognized occupational standards. Then, it shall be approved as the national occupational standard by the federal TVET agency. And federal TVET agency prescribe the procedures to be followed for standard setting and publishing them (MoE, 2008).

The national qualification framework is then, based on predetermined occupational standards. When an occupational standard is defined by the respective industry, it is also assigned to a certain level in the NTQF. Assessment towards the qualification at that level is done according to the learning outcomes, duties and tasks specified in the occupational standards (MOE, 2010).

However, as indicated in the national TVET strategy occupational standards development must be based on the needs of labour market analysis. It serves as an instrument to identify the needs for new occupations as well as indicating the need for revision and adaptation of existing national standards once technological or economic developments bring about changes to the qualification needs. For this reason, the labour market analysis can be conducted through local labour market assessments. This can be carried out by the TVET institutions but, regional labour market could be assessed by regional TVET agencies following the economic corridors of the region. During assessments national economic development strategies should be referred.

Therefore, regional and local TVET need to check if their training provision mainly targets lower level occupations based on this information ( MoE, 2010). In general, the Ethiopian occupational standard (EOS) is developed with the direct participation of the industry related to the occupation and ultimate standard. Thus, accreditation process will be based on it. To this end EOS is a corner stone and plays a very important role for the curriculum development and assessment in the TVET system of the country.

## CHAPTER THREE

### 3. Research Design and Methodology

Method pursued, sampling procedures followed, source of data, size of the sample, data collection tools and data analysis of the research are presented under this chapter.

#### 3.1. Research Method

The main purpose of this study was to assess the challenges that affect the implementation of Competency Based Training (CBT). Therefore, the descriptive survey method was employed. The reason why the student researcher selected the descriptive survey method was that, it helps to describe and interpret the actual events that exist now and existed in the past and that have influences on the present, and also there by it tries to make the necessary recommendations for adjustment (Best and Kahn, 1998). Moreover ,to get the general picture of the issue under investigation Mixed research methods was used,The central premise of employing this design was that jointly using both qualitative and quantitative design approaches provides a better understanding of the research problems than either research approach alone. The method was particularly important for the study since it is intended to make detail description and analysis of the strategies and practices of the implementation of competency based training (CBT) in TVET programs.

#### 3.2. Source of Data

The data were collected from primary as well as secondary sources. In order to get firsthand information, primary data were collected from respondents. These are

- Trainers of the respective government TVET colleges
- Dean of the TVET colleges
- Training coordinator
- TVET counsellor
- Industry/enterprise supervisor
- Trainees of the sampled TVET Colleges and
- Addis Ababa City Administrative TVET Agency.

Furthermore, secondary sources including official policy and strategy documents, guidelines, journals, web pages and other resource document relevant to the study were used to support the data.

### **3.3. Sample Size and Sampling Techniques**

There are six Government TVET Colleges in Addis Ababa City Administration. Out of these training colleges, two of them (33.3%) were selected for the study using purposive sampling the reasons for selecting these two TVET colleges were due to their better experiences in offering training and educational programs at college level. This includes: Entoto TVET College and Meserak TVET College. The sampled colleges had nine departments with 50 occupational areas of training. Among these 5(55.6%) departments with different streams Electrical Electronic, Drafting and Surveying, Textile and Garment, Automotive, Hotel and Hospitality, were being included on the basis of sampling. Purposive sampling techniques were employed to incorporate these occupational areas. Therefore, Identification of relevant sample size was done in accordance with Gay and Airisan (2003) as guide line. The basic rule behind Gay and Airisan guide line is to determine appropriate number of participants as a sample size the guide line contain in general, if the population is large the small percentage needed to get a representative sample, which is helpful to handle the data easily, therefore, the guide line indicates, if the population sample size is around 500 (50%) should be sampled from the total population, and if the population sample size is around 1500(20%) should be sampled. The total population of the study was 769 (see Table 2 and 3) which were between 500 and 1500. Therefore, it is appropriate to take 30% of the total population. The total numbers of trainers which train the selected department were 223 among these 67(30%) were taken as sample population in each stream into stratum. Among these, 67 main and supportive trainers [42 from Enoto TVET College and 25 from Meserak TVET college were considered on the basis of quota sampling to set proportionate to size. The other groups of respondents were trainees of the 2011- 2014 academic year. The total numbers of trainees in the sampled streams were 769. Out of these 231 (30%) were taken as sample population in each stream into stratum. According to Leedey and Ellis (1989), to secure proportional representatives of the sampled institutions, proportional stratified sampling is appropriate. Because the population strata appeared in different proportions (see Table 1-2). To pick up the number of respondents under each stratum, simple random sampling was used.

**Table 1: Description of population of Trainees and Trainers by Field of Training**

No.	Name of TVET Colleges	Field of Training	Number trainees	Sampled trainees	Number trainers	Sampled trainers	Sampled academic staff officials
1	Entoto TVET colleges	Textile and Garment	106	32	140		8
		Surveying and Drafting	91	27			
		Automotive Technology	102	31			
		Electrical Electronics	112	34			
		Hotel Management and Tourism	103	31			
		Total	514	155	140	42	8
2	Meserak TVET college	Textile and Garment	47	14			8
		Surveying and Drafting	112	34			
		Automotive Technology	21	6			
		Electrical Electronics	37	10			
		Hotel Management and Tourism	38	12			
		Total	255	76	83	25	8
Grand Total	2	5	769	231	223	67	16

### **3.4. Data Collection Instruments and Procedures**

#### ***3.4.1. Instruments for Data Collection***

To obtain adequate, valid and reliable information questionnaire and semi structured interview were used. In addition, observation checklists and document analysis were employed. In regard to document analysis, however, different books, journals and web-pages were referred so as to apart from the other documents of the competency Based Training system in the colleges.

Depending on the types of questionnaire items, open-ended and close-ended were used in the questionnaires. The student researcher used the questionnaire to collect information from trainers, trainees, and academic staff. Besides this, semi structured interview was employed to acquire qualitative data on various components of the training program to complement and obtain relevant data which was not handled by the questionnaire. The interviewees included CBT deputy dean, Department heads of the selected training filed of TVET colleges, industries supervisor and OBT core process unit of Addis Ababa city administrative TVET agency.

#### ***3.4.2. Pilot Test***

Furthermore, to increase the validity of the research, data collection tools were piloted at the Selam David Roshie TVET College. Accordingly, necessary changes and modifications were made in line with the findings of the pilot test. Some of the open-ended questions were converted in to close-ended. In short, the finding of the pilot test was expected to assist the researcher to incorporate a lot of items in the observation checklist.

A pilot test was conducted before the distribution of the questionnaire to the sampled population of the study. This is because pilot testing is considered very essential and to evaluate whether the questionnaires were appropriate or not to generate adequate information and to make the necessary modification. Thus, the draft instruments were tried out in small scale study to test and improve the instrument at Selam Davide Roshli TVET College. It was located in Addis Ababa (not included in the sample colleges).

The questionnaires were tested on 20 trainees, 5 trainers and 3 academic staff. The pilot test helped the student researcher to identify ambiguities, misunderstandings and spelling errors. To this end, some modifications were made. The reliability statistics test was performed using Cronbach's alpha Analysis which is appropriate when the questions deal on Likert scale. To interpret the output the rule of George and Mallery (2003) was followed: >0.9 (Excellent), >0.8 (Good), >0.7(Applicable), >0.6(Poor), <0.5(unacceptable).

**Table2: Reliability Statistics**

Respondents	Cronbach's Alpha values	No. of items
Trainees	0.919	57
Trainers	0.814	62
Academic staff	0.814	62

Therefore, the Cronbach's Alpha value of response by trainees, trainers and academic staffs become 0.919, 0.814 and 0.814, respectively, which are all more than 80% and thus reliable.

### **3. 5. Procedure of Data Collection**

The researcher distributed the questionnaires to the respondents after the study objectives is clear and create good empathy so as to get the require information. The gathering of the responses was also conducted by the researcher. In these processes of distribution and collection, the observation checklist and the document analysis were attempted. The interview, however, was conducted with the concerned officials and experts after making proper arrangement and schedule. These tasks were also conducted by the researcher.

### **3.6. Methods of Data Analysis**

The data were analyzed and interpreted both qualitatively and quantitatively. The data analysis process involved content analysis of documents; responses to both close-ended and open-ended questions, interviews and observations. The raw data collected from the field was organized and systematically framed with tables according to the similarities of issues that were raised in the questionnaire. The quantitative data analysis and interpretation were carried out by using statically measurements namely: frequency, percentage, and weighted mean and also the study consists of qualitative research, based on semi structured interview made with respondents to grasp the beliefs, perception, understanding and idea of participants that leads to an honest representation of the data. There for the data obtained through

interview, observation, open ended questions and document review were analyzed qualitatively through descriptive narration for the purpose of triangulation. Finally, based on the data analysis, interpretations were made to certain conclusions. As a final point, on the basis of the conclusions were made, and possible solutions were recommended.

## **CHAPTER FOUR**

### **4. Presentation and Analysis of the Data**

This chapter of the study consists of two parts. The first part deals with the respondents' backgrounds, while the second part deals with presentation, analysis and interpretation of the data collected through questionnaires, interview and observation. Both primary and secondary sources were utilized to analyze the basic research questions raised in chapter one. As stated in chapter three of study, questioners were distributed to 231 for trainees and 67 for trainers. From total questionnaires which distributed to the trainees and trainers, 185(80.08%) and 58(86.56%) respectively have been returned and analyzed. The data obtained through interview with deans, department heads and OBT processor in Addis Ababa TVET agency were analyzed qualitatively along with the quantitative ones. Moreover, relevant information obtained from document study was also incorporated in this chapter. Based on the data gathered through all instruments the following results were found.

#### **4.1. Background Information about the Respondents**

In order to maximize diversity that enables the researcher to obtain ample and reliable information, three categories of respondents were involved in the study which is the key implementers of the competency based training. The first group was trainees. The second category includes teachers/ trainers and the third were college academic staff (Deputy Dean, vocational counselor, Training coordinator, and Department heads), industries supervisor and OBT expert of TVET Agency.

The distribution of respondents of the trainees in relation to their age, sex, year level and different fields of training is indicated in the table below.

**Table 3: Characteristics of the Respondent's (Trainees)**

Name of TVET colleges		Level						Age				Field of training	Frequency	Proportion
		Level- 3			Level- 4			<16	16-25	26-35	>36			
		M	F	T	M	F	T	<16	16-25	26-35	>36	Textile and Garment	37	20
Entoto TVET colleges		25	28	63	22	19	41	-	98	6	-	Surveying and Drafting	51	27.56
Meserak TVET		25	22	47	18	16	34	-	76	5	-	Automotive Technology	32	17.29
												Hotel Management and Tourism	35	18.91
Total	NO	60	50	110	41	35	75	-	174	11	-	Electrical Electronics	31	16.75
	%	54.5	45.4	100	54.66	46.6	100	-	94	5.94	-	Total	185	100

As shown in Table 3, the total number of respondents was 185. About 104 (56.21%) were from Entoto TVET college, 81 (43.78%) of them were from Meserak TVET college and 110 (59.45%) of them were level 3 while 75(40.54%) were level 4. As can be seen from the pattern of the distribution on the table above, from both TVET colleges the numbers of level 4 trainees were less than level 3 trainees. Concerning the gender, from the total respondents 84 (45.40%) of them were females while, 101 (54.59%) of the respondents were males. The data were collected from both male and female respondents as they were randomly selected in proportion to the population.

Regarding field of training, out of the total respondents 37 (20%), 51 (27.56%), 32(17.29%), 35(18.91%), and 31 (16.75%) specialized on Textile & Garment, Surveying and Drafting, Automotive Technology, Hotel management and Tourism and Electrical electronics, respectively. As the above table indicates, five departments with different training fields are offered by both TVET colleges with deferent department

**Table 4: Trainers, Department Heads, Counselor and Program Coordinators by Sex, age**

No.	Respondents	Sex			Age of years			Total
		M	F	T	20-30	31-40	>40	
1	F	44	14	58	34	18	6	58
	%	75.9	24.1	100	58.6	31	30.3	100
2	F	3	1	4	-	1	3	12
	%	66.7	33.3	100	-	25	75	100
Total	No.	47	15	62	34	19	9	62
	%	75.8	24.19	100	54.83	30.61	14.51	100

As shown in Table 4, out of the total respondents, 47(73.6%) were male and 15 (24.19%) were female. In terms of age structure, out of the total respondents 34 (58.6%) were in between 20 and 30 years of age, 19(30.61%) were in between 31 and 40 years of age and 9(14.51%) were above 40 years of age. Therefore, 53 (85.48%) of teachers /trainer, counselor and program coordinator that were below 40 can be categorized under middle age group.

**Table 5: Educational Qualification of TVET Trainers and Academic staffs/ Department Heads, Counselor and Program coordinators**

Respondent	Level of Education						Total	
	MA/MSc and above		BA		Diploma			
	F	%	F	%	F	%	F	%
Trainer/Teachers	2	3.4	38	65.25	18	31	58	100
Academic staffs	4	28.57	10	71.42	-	-	14	100

As can be seen in Table 5, regarding to the qualification of teaching staff 2(3.4%) were masters' degree, 38 (65.25%) first degree and 18(31%) were diploma. Out of the total academic staffs, 4 (28.57%) had masters' degree and 10 (66.7%) had first degree. Hence, based on the data given and school observation done, diploma level trainers need further education to upgrade their level of education.

**Table 6: Fields of Specialization of TVET Trainers and Academic staffs/ Department Heads Counselor and Program Coordinators**

No.	Trainers/Teachers			Academic staffs		
	Fields	F	%	Fields	F	%
1	Textile and Garment	13	22.41	Management of Vocational Education	2	14.28
2	Manufacturing Technology	11	18.96	Guidance and Counselling	2	14.28
3	Drafting and surveying	12	20.68	Electronics Technology	2	14.28
4	Automotive technology	8	13.79	Manufacturing Technology	4	28.57
5	Hotel Management and Tourism	14	24.13	Automotive Technology	2	14.28
6	-	-	-	Hotel Management and Tourism	2	14.28
Total					14	100

As the above Table (6) show 13 (22.41%) of trainers specialized in textile and garment manufacturing, and the remaining, 11 (18.96%), 12 (20.68%), 8(13.79%), 14 (24.13%), were specialized in manufacturing technology, drafting and Surveying, automotive technology and hotel management and tourisms respectively. On the other hand, it can be observed from the same Table that academic staff 2(14.28%) specialized in Management of Vocational education, and 2 (14.28%) specialized in Psychology, 2(14.22%) specialized in electronics 4(28.57) specialized in manufacturing and 2(14.28%) specialized in Hotel management and tourisms. Furthermore, an effort was also made to get the general impression of the work experience of the concerned personnel. Hence, the following feedback was obtained.

**Table 7: Years of Service in Training, Management and Administrative Position**

No	Related position	Years of service								Total	
		Below 5		5-10		11-15		Above 15		F	%
		F	%	F	%	F	%	F	%		
1	Trainer/ Teachers	36	62.1	15	25.9	7	12.1	-	-	58	100
2	Academic staff	-	-	7	50	5	35.5	2	14.28	14	100

Regarding to years of service in training 15 (25.9%) of trainers and 7 (50%) of the academic staffs had ten and less than ten years of experiences in their colleges respectively. Seven (12.1%) of the trainers and 5(35.5%) of the academic staffs had eleven and less than fifteen years of experience respectively. The rest 36 (62.1%) of trainers had below five years of experience and 2(14.28%) academic staffs had above fifteen years of experience in their colleges. To sum up the majority of the respondents both trainer and academic staff had sufficient work experience. Beside to these, the senior staffs trained and share their experience for those having less experience.

#### **4.2. The Understanding, Willingness and Readiness of key actors in the Implementation of Competency Based Training.**

**Table 8: Trainees Understanding, Willingness and Readiness in the Implementation of Competency Based Training from trainees' perspectives**

Strongly disagree = 1, disagree = 2, undecided= 3, agree = 4 strongly agree =5

NO	Item	Respondent	Scale with value					mean
			1	2	3	4	5	
1	Trainees have enough orientation about the overall TVET strategies and CBT system	F	13	89	6	51	29	2.97
		%	6.9	47.3	3.2	27.1	15.4	
1.1	orientation is given about market demand occupation	F	12	95	11	56	14	2.81
		%	6.4	50.5	5.9	29.8	7.4	
1.2	orientation is given about occupational standards of each fields o occupation	F	15	108	19	36	10	2.56
		%	8	57.4	10.1	19.1	5.3	
1.3	orientation is given about CBT delivery system	F	24	97	14	41	12	2.67
		%	12.8	51.6	7.4	21.8	6.4	
1.4	There are lack of adequate orientation from the concerned body about the relevant training guideline	F	33	78	13	46	18	2.8
		%	17.6	41.5	6.9	24.5	9.6	
2	Adequate orientation is given for the trainees on the legal and ethical responsibility	F	36	57	18	63	14	2.66
		%	19.1	30.3	9.6	33.5	7.4	
3	Trainees are ready to acquire TVET competency necessary to complete the objective of their training program	F	24	96	7	42	19	2.00
		%	12.8	51.1	3.7	22.3	16.1	
4	Opportunity is given to trainees to choose field of study on the bases of their	F	50	116	2	12	8	2.71
		%	26.6	61.7	1.1	6.4	4.3	

	interest							
5	Trainees have adequate information about CBT assessment method	F	21	80	32	43	12	3.27
		%	11.2	42.6	17.0	22.9	6.4	
6	I travel far to reach to the industry where I get training program	F	12	54	14	87	21	2.01
		%	6.4	28.4	7.4	46.3	11.2	
7	I have guidance and counsellor whom I consult industry training	F	40	119	20	6	3	2.15
		%	21.3	63.3	10.6	3.2	1.6	
8	Most of the time trainees are assigned on the right work position during training in industries	F	54	90	11	28	5	2.2
		%	28.7	47.9	5.9	14.9	2.7	

Regarding the appropriateness, adequacy and clarity of the orientation, respondents were asked to indicate the extent of pre- training enrollment orientations. As it is illustrated table 8, item 1, the majority respondents 89 (47.3%) of trainees were not fully oriented about the overall TVET strategies and competency based delivery system. This shows that many respondents agree with the orientation program is not enough.

As it is illustrated in the same table, regarding item 1, 2, 3, and 4, respondents 95 (50.5%), 108 (57.4%), 97 (51.6%), and 78 (41.5), respectively indicated that the extents of the orientation of overall TVET strategies and Outcome-Based training by stem, market demand, occupational standards, on competency based training delivery, the requirements in the relevant training guidelines were not given adequately. This shows that many respondents agree with the existence of partial orientation. From these results, we can clearly understand trainees have lack of understanding about the Competency Based Training program and delivery system. According to Fullan (2004), persons who implement the curriculum, need to understand the characteristics of the package and know the purpose of the innovation clearly.

In the second item, the majority of the trainees 120 (63.9%) disagree with the fact that trainees are ready to acquire technical and vocational competence necessary to complete the objectives of their training program. This implies that there is lack of readiness of the trainees. Similarly 166 (88.3%) of respondents were not given the opportunity so as to choose a field of study on the basis of their interest. This implies that most of the trainees lose their interest and readiness in learning. Regarding to item 5, majority of trainees 101(53.8%) disagree with the availability of adequate information about the Competency Based Training assessment methods being given to them. Regarding to item 5, most of the respondents 108 (57.5%) agree on the place where they live is far away from the industries where the training

is being given. This has cost implication where the trainees may not be interested for the training. It can also be seen from the Table 8, the majority of the respondents 159 (84.6%) disagree on the fact that there are guidance and counsellor whom they consult for industries training and school based learning. This implies that without the consultation and guidance, the trainee may not be prepared for the new environment in a new industry which may result loss of self-confidence and motivation for the training. Similarly as can be seen from Table 8 of item 8, the majority of the respondent 144 (76.6%) disagree on the assignment of the trainees on the right work position during industries training.

In general, in the case of curricular innovations it is obvious that students' relevant competencies and attitudes are an important factor in implementation. If the innovative proposal is unclear, against their perceived needs, over or under-demanding etc., it may lose students' active participation (Doyle and Ponder, 1977-1978). Hence, for the trainees to be motivated, creative and competent enough, it is an essence to assign them on field of study of their interest and also on the right work position during their training in industries.

**Table 9: Trainees Understanding, Willingness and Readiness in the Implementation of Competency Based Training program from Trainers' and Academic staffs' officers perspectives**

Strongly disagree = 1, disagree = 2, undecided= 3, agree = 4 strongly agree =5

No	Item	Respondents	Scale with Value					Statistics		
				1	2	3	4	5	Mean	Average mean
1	Trainees have enough orientation about the overall TVET Strategy and CBT system	Trainers	F		33	4	19	2	2.83	2.91
			%		56.9	6.9	32.8	3.4		
		Academic Staff	F		7	1	5	1	3.00	
			%		50.0	7.1	35.7	7.1		
1.1	Enough orientation is given about market demand occupation	Trainers	F	3	39	3	11	2	2.48	2.52
			%	5.2	67.2	5.2	19.0	3.4		
		Academic Staff	F		10	1	2	1	2.57	
			%		71.4	7.1	14.3	7.1		
1.2	Enough orientation is given about occupational standard of each field of occupation	Trainers	F		35	3	18	2	2.78	2.74
			%		60.3	5.2	31.0	3.4		
		Academic Staff	F		9	1	3	1	2.71	
			%		64.3	7.1	21.4	7.1		
1.3	Enough orientation is given about CBT delivery System	Trainers	F		43	6	7	2	2.45	2.27
			%		74.1	10.3	12.1	3.4		
		Academic Staff	F		9	1	3	1	2.71	
			%		64.3	7.1	21.4	7.1		
1.4	There are lack of adequate orientation from the concerned body about the requirement of the	Trainers	F		1	4	11	42	3.62	3.63
			%		1.7	6.9	19.3	72.4		
		Academic Staff	F		2	1	11	-	3.64	
			%							

	relevant guideline		%		14.3	7.1	78.6	-		
2	Trainees are ready to acquire TVET competency necessary to complete the objective of their training program	Trainers	F		46	6	4	2	2.34	2.45
			%		79.3	10.3	6.9	3.4		
		Academic Staff	F		10	1	2	1	2.57	
			%		71.4	7.1	14.3	7.1		
3	Opportunity is given t trainees to choose field of study on the bases of their interest	Trainers	F		31	-	25	2	2.97	2.59
			%		53.4	-	43.1	3.4		
		Academic Staff	F		13	-	-	1	2.21	
			%		92.9	-	-	71		
4	Trainees have adequate information about CBT assessment method	Trainers	F		51	2	5	-	2.21	2.17
			%		87.9	3.4	8.6	-		
		Academic Staff	F		13	-	-	1	2.14	
			%		92.9	-	-	7.1		
5	Most of the time trainees are assigned on the right work position during industry training	Trainers	F		44	4	10	-	2.41	2.35
			%		76.9	6.9	17.2	-		
		Academic Staff	F		10	-	4	-	2.57	
			%		71.4	-	28.6	-		

As can be seen from Table 9, the item which is required to rate regarding trainees orientation about the overall TVET strategies and Competency Based Training system, respondents were asked to indicate the extent of pre-training enrollment orientations. Accordingly, as indicated Table 9, item 1, the majority of respondents 33 (56.9%) of trainers and 7 (50.0%) academic staff agree on trainees having enough orientation about the overall TVET strategies and Competency Based Training system. The result indicates that we can clearly understand trainees have lack of understanding about the Competency Based Training program and delivery system.

In connection to that, descriptive statistic made on data Table 9, in item 1, reveals that the average mean were 2.91 which is less than the expected mean (3.00). This indicates that enough orientations were not given for the trainees on the overall TVET strategies and Competency Based Training.

As it is illustrated in the same table regarding item 1.1, 1.2, 1.3 and 1.4, the of majority of trainers, 42 (72.4%), 35(60.3%), 43 (74.1%), 42(72.4%), respectively, disagreed on the adequacy of the given orientation on market demand, occupational standards, Competency Based Training delivery and the requirements in the relevant training guide lines, respectively. Similarly, 9(64.3%), 9 (64.3%), 10 (71.1%), and 11(78.6.%) of Academic stuffs, respectively, disagreed on the same items. Also the descriptive statistics (average mean) 2.52,

2.74, and 2.27, which are less than the expected mean, made on these items 1.1, 1.2 and 1.3, respectively, and the average mean (3.63) of item 1.4 which is above the expected mean, also reveals the inadequacy of the overall orientation given.

The data on Table 9 in item 2, 3, 4, and 5 reveals that 2.34 and 2.57, 2.97 and 2.21, 2.21 and 2.14, 2.41 and 2.57, of trainers and academic staff respectively. This implies that the mean are less than the expected mean (3).

Regarding item 2 of table 9, the results indicate that the majority of the respondent disagreed with trainees' readiness to acquire technical and vocational competence necessary to complete the objectives of their training program. Both respondents' result showed that trainees have lack of work readiness.

Similarly, concerning item 3 of table 9, the majority of the respondents 31 (53.4%) trainer and 13 (92.9%) academic staffs disagreed on trainees being given an opportunity so as to choose a field of study on the basis of their interest. Similarly, the descriptive statistics indicates that the average mean value (2.45) is less than the expected mean (3.00) which implies that most of the trainees lose their interest and readiness in learning. Regarding item 4, majority of trainers and academic staff disagree on adequate information being given for trainees about the competency based training assessment methods.

Similarly as can be seen from Table 9 of item 5, majority of the respondent disagree on the assignment of the trainees on the right work position during industries training.

In general, concerning competency based curricular implementation, Awareness and basic knowledge about the training program, Knowledge and understanding of theories and practices required in new curriculum, skills development for discrete behaviours, patterns and strategies, changing beliefs about learning, and academic content are important elements in the implementation of competency based curriculum.

**Table 10: Trainers and Academic Staffs officers Understanding, Readiness and Willingness' in the Implementation of Competency Based Training program**

Strongly disagree = 1, disagree = 2, undecided= 3, agree = 4 strongly agree =5

No	Item	Respondents	Scale with Value					Statistics		
				1	2	3	4	5	Mean	Average mean
1	Trainers have enough orientation about the CBT program	Trainers	F	5	44	3	6	-	2.17	2.15
			%	8.6	75.9	5.2	10.3	-		
		Academic Staff	F		13	-	1	-	2.14	
			%		92.9	-	7.1	-		
2	TVET colleges provide training for trainers and Academic staff about CBT	Trainers	F	-	44	2	12	-	2.45	2.58
			%	-	75.9	3.4	20.7	-		
		Academic Staff	F	-	9	-	5	-	2.71	
			%	-	64.3	-	35.7	-		
2.1	Training is given about the overall TVET strategy and CBT program	Trainers	F	-	30	-	28	-	2.97	2.82
			%	-	51.7	-	48.3	-		
		Academic Staff	F	-	9	-	5	-	2.71	
			%	-	64.3	-	35.7	-		
2.2	Training is given about market demand occupation	Trainers	F	-	32	-	26	-	2.90	2.80
			%	-	55.2	-	44.8	-		
		Academic Staff	F	-	9	-	5	-	2.71	
			%	-	64.3	-	35.7	-		
2.3	Training is given about occupational standard and unit of competency of each filed of occupation	Trainers	F	8	45	-	4	1	2.05	2.09
			%	13.8	77.6	-	6.9	1.7		
		Academic Staff	F	-	13	-	1	-	2.14	
			%	-	92.2	-	7.1	-		
2.4	Training is given about CBT delivery system	Trainers	F	-	41	3	14	-	2.53	2.44
			%	-	70.7	5.2	24.1	-		
		Academic Staff	F		11	1	2	-	2.36	
			%		78.6	7.1	14.3	-		
2.5	Training is given about teaching methodology in the relevant training guide line	Trainers	F	-	46	3	8	1	2.38	2.72
			%	-	79.3	5.2	13.8	1.7		
		Academic Staff	F	-	6	1	7	-	3.07	
			%	-	42.9	7.1	50.0	-		
3	Academic staffs have knowledge and readiness to put in to action CBT	Trainers	F	-	41	3	14	-	2.53	2.58
			%		70.7	5.2	24.1	-		
		Academic Staff	F	-	9	1	4	-	2.64	
			%	-	64.3	7.1	28.6	-		
4	Teaching staffs have proper information in order to fulfil their role and they are willing to apply	Trainers	F	4	31	4	19	-	2.66	2.40
			%	6.9	3.4	6.9	32.8	-		
		Academic Staff	F	1	11	1	1	-	2.14	
			%	7.1	78.6	7.1	7.1	-		
5	Teaching staffs hold appropriate industry and teacher qualification	Trainers	F	16	35	4	3	-	1.90	2.09
			%	27.6	60.3	6.9	5.2	-		
		Academic Staff	F	1	10	1	2	-	2.29	
			%	7.1	71.4	7.1	28.6	-		

Regarding item 1 of Table 10, the results indicate that the majority of the respondents 49 (84.5%) of trainers and 13 (92.9%) of academic staff disagree with trainer and academic staff having enough information about the Competency Based Training program. This implies that there are unclear about goals and complexity of the program. One of crucial factor that affects the implementation of competency based curriculums is the innovation's clarity. Trainers and academic staffs were not clear about what they were expected to do differently – what change meant for them in practice (Lütgert and Stephan, 1983).

Similarly on same table item 2.1, 2.2, 2.3, 2.4 and 2.5, the majority of trainers 44(75.9%), 30 (51.6%), 52(91.4% ), 41(70.7%), and 46 (79.3%), respectively, disagreed on the adequate training being given on overall TVET strategies and Competency Based Training, market demand, occupational standards, on competency based training delivery and the requirements in the relevant training guide lines. The response of the majority of academic staff 9(64.3%), 9(64.3%), 11(78.6%) 11(78.6%), and 6(42.9%), respectively, on the same items also shows adequate training were not being given. From these results we can clearly understand trainers and academic staff have Knowledge gap in the implementation of Competence Based Training program and most of them have lack of understanding about the Competency Based Training program and delivery system.

According to Fullan ( 2005) and Hargreaves and Fink (2005), capacity building is one of the key conditions for successful implementation of curriculum reforms, which involves policies, strategies, resources and other actions that are aiming at increasing the collective power of people. However, it is often the missing link even when there is a consensus of the need for change.

However, the interview made with the deans of both sampled colleges, sharing the same idea, on the above issue and said that “most of the trainers are well trained in work shop and participated on various seminars about the Competency Based Training. In addition, they were trained with in-service training program but most of the trainers’ interest and willingness is not good enough for the required achievement”.

Similarly, item 3 of same table above, the majority of trainers 41 (70.7%) and academic staffs 9 (64.3%) disagreed on the academic staffs having knowledge and readiness to put into action Competency Based Training program. This result indicates that there is the knowledge gap and lack of readiness observed in most of trainers and academic staff. Regarding this point,

the deans said that” not all teachers are going to become actively involved in reform or change. There are few teachers who were not motivated enough”.

Regarding, item 8, table 10, the majority of respondents, 35(60.3%) of trainers and 12(80.3%) of academic staff disagreed on teaching staff having proper information in order to fulfil their roles and their willingness to apply. This result shows that there are communication gap from the required body and trainers. Similarly, as can be seen from item 9, the majority of the respondents, 51 (87.9%) trainers and 11 (78.5%) academic stuffs disagreed on teaching staff holding appropriate industry and teacher qualification. This implies that most of trainers and academic staff need to experience skill training work shop.

**Table 11: Industries Understanding, Readiness and Willingness’ in the Implementation of Competency Based Training program**

Strongly disagree = 1, disagree = 2, undecided= 3, agree = 4 strongly agree =5

No	Item	Respondent		Scale with value					Statistics	
				1	2	3	4	5	mean	Average mean
1	Industries are well informed about the CBT delivery system	Trainees	F	49	94	10	29	6	2.09	2.1
			%	26.1	50	5.3	15.4	3.2		
		trainers	F	3	51	-	4	-	2.09	
			%	5.2	87.9	-	6.9	-		
		Academic staff	F	1	11	1	1	-	2.14	
			%	7.1	78.6	7.1	7.1	-		
2	Industries are willingness to accepts trainees for the practice of CBT program	Trainees	F	34	122	18	10	4	3.03	2.59
			%	18.1	64.9	9.6	5.3	2.1		
		Trainers	F	5	37	-	16	-	2.47	
			%	8.6	63.8	-	27.6	-		
		Academic staff	F	1	10	1	2	-	2.29	
			%	7.4	71.4	7.1	14.3	-		
3	Training is given for industries supervisor about the overall TVET strategies and CBT delivery system	Trainees	F	18	56	28	75	11	2.53	2.20
			%	9.6	29.8	14.9	39.9	5.9		
		Trainers	F	16	39	2	1	-	1.79	
			%	27.6	67.2	3.4	1.7	-		
		Academic staff	F	-	12	-	2	-	2.29	
			%	-	85.7	-	14.3	-		
4	Industries and companies have knowledge of the implementation on the CBT during workplaces learning	Trainees	F	28	91	18	43	8	2.13	2.08
			%	14.9	48.4	9.6	22.9	4.3		
		Trainers	F	13	35	4	6	-	2.05	
			%	22.4	60.3	6.9	10.3	-		
		Academic staff	F	1	12	-	1	-	2.07	
			%	7.4	48.4	-	7.4	-		

Regarding item 1 of table 11, the majority of respondents, 143(76%) trainees, 54(93.1%) trainers and 12(85.7%) academic staff disagreed concerning industries being well informed about the Competency Based Training program delivery system. This implies that most industries have lack of understanding of the program and there are knowledge gaps in the implementation of Competence Based Training system. The average mean value (2.10) also indicates that it is less than the expected mean value (3.00).

Similarly, regarding item2 of same table, the majority of the trainees, trainers and academic staff disagreed that most industries are willing to accept trainees to realize Competency Based Training program. This implies that as long as industries are not willing to accept trainees for work place learning, it is difficult to implement the program. Beside to this one of the challenges that hinders Competency Based Training program is, industries understanding and willingness. According to Smith and Keating (1997), in implementation of CBT, there are conceptual confusions that surround CBT among teachers and industries personnel.

As shown in table 11, the majority of the respondents concerning item3, disagreed on knowledge of the implementation of CBT that Industries and companies have during work places learning/training. This result indicates that most industries personnel are not familiar with the implementation of Competency Based Curriculum. Regarding this point, it is important that industries should understand the Competency Based Curriculum delivery system and aware of the requirement of the Competency Based Training program and facilities where students will have the opportunity to have hands on exposure to industry standards, in order to effectively implement the program.

Regarding to this issue an interview was made with Deans of the sampled colleges said that “The knowledge of the implementation of CBT that Industries and companies have during work places learning/training very low. This is due to the fact that they are not ready to implement the program and lack of proper training given for the industries in addition to this poor collaborative and emotional effort of the industries for cooperative training”.

### 4.3. The Training Infrastructure and Facilities

**Table 12: Training Materials, Learning Resource and Infrastructure and Facilities**

Strongly disagree = 1, disagree = 2, undecided= 3, agree = 4 strongly agree =5

No	Item	Respondents		Scale with value					statistics	
				1	2	3	4	5	mean	Average mean
1	Supply of teaching and learning materials are on time and the material are up to date and relevant	Trainees	F	33	105	21	14	15	2.32	2.27
			%	17.6	55.9	11.2	7.4	8.0		
		Trainers	F	11	41	5	1	-	1.93	
			%	19	70.7	8.6	1.7	-		
		Academic staff	F	-	13	-	1	-	2.57	
			%	-	92.9	-	7.1	-		
2	Industries arrange and provide the facilities and supervisions to instruct trainees in the training plan.	Trainees	F	30	129	9	14	6	2.48	2.28
			%	16.0	68.9	4.8	7.4	3.2		
		Trainers	F	13	32	-	13	-	2.22	
			%	22.4	55.2	-	22.4	-		
		Academic staff	F	-	13	-	1	-	2.14	
			%	-	92.9	-	7.1	-		
3	There are adequate materials and equipment available in the institution.	Trainees	F	27	98	19	33	11	2.68	2.68
			%	14.4	52.1	10.1	17.6	5.9		
		Trainers	F	2	32	4	20	-	2.72	
			%	3.4	55.2	6.9	34.5	-		
		Academic staff	F	1	8	-	5	-	2.64	
			%	7.1	57.1	-	35.7	-		
4	There are sufficient learning rooms and workshop rom in the TVET college.	Trainees	F	11	49	12	105	11	3.29	3.35
			%	5.9	26.1	6.4	55.9	5.9		
		Trainers	F	2	8	3	45		3.57	
			%	3.4	13.8	5.2	77.5			
		Academic staff	F		6	-	7	1	3.2	
			%		42.9		50	7.1		
5	The accessibility of computers, library and books in the college is very high.	Trainees	F	29	90	18	39	12	2.77	2.76
			%	15.4	47.9	9.6	20.7	6.4		
		Trainers	F	7	37	2	12	-	2.32	
			%	12.1	63.8	3.4	20.7	-		
		Academic staff	F	-	6	-	7	1	3.21	
			%	-	42.9	-	50	7.1		
6	There are necessary materials and machineries for training process and practice which is well matched with the course.	Trainees	F	18	125	9	20	16	2.42	2.55
			%	10	66.5	4.78	10.6	8.5		
		Trainers	F	15	33	3	7	-	2.03	
			%	25.9	56.9	5.2	12.1	-		
		Academic staff	F	-	6	-	7	1	3.21	
			%	-	42.9	-	50	7.1		
7	Most of materials and machineries are out of use and damaged.	Trainees	F	11	49	12	105	11	3.29	3.19
			%	5.9	26.1	6.4	55.9	5.9		
		Trainers	F	2	8	3	45	-	3.57	
			%	3.4	13.8	5.2	78.6	-		
		Academic staff	F	2	6	-	6	-	2.71	
			%	14.3	42.9	-	42.9	-		

8	There are appropriate guide line occupational standard and unit of competency for CBT training.	Trainees	F	32	89	19	40	8	2.48	2.72
			%	17.0	47.3	10.1	21.2	4.3		
		Trainers	F	22	18	6	12	-	2.13	
			%	37.9	31.0	10.3	20.6	-		
		Academic staff	F	-	3	-	11	-	3.57	
			%	-	1.4	-	78.6	-		
9	The working environment in the college is conducive for teaching learning process.	Trainees	F	15	51	14	84	24	3.27	3.47
			%	8	27.1	7.4	44.7	12.8		
		Trainers	F	8	12	4	20	14	3.34	
			%	13.8	20.7	6.8	34.5	24.1		
		Academic staff	F	-	3	-	7	4	3.79	
			%	-	21.4	-	50.0	28.6		
10	There are sufficient materials in the CBT training offering organizations.	Trainees	F	39	79	12	41	17	2.20	2.54
			%	20.7	42	6.4	21.8	9.0		
		Trainers	F	1	35	1	21	-	2.72	
			%	1.7	60.3	1.7	36.2	-		
		Academic staff	F	-	9	-	5	-	2.71	
			%	-	64.3	-	35.7			

To produce competent graduates of TVET, class room, workshops, machineries and learning materials are some of the necessary inputs to run program. Without these inputs, the expected achievement will not be successful.

Concerning sufficient supply of teaching and learning materials (see item 1 of table 12) on time and the materials being up to date, relevant and sufficient. The majority of respondents, 138 (73.5%) trainees, 52 (89.7%) trainers and 13 (92.9%) academic staff were rated disagree that there were no sufficient supply of teaching learning materials on time. This implies that there are shortages of materials that affect the teaching learning process.

In light of this fact, through *resource support and training* (Lütgert and Stephan, 1983, p.510), external agencies can promote curriculum implementation. "... through resource support, standardization, and closer monitoring, state departments of education have sometimes directly influenced implementation of specific objectives, especially when local conditions were favourable. However, lack of role clarity, ambiguity about expectations, absence of regular interpersonal communication, ambivalence between authority and support roles of external agencies, and solutions that do not work have combined to frustrate implementation" (Fullan, 1994).

The effectiveness of implementation requires permanent action, mutual cooperation of stakeholders. Examples of mutual support in schools or between schools or regions should cover the networking, constant communication, joint actions, conferences, etc. In order to

obtain successful implementation, the atmosphere of support is necessary. Its characteristics are: mutual confidence and open communication between actors in schools and out of schools, resolving problems, engagement of most members of the school staff. The principals have a key role in such processes. They should be: well acquainted with projected changes and holistic implementation process, willing to be involved in the process of changes and prepared for it, and capable to put into practice various management and decision-making strategies in order to respond to teachers' needs.

Regarding to this issue an interview was made with a senior expert of Regional TVET experts where the response are as follows “the supply of teaching and learning materials shortage is a series problem the college faces. This is due to the fact that they are expensive materials that they need adequate financial support and the purchasing system is not on time. Deans of the sampled colleges also said that” in addition to lack of adequate fund there is poor collaborative and emotional effort of all the stake holders for the materials to be supplied on time”.

Regarding item 2 of Table 12, the majority of the respondents, 159 (84.9%) trainees, 52 (89.7%) trainers and 13 (92.9%) academic staff disagreed on industries' arrangement and provision of the required facilities, instructing the range of work and supervision of the trainees as specified in the training plan. This implies that most of industries do not have budget for work place learning of trainees and there is coordination problem and shortage of professional man power that is trained related to the training program. Regarding to this issue, interviews made with production managers of industries which are involved in Cooperative Training program shared the above ideas. In addition, the interview revealed that over load of trainees in few of these industries made the implementation of CBT program difficult.

The extent of adequate materials and equipment availability in the institution, concerning item 3 of Table 12, the majority respondents 125 (66.5%) trainees, 34 (58.6%) trainers and 9 (64.24%) academic staff disagreed. The statistical data result as well shows that the average mean value (2.68) is less than the expected mean value (3.0). This implies that the adequacy of tools and equipment in workshop room is inadequate.

With regard to training materials, Middleton (1993) noted that, inadequate supply of equipment, lack of workshops, and out dated equipment will make effective training impossible. Boldly, in CBT system, appropriate training materials are essential as per each

unit of competence to enable trainees in achieving predetermined standard. Likewise Hellwing (2006), suggested that the degree of successful implementation of competence based training depends, on the one hand on the facilities and equipment of the institution, and on the other the learning materials that are provided.

Regarding item 4 of Table 12, the majority respondents, 116 (61.8%) trainees, 45 (77.58%) trainers and 8 (57.1%) academic staffs disagreed that there is sufficient learning and workshop rooms in TVET Colleges. Average mean value (3.35) also reveals this, as it is greater than the expected mean value (3.0).

The majority respondents, 119 (63.3%) trainees and 43(75.8%) trainers regarding item 5 of Table 12, disagreed on adequacy of the computer access, library and books in the college. However, the majority of 11(78.6%) academic staffs agreed on enough access f computers, libraries and books. The average mean value (2.77), on the other hand, which is less than the expected mean value, shows that there is inadequate book, library and access of computer with the implication of insufficient supply of facility for the TVET colleges.

As shown in table 12, the majority of the respondent 143 (76.48% ) trainees and 48(82.8% ) trainers, regarding item 6, disagreed on the availability of necessary materials and machineries for training process and practice which are well matched with the given course of competency but the majority of academic staffs 8 (57.1%) agreed with the regarding issue. Also, when the statistical data result seen, the average mean value is less than the expected mean value. This implies that materials and machineries necessary for training process and practice which are not well matched with the given course of competency. This result indicates that there is the shortage of materials.

During the observation, the student researcher, as well, observed that there were in sufficiency of training tools and equipment, moreover, some respondents in their responses to the open ended questions have stated that they hardly get the required materials, tools and equipment as per unit of competence of occupational standard for practical training.

As shown in item 7 of Table 12, the majority of the respondents 116(61%) trainees and 45 (78.5) trainers agreed while the majority of academic staff 10 (57.2%) disagreed on the out of use and damaged materials and machineries in the TVET colleges. The statistical data result showed that the average mean value (3.19) which is greater than the expected mean (3.00). This indicates that some of materials and machineries were damaged and need to be repaired.

Therefore, from the respondents percentage results it is possible to say that, the availability of materials were less and damaged that it may affect the teaching learning process. Also, from the observation of the student researcher, some of the materials are damaged that they are not giving service at all. An interview was also made with a senior expert of regional TVET experts. They said that technical groups were established to work jointly with the colleges to solve such problems. Besides to this, the dean of both sampled colleges said that “it was difficult to solve this issues because of lack of adequate fund, human resource to repair the required damaged materials and equipment on time. They also added that this participant’s cooperativeness and passionate efforts is very poor.”

With regarding to item 8 in the same Table, the majority of respondents 121(64.34%) trainees and 40(69.1%) trainers disagreed on the availability of appropriate guide lines such as occupational standard and unit of competency for CBT in their college while 11(78.6%) of the total academic staffs agreed on this issue. The statistical data result shows that the average mean value is less than the expected mean (3.00). Thus, based on the results, it can be said that there no sufficient and appropriate guidelines for CBT. On the other hand, from open ended questions, the majority of the respondents said that some of the guideline for occupational standards and unit of competency are not well arranged sequentially that they are unclear for the trainers to use.

In table 12 item 9, the respondents were asked if the working environments at the college is conducive for the teaching learning process, work place and experience opportunities and majority of them, 108 (57.5%) trainees, 34 (58.6%) trainers and 11 (78.6%) agree with this issues and the average mean value (3.47) is greater than the expected mean (3.00). This implies that the work environment is conducive for teaching learning process and there is an opportunity to implement CBT.

Similarly, item 10 of the same table shows that the majority of respondents 118 (62.7%) trainees, 36 (61.3%) trainers and 9 (64.3%) disagreed on the availability of sufficient materials in CBT training offering organizations. The average mean value (2.54 less than the expected value) also shows there is lack of teaching materials in CBT offering organizations. According to responses to the open ended questions of some trainee respondents, they hardly get the required materials, tools and equipment as per unit of competence of occupational standard for practical training. The student researcher was also able to observe this in few number of the industries but there are also few industries with good enough training tools and equipment.

In general training for high quality skills require appropriate equipment, tools, adequate supply of training materials and practice by the learners (Midlotn, 1993:210-215). World Bank on the other has confirmed that inadequate supply of equipment; very poor basic equipment lack of laboratory and materials will make effective teaching impossible (World Bank, 1993:130-140). Other requirements include relevant text books and training manuals and qualified instructors will experience in enterprises. Well qualified instructors with will experience in enterprises. Well qualified instructors with industry based and well equip workshops in TVET are very important in preparing the training towards self-employment.

#### 4.4. The Teaching learning process in the integration of school based and work place learning

**Table 13: The Training Process Linking the School Based Learning and the Work Place Learning**

Strongly disagree = 1, disagree = 2, undecided= 3, agree = 4 strongly agree =5

No	Item	Respondents		Scale with value					Statistics	
				1	2	3	4	5	mean	Average mean
1	Appropriate information is given for trainees about the training during work place training	Trainees	F	42	93	26	27	-	2.18	2.51
			%	22.3	49.3	13.8	14.4			
		Trainer	F		31	4	23		2.86	
			%		53.4	6.9	39.7			
		Academic stuff	F	1	9	-	4	-	2.5	
			%	7.1	64.3		28.6			
2	Trainees provided occupational standards and unit of competency guide line in school and work places learning	Trainees	F	51	89	16	28	4	2.35	3.0
			%	27.1	47.3	8.5	14.9	2.1		
		Trainer	F		34	4	20		2.76	
			%		58.6	6.9	34.5			
		Academic stuff	F	-	11	-	3		2.43	
			%		78.6		21.4			
3	Continuous and detailed feedback is given to trainees on their progress during school based learning	Trainees	F	36	94	27	19	12	2.14	2.39
			%	19.1	50	14.4	10.1	6.4		
		Trainer	F	2	37	1	18		2.6	
			%	3.4	63.8	1.7	31.0			
		Academic stuff	F	-	11	-	3	-	2.43	
			%		78.6		21.4			
4	Trainees have sufficient information before starting new occupational	Trainees	F	45	97	21	25	-	2.76	2.36
			%	23.9	51.6	11.2	13.3			
		Trainer	F	11	36		11		2.19	
			%	19	62.1		19			

	standards and unit of competence in school	Academic staff	F	2	10	-	2	-	2.14	
			%	14.3	71.42		14.28			
5	Trainees assigned on the right work position during in company training	Trainees	F	53	85	28	19	3	2.8	2.42
			%	28.2	45.2	14.9	10.1	1.6		
		Trainer	F	15	37	2	4		1.91	
			%	25.9	63.8	3.4	6.9			
		Academic staff	F	-	10	-	4	-	2.57	
%			71.4		28.6					
6	The teaching learning process allows each learners to have the opportunity to develop and evaluated on the competencies achieved	Trainees	F	32	64	21	51	20	2.51	2.37
			%	17.0	34.0	11.2	27.1	10.6		
		Trainer	F	18	25	2	13		2.17	
			%	31.0	43.1	3.4	22.4			
		Academic staff	F	-	10	2	2	-	2.43	
%			71.4	14.3	14.3					
7	TVET colleges integrating the competency based training (CBT) Program in to the trainees over all educational and training program	Trainees	F	37	80	21	39	11	2.34	2.39
			%	19.7	42.6	11.2	20.7	5.9		
		Trainer	F	12	30	4	10		2.13	
			%	20.68	51.72	6.8	17.24			
		Academic staff	F	-	8	2	4	-	2.71	
%			57.1	14.3	28.6					
8	There are memorandum of agreement between industries and colleges	Trainees	F	29	95	36	28	-	2.46	3.2
			%	15.4	50.5	19.1	14.9			
		Trainer	F	1	5	8	44		3.64	
			%	1.7	8.6	13.8	75.9			
		Academic staff	F	-	3	1	10	-	3.50	
%			21.4	7.1	71.4					
9	Trainers used variety of teaching methods and teaching aides	Trainees	F	29	95	36	28	-	2.46	2.90
			%	15.4	50.5	19.1	14.9			
		Trainer	F	5	39	11	13		2.89	
			%	8.62	67.24	18.96	22.41			
		Academic staff	F	-	2	1	11		3.64	
%			14.3	7.1	78.6					

As indicated in Table 13, item1, and the majority of the respondents 135 (71.6%) trainees, 31 (53.4%) trainers' and 10 (71.4%) academic staffs officers disagree on the appropriate information being given for trainees about the training during work place learning. This implies that the trainees will not be ready for an open and immediate communication and cooperation with all the workers in the industries where the training is being given.

Regarding Table 13, item 2, the majority respondents, 140 (74.4%) trainees, 34 (58.6%) trainers and 11 (78.6%) academic staff disagree on trainees being given occupational standards and unit of competency guide line in school and work place learning. These results indicate that there are lack of Information and preparation on the structure of the curriculum and its role in overall teaching process at school and work place learning. On the other hand, trainees' poor understanding of the educational process and learning process make them to perform tasks inappropriately at their work place in the framework of a certain occupation.

Similarly, Table 13, item 3, the majority of respondents, 130 (69.1%) trainees, 39(67.4%) trainers and 11(78.6%) academic staff, agree on lack of continues and detailed feedback being given for trainees on their progress during school based learning. This implies thatwithout any feedback, it is difficult for trainees to recognize their weakness and strength during the teaching learning possess. Therefore, the required achievement in competency will not be obtained. As a result, monitoring, coaching and supporting of trainees, continuously, in school and work place learning leads trainees to success in achieving the required competency.

Regarding item 4, in the same Table, the majority of respondents 142 (75.5%) trainees, 47 (81.1.9%) trainers and 12 (85.7%) academic staff disagree on trainees having sufficient information before starting new occupational standards and unit of competence in school. This implies that trainees without enough information may not make themselves familiar with relevant learning materials or on aims and outcomes of new occupational standards.

Regarding Table 13, item 5, majority of the respondent, 138 (73.4%) trainees, 52 (89.7%) trainers and 10 (71.4%) academic staff disagree on trainees assignment on the right work position during in company training. This implies that trainees are not assigned in the right position during work place learning. Hence, trainees may not acquire the necessary work experience

As shown in the same table item 6, respondent were asked if the teaching learning process allows each learners to have the opportunity to develop and evaluate on the competencies achieved. The majority of the respondent, 96 (51%) trainees, 43 (74.1%) trainers and 10 (71.4%) academic staff disagree. This implies that there are problems in teaching learning process. Concerning this fact Field and Drysidale (1991) posit that the learning process of CBC is use individualized materials flexible learning time and continued feedback to the students.

With regard to item 7 in the same table, respondents were asked if TVET colleges are integrating the Competency Based Training (CBT) Program in to the trainees over all educational and training programs and the majority of the respondents, 117 (62.3%) trainees, 32 (72.4%) trainers and 8 (57.1%) academic staff disagree. Thus, the structured learning activities should be included in the college program

As shown in the same table item 8, the majority of respondents 124 (65.9%) trainees, 44 (75.9%) trainers and 10 (71.4%) academic staff agree on the availability of memorandum of agreement between school and some of industries. Regarding this issue, an interview was made with both deans of the sampled colleges. They pointed out that” one of the challenges for cooperative training or work place learning is industries’ unwillingness to sign memorandum of agreement with the college. This is because of their knowledge gap on this issue but few of the industries are working together”. This Cooperation between the two major players, industries and Vocational Schools, is based on the dual system of vocational education and training, hence, each pursuing a specified goal to successfully accomplish the training. From this, it can be deduced that a certain minimum level of cooperation between learning places will be required to enable such an aim to be achieved. Particular reference is made to the way in which the pursuit of the joint aim of professional action competence brought about a blurring of the edges between the conventional division of functions between companies and vocational schools (vocational school= theory, company = practice) WALDEN ( 1996; 1999c).

Similarly in the same Table item 9, majority of the respondent 124 (64.9%) trainees, and 42 (72.4%) trainers disagree, whereas, 11 (78.6%) academic stuffs disagree on trainer’s utilization of variety of teaching methods and teaching aides. Similarly the arithmetic mean indicates that the average mean value 2.89 is less than the expected mean (3.00). Therefore, trainers apply different methodology at low stage. Beside to this, from open ended questions, the majority of trainer respondents said that the supply of training materials made an impact on the application of different teaching methods and also they hardly get the required materials, tools and equipment as per unit of competence of occupational standard for the implementation of the appropriate teaching methodology practically.

The student researcher was also able to observe this problem in few departments but there are also few departments with good training tools and equipment.

**Table 14: Competency-Based Mode of Training**

Strongly disagree = 1, disagree = 2, undecided= 3, agree = 4 strongly agree =5

No	Item	Respondents		Scale with value					statics	
				1	2	3	4	5	mean	Average mean
1	Competency based mode of training delivery	Trainees	F	16	55	31	85	5	3.06	3.41
			%	8.5	29.3	16.5	43.1	2.7		
		Trainers	F	2	9	3	43	1	3.55	
			%	3.4	15.5	5.2	74.1	1.7		
		Academic staff	F		2	1	11		3.64	
			%		14.2	7.1	78.6			
1.1	Demonstration and lecture	Trainees	F	28	44	16	88	12	2.77	3.25
			%	14.9	23.4	8.5	46.8	6.4		
		Trainers	F	2	10	5	37	4	3.35	
			%	3.4	17.2	8.6	63.8	6.9		
		Academic staff	F		2	1	11		3.64	
			%		14.2	7.1	78.6			
1.2	Laboratory work	Trainees	F	22	72	25	66	3	2.66	2.833
			%	11.7	38.3	13.3	35.1	1.6		
		Trainers	F	1	39	3	15		2.55	
			%	1.7	67.2	5.2	25.9			
		Academic staff	F	-	4	2	8		3.29	
			%		28.6	14.3	57.1			
1.3	Group discussion	Trainees	F	15	89	39	34	11	2.42	2.46
			%	8.0	47.3	20.7	18.5	5.9		
		Trainers	F	1	36	2	19		2.67	
			%	1.7	62.1	3.4	32.8			
		Academic staff	F	-	6	3	5		2.29	
			%		42.9	21.4	35.7			
1.4	Simulation practices	Trainees	F	28	100	26	21	13	2.47	2.89
			%	14.9	53.2	13.8	11.2	6.9		
		Trainers	F	2	18	2	34	2	3.28	
			%	3.4	31.0	3.4	58.6	3.4		
		Academic staff	F		6	3	5		2.93	
			%		42.9	21.4	35.7			
1.5	Computer based learning	Trainees	F	25	104	17	30	12	2.52	2.87
			%	13.3	55.3	9.0	16	6.4		
		Trainers	F	2	17		35	4	3.38	
			%	3.4	29.3		60.3	6.9		
		Academic staff	F		8	2	4		2.71	
			%		57.1	14.3	28.4			
	Self-paced learning	Trainees	F	45	71	14	45	13	2.48	2.88
			%	23.9	37.8	7.4	23.9	6.9		

1.6		Trainers	F	2	17		35	4	3.38				
			%	3.4	29.3		60.3	6.9					
		Academic staff	F		8	1	5		2.79				
			%		57.1	7.1	35.7						
1.7	Practical training in group and individual in workshop same like on the job training	Trainees	F	38	81	14	50	5	2.39	2.38			
			%	20.2	43.1	7.4	26.6	2.7					
		Trainers	F	18	39		1		1.72				
			%	31	67.2		1.7						
		Academic staff	F	1	5	1	7		3.00				
			%	7.1	35.5	7.1	50						
		1.8	Cooperative training based on competency	Trainees	F	36	94	18	28		12	2.21	2.56
					%	19.1	50	9.6	14.9		6.4		
Trainers	F			5	34	1	18		2.55				
	%			8.6	58.6	1.7	31.0						
Academic staff	F			1	6		7		2.93				
	%			7.1	42.9		50						

Table 14, item 1 show that the majority of respondents 90(45.8%) trainees, 44(75.8%) trainers and 11(78.6%) academic staff agree on Competency based mode of training delivery. This implies that there is a good chance of making competent skilled man power.

Regarding Table 14 item 1.1, the majority of respondents' 100 (53.2%) trainees disagree on good demonstration and lecture methods are being given to them. Whereas 41 (70.7%) trainers and 11 (78.6%) academic staff were agreed. this results show adequate demonstration and discussion mode of training delivers. based on the average mean value 3.25 which is greater than the expected mean (3) showing the respondents rating were agree. Similarly, Table 15 item 1.2, the adequate Laboratory work majority respondents 94(49.5%) trainees and 40(68.9%) trainers agreed while 8(57.1%) of academic staff disagreed. Based on the results of the average mean value 2.88 which is less than the expected mean (3) showing the respondents rating were disagrees. With regarding to this issue the student researcher was also able to observe trainers were not use the laboratory very well this problem were observed in few departments .

Regarding to item 1.3 in the same table majority of respondent 104(55.3%) trainees, 37(63.8%) trainers and 6(42.9%) academic staff disagreed on group discussion. Based on this result the average mean value 2.46 which is less than the expected mean (3) showing the respondents rating were disagrees.

Regarding Table 14 item 1.4, majority of the respondent 128(68.1%) trainees and 6(42.9%) academic staff agreed but 36(62.0%) trainers disagreed on Simulation practices .similarly the average mean value 2.89 which is less than the expected mean (3) showing the respondents rating were dis agree. Beside to this, from open ended questions, the majority of trainer respondents said that the materials were note up-to-date, note properly functioned.

As shown in the same table item1.5 Majority of the respondent 129(68.6%) trainees and 8(57.1%) academic staff agreed but the 39(67.2%) trainers dis agree on Computer based learning and also the average mean value indicate that2.89 which is less than the expected mean (3) showing the respondents rating were dis agree. The student researcher was also able to observe this problem in few departments.

With regarding to item 1.6 in the same table ,Majority of the respondent 116(61.7%) trainees and 8(57.1%) academic staff agreed but not the majority of 39(67.2%) trainers On Self-paced learning similarly the average mean value2.88 indicate that which is less than the expected mean (3) showing the respondents rating were dis agree

As shown in the same table item 1.7, majority of the respondent 119(63.3%) trainees, 57(98.2%) trainers and 7(50%) academic staff disagreed on Practical training in group and individual in workshop same like on the job training similarly, the average mean value2.38 indicate that which is less than the expected mean (3) showing the respondents rating were dis agree. Similarly ,in the same Table item 1.8, majority of the respondent 130 (69.1%) trainees and39(67.2%) trainers disagreed but 50% ofacademic staff agreed on Cooperative training based on the required competency similarly, the average mean value2.38 indicate that which is less than the expected mean (3) showing the respondents rating were also disagree.

In general, the above Table 14 respondent's results indicate that CBT mode of delivery methods not applicable adequately. There for, CBT mode of instruction involve mastery learning, the principle that all participants can master the required knowledge or skill with provided sufficient time and appropriate training methodology are used. Careno1 (2013) noted that the training methods are key to achieved the required competency hence educational and training method in CBT more Lerner centered than teacher centered the methods encourages learners actively participate in the learning situations through group, pair and whole class interaction.

**Table 15: The Training Process Linking the School Based Learning and the Work Place Learning Based on the Occupational Standards and unit of competency**

Strongly disagree = 1, disagree = 2, undecided= 3, agree = 4 strongly agree =5

No	Item	Respondents		Scale with value					statistic	
				1	2	3	4	5	mean	Average mean
1	The relationships between theory and practice in competency program highly integrated	Trainees	F	46	96	12	28	6	2.86	2.49
			%	24.5	51.1	6.4	14.9	3.2		
		Trainers	F	3	35	1	19		2.62	
			%	5.2	60.3	1.7	32.8			
		Academic staff officers	F	2	11		1		2.00	
			%	14.3	78.6		7.1			
2	Employers, supervisors are aware of the tasks they can realistically expect learners to perform in the work place learning	Trainees	F	24	68	21	60	15	2.57	2.31
			%	12.8	36.2	11.2	31.9	8		
		Trainers	F	3	38	1	16		2.52	
			%	5.2	65.5	1.7	27.6			
		Academic staff officers	F	2	12	-	-		1.86	
			%	14.3	85.7					
3	Trainers and work shop masters are familiarly with the equipment and machineries	Trainees	F	32	68	24	52	6	2.81	2.39
			%	20.2	36.2	12.8	27.7	3.2		
		Trainers	F	15	29		14		2.22	
			%	25.9	50		24.1			
		Academic staff officers	F		13		1		2.14	
			%		92.9		7.1			
4	The teaching learning methods encouraging and motivating the learners to learn and achieving the required learning out come in school and work place learning	Trainees	F	30	58	21	75	4	2.18	2.19
			%	16.0	30.9	11.2	39.9	2.1		
		Trainers	F	15	40	1	2		1.83	
			%	25.9	69.0	1.7	3.4			
		Academic staff officers	F	-	10		4		2.57	
			%		71.4		28.6			
5	Trainers link training plan	Trainees	F	40	108	11	25	4	2.11	2.17

	with the work plan		%	21.3	57.4	5.9	13.3	2.1		
		Trainers	F	13	38	6	1		2.03	
			%	22.4	65.5	10.3	1.7			
		Academic staff officers	F	1	7	-	6		2.79	
			%	7.1	50		42.9			
6	Program complementation is based on satisfactory achievement of all the specified competencies with enough time	Trainees	F	28	129	13	18		2.36	2.13
			%	14.9	68.6	6.9	9.6			
		Trainers	F	13	38	6	1		2.03	
			%	22.4	65.5	10.3	1.7			
		Academic staff officers	F	2	11	-	1		2.00	
			%	14.3	78.6		7.1			

As indicated in item 1 of Table 15, majority of the respondents 132 (75.6%) trainees, 38 (65.5%) trainers and 13 (92.9%) academic staff disagree on the relationships between theory and practice in competency program being highly integrated. Similarly the statistical data result showed that the integration between theory and practice is poor, as the average mean value (2.49) is less than the expected mean value (3.00). These results indicate that the learning process is not supported by practical work .Therefore Foster (1990) and Norton (1987) noted that one of the challenges schools face with CBT is, effectively integrating theory and practice and the critical component of the CBT program is to enable trainees to integrate skill with practice. This helps them to apply and transform knowledge in different work place situations.

Regarding Table 15 item 2, majority of the respondents 92(49.0%) trainees, 41(70.7%) trainers and 14(100%) academic staff disagreed on employers, supervisors are aware of the tasks they can realistically expect learners to perform in the work please learning.Similarly the statistical data result showed that the average mean value of (2.31) less than the expected mean value (3).This implies that some employers and industries supervisors have knowledge gap in the understanding of learners.

Similarly, Table 15 item 3, majority of the respondent100 (56.4%) trainees, 44(75.9%) trainers and 13(92.9%) academic staff disagreed onTrainers and work shop masters are familiarly with the equipment's and machineries.The result indicates that some trainers have

skill gaps in the operation and manipulating few equipment or machines. But it is impossible to conclude from the percentage of the respondent. Trainers and teaching staff hold appropriate industrial and qualification and familiar with CBT Training materials. Trainees be confident and understand the required teaching materials

Regarding to item 4 in the same table, majority of respondent 88(46.9%) trainees, 55(94.9%) trainers and 10(71.4%) academic staff disagreed on the teaching learning methods encouraging and motivating the learners to learn and achieving the required learning outcome in school and work place learning. Similarly, the statistical data result showed that the average mean value of (2.19) less than the expected mean value(3). This result indicates that teaching learning process not encourages and motivated students. With regarding this issues the teaching learning methods in CBT encouraging and motivating the learners to learn, efficient and flexible in use and accessible to all learners in terms of language, learning ability and physical ability to achieving the required learning outcome.

Regarding Table 15 item 5, majority of the respondent 148(78.7%) trainees, 51(87.9%) trainers and 8(12.1%) academic staff disagreed on Trainers link training plan with the work plan and also the statistical data result showed that the average mean value of (2.17) less than the expected mean value (3). this implies that there is some challenge in the application of the training plan. There for it is important that understand the program and the appropriate physical resources available, ensured that there is adequate time and also plan appropriate methodologies and system of delivery.

As shown in the same table, item 6, respondents were asked program complementation is based on satisfactory achievement of all the specified competencies with enough time. Majority of the respondent 157(83.5%) trainees, 51(87.9%) trainers and 13(92.9%) academic staff disagreed also the statistical data result showed that the average mean value of (2.13) less than the expected mean value (3). this implies that program completion is not accomplished with particular time. Regarding to this issue an interview was made with a Deans of the sampled colleges where the response are as follows “ sometimes program completion were not completed with particular time due to the supply of teaching and learning materials shortage ,trainers turn over and lack of the availability of cooperative training offering organization.” The department’s heads also said that” in addition to lack of adequate materials there is poor cooperative and emotional effort of trainers for the completion of the CBT program on time”.

Hence CBT emphasis on what a person can do in the work place as a result of completing a program of training all participants can master the required knowledge or skill, provided sufficient time and appropriate training methods are used.

#### 4.5. The Evaluation of the Performance of Trainees in School and Work place Learning

**Table 16: The Methods Employed to Assessed Trainees Based on the Occupational Standards and Unit of Competency**

Strongly disagree = 1, disagree = 2, undecided= 3, agree = 4 strongly agree =5

No	Item	Respondents		Scale with value					statistics	
				1	2	3	4	5	mean	Average mean
1	There are trainees progress charts in each of the work shops	Trainees	F	28	129	13	18		2.15	2.86
			%	14.9	68.6	6.9	9.6			
		Trainer	F	3	17	1	37		3.24	
			%	5.2	29.3	1.7	63.8			
		Academic stuff	F	3	1	-	10		3.2	
			%	21.42	7.1		71.42			
2	Continues and detailed feedback is given to trainees on their progress in the working place	Trainees	F	42	88	13	32	7	2.67	2.26
			%	22.3	46.8	6.9	20.2	3.7		
		Trainer	F	19	33	2	4		1.84	
			%	32.7	56.89	3.44	6.89			
		Academic stuff	F	2	9	-	3		2.28	
			%	14.3	64.28		21.42			
3	The college evaluate the existing training process , learning resources against the facility standards	Trainees	F	34	120	11	18	5	2.14	2.39
			%	18.1	63.8	5.9	9.6	2.7		
		Trainer	F	1	41		16		2.53	
			%	1.7	70.7		27.6			
		Academic stuff	F	1	9	-	4		2,5	
			%	7.1	64.3		28.6			
4	Trainees rating reflect the level of competency achieved in each filled	Trainees	F	26	79	26	45	12	2.67	
			%	13.8	42.0	13.8	23.9	6.4		
		Trainer	F	2	22	1	33		3.12	
			%	3.45	37.9	1.72	56.9			
		Academic stuff	F	2	6	-	6		2.71	
			%	14.3	42.9		42.9			
5	Industries/enterprise facilitate training for trainees to learn based on the occupational standards and unit of competency	Trainees	F	28	118	23	12	7	2.21	2.04
			%	14.9	62.8	12.2	6.4	3.7		
		Trainer	F	15	39	1	3		1.86	
			%	25.9	67.2	1.7	5.2			
		Academic stuff	F	1	12	-	1		2.07	
			%	7.2	85.7		7.2			
6	Trainees are assessed during industries	Trainees	F	28	122	19	14	5	2.18	2.28
			%	14.9	64.9	10.1	7.4	2.7		
		Trainer	F	13	44		1		1.81	

	training based on the occupational standards and unit of competency		%	22.4	75.9		1.7			
		Academic staff	F	2	12	-	-	-	1.86	
			%	14.3	85.7					
7	Trainees records are properly kept and reflect there on progress	Trainees	F	19	92	22	26	9	2.65	303
			%	10.1	48.9	11.7	24.5	4.8		
		Trainer	F	4	12		28	4	2.89	
			%	6.89	20.68		48.27	6.89		
		Academic staff	F	2	2	-	6	4	3.57	
			%	14.28	14.28		50	28.57		
8	Assessment is continuous and incorporates variety of different activates and tasks with range of situations and contingencies	Trainees	F	22	109	22	31	3	2.44	2.66
			%	11.7	58.0	11.7	16.5	1.6		
		Trainer	F	7	28		23		2.67	
			%	12.1	48.3		39.7			
		Academic staff	F	2	6	-	6		2.71	
			%	14.3	42.9		42.9			

As indicated in Table 16 item1, majority of the respondents both 37(63.8%) trainers and 11(77.5%) academic staff agreed but 157(83.5%)trainees disagreed on There are trainees progress charts in each of the workshops.similarly, the average mean value2.26 indicate that which is less than the expected mean (3) showing the respondents rating were almost dis agreed. Therefore, during the observation, the student researcher as well observed that in most of work shop room there were trainees progressives chart but the chart were not updated which means not tell us about the current status of the trainees and not properly recorded day to day activity of the students few of the chart were properly recorded and clearly showed trainees progress.

Regarding Table 16 item 2, Continues and detailed feedback is given to trainees on their progress in the working placelearning; majority of respondents 52(89.59%) trainers, 11(78.58%) academic staff and 130(69.1%) trainees disagreed. Similarly, the average mean value2.86 indicate that which is less than the expected mean (3) showing the respondents rating were almost dis agreed. These results indicate that Continues and detailed feedback were not given to trainees on their progress during working place learning.Concerning this point Hager(1995) noted that assessment is best when it is continues and providing vital feedback necessary for improvement in the long skill learning process

Similarly, Table 16 item 3,The college evaluate the existing training process , learning resources against the facility standards, majority of respondents 154(81.9%) trainees, 42(72.4%) trainers and 10(71.4%) academic staff were disagreed. This result indict that the

concerned body not evaluate the training process regularly. Hence, successful implementation of a curriculum results from careful planning and evaluation .this processes address needs and resource request for carrying out intended action. According to Provus (1969.pp.252-253) evaluation models evaluating the existing training and learning resources against the facility standard .the facility standards will plan what are necessary for the delivery of training programmer in terms of work area, equipment needed, and physical spaces. The required standards for the development of skills and are derived from industry requirements for the particular occupation or job. Evaluate specific program process including trainees and staff activates, function and communication. If the processes are in adequate make the appropriate adjustment and the effect of the whole program is evaluated in terms of the original goals the information gained will assist decision makers about whether the program is worthwhile and should be continued as modified or terminated.

Regarding Table 16 item 4 majority of the respondent 105(15.8%) trainees, 24(75.9%) trainers and 8(57.2%) academic staff disagreed Trainees rating reflect the level of competency achieved in each filled. this results indicate that assessment of each occupational standard is not properly assed student performance. According to Endrizzi.L (2008), the objective of reflection is to engage learners and increases their interest to make a progress in addition to a accurately measuring them.

Regarding to item 5 in the same table majority of respondent 146(57.7%) trainees, 54(93.1%) trainers and 14(100%) academic staff disagreed on Industries/enterprise facilitate training for trainees based on the occupational standards and unit of competency. This implies that most of industries not follow occupational standards and unit of competency .There for, industries facilitators, assessors should trained to facilitate and assess students.

As shown in the same table item 6 respondents were asked Trainees are assessed during industries training based on the occupational standards and unit of competency. Majority of the respondents140(79.8%) trainees, 57(98.3%) trainers and 14(100%) academic staff disagreed. similarly the average mean indicate that 2.04 less than the expected mean3 showing the respondents rating were almost dis agreed.the results indict that work place learning performance of student not assessed based on the occupational standard and unit of competency. with regarding to this issue Grant,Get(1979) states that competence/based assessment is a form of assessment that is derived from a specification of a set of outcomes, that so clearly state both the outcome/general and specific that assessors ,student and industries can all make reasonably objective judgement with respect to student achievement

and noon achievement of these outcome and this certified student progress on the basis of demonstrate achievement. There for work places learning are better structured and view that trainees have a better attitude towards work and they know what to expect in real work situations also though industries working work together to the success of this program

With regarding to item 7 in the same table respondent rate indicate about Trainees records are properly kept and reflect there on progress. However, majority of the respondents 111 (59.0%) trainees, were disagreed although 44(31.9%) trainers 9(64.3%) academic staff were agreed. Similarly the average mean value 3.03 is greater than the expected mean value 3 showing the respondents rating were almost agreed. There for assessment records reflect all areas of performance knowledge, skills and attitude and records specifically clearly the competencies assessed and the degree of competence achieved.

As shown in the same table item 8, majority of the respondent 131(69.7%) trainees, 35(60.4%) trainers and 8(57.2%) academic staff disagree on assessment is continuous and incorporates variety of different activates and tasks with range of situations and contingencies. also the average mean value 2.26 less than the expected mean value 3 showing the respondents rating were almost dis agreed. This result show there is some challenges in the CBT assessment of trainees. Concerning this issue assessment process measures whether a learner is competent or not competent. Only two possibly outcome can be the result of the assessment process that is they are competent (they can perform what is stated in the standard) or they are not yet competent. They cannot perform yet what is stated in the standard.

With regarding to the above point Carenola (2013) noted that the assessment process uses the following approaches to ensure that much emphasis is placed on performance: a) observation: observing the learner while he/she is caring out the activity. b) Product: looking at something a learner has made or done c) questioning: asking the learner question that can be answered either verbally or in writing.

## CHAPTER FIVE

### 5. Summary, Conclusions and Recommendations

This chapter deals with the summary of the major findings, conclusions and the recommendations forwarded based on the findings.

#### 5.1. Summary

The aim of this study was to investigate the implementation of Competency Based Training program in selected TVET Colleges in Addis Ababa City administration. In order to achieve the purpose of this study, the following basic questions were raised:

1. What are the understanding, readiness and commitment of trainees, trainers, principals, TVET counselor and coordinators to implements CBT preprogram
2. Are the training materials, learning resource and infrastructures against the facility standards?
3. How do the training process link with the school based learning and the work place learning based on the occupational standards?
4. What are the methods employed to assess occupational standards and unit of competency standards?

The research design utilized, in this study, was descriptive survey method. The study was conducted using questionnaires, interviews, observation and document analysis as data gathering tools. All the tools were piloted and necessary changes were made before gathering the final data. Three categories of respondents were involved in the study. These were the concerned personnel from TVET colleges (such as Trainees, Trainers and Management and Academic staff officer), Industry supervisors, and Addis Ababa TVET agency officer. While, purposive sampling was used for the selection of fields of the study, simple random sampling was used for the selection of the respondents. The study was carried out in two government TVET colleges in Addis Ababa city Administration. Accordingly, 312 copies of questionnaire were distributed to the three categories of respondents in the training colleges. The anticipated number of the questionnaire returned was 257 (82.37%). With regard to interview, the respondents were Addis Ababa TVET agency Training experts, TVET Colleges deputy-dean (outcome-based training) and industry supervisors. Depending on the results of the analysis made, the following major findings were summarized to answer the basic questions as presented below and summarized as follows.

***5.1.1. Trainees Understanding, Willingness and Readiness in the Implementation of Competency Based Training from trainee's perspective***

- A. The majority respondents 89 (47.3%) of trainees were not fully oriented about the overall TVET strategies and competency based delivery system.
- B. The majority of the trainees 120 (63.9%) disagree with the fact that trainees being ready to acquire technical and vocational competence necessary to complete the objectives of their training program.
- C. Most respondents 166 (88.3%) indicated that opportunity not being given for trainees to choose a field of study on the basis of their interest.
- D. With regard to guidance and counsellor majority of the respondents 159 (84.6) disagree on the fact that there are guidance and counsellor whom they consult for industries training and school based learning.
- E. Regarding to trainees placement in workplace learning, majority of the respondents 144 (76.6%) disagree on the assignment of the trainees on the right work position during industries training.

***5.1.2. Trainees Understanding, Willingness and Readiness in the Implementation of CBT Program from Trainers and Academic Staffs' Perspectives***

- A. The majority respondents 33 (56.9%) of trainers and 7 (50.0%) academic staff disagree on trainees having enough orientation about the overall TVET strategies and CBT system. Similarly, the average mean were 2.91 which is less than the expected mean (3.00). This indicates that there were not enough orientation for the trainees on the overall TVET strategies and CBT program.
- B. The majority of the respondent disagrees with trainees' readiness to acquire technical and vocational competence necessary to complete the objectives of their training program. Both respondents result showed that trainees have lack of work readiness.
- C. Majority of respondents disagree on opportunity being given to trainees to choose a field of study on the basis of their interest. This implies that most of the trainees lose their interest and readiness in learning.

D. The majority of the respondent disagrees on the assignment of the trainees on the right work position during industries training.

### ***5.1.3. Trainers and Academic Staffs Understanding, Readiness and Willingness' in the Implementation of Competency Based Training Program***

A. The majority of the respondents 49 (84.5%) of trainers and 13(92.9%) of academic staff were disagree on Trainer having enough information about the competency based training program (CBT).

B. The majority of the respondent disagrees on the academic staffs having knowledge and readiness to put into action CBT.

C. The majority of respondents 35(60.3%) of trainers and 12(80.3%) of academic staff disagree on teaching staff having proper information in order to fulfil their role and their willingness to apply.

### ***5.1.4. Industries Understanding, Readiness and Willingness' in the Implementation of Competency Based Training Program***

A. The majority of respondents 143(76%) trainees, 54(93.1%) trainers and 12(85.7%) of academic staff disagree on industries being well informed about the Competency Based Training program delivery system.

B. The majority of the trainees, trainers and academic staffs disagree on most industries willingness to accept trainees for the application of CBT program.

### ***5.1.5. Training materials, learning resource and Infrastructure and Facilities***

A. With regard to sufficient supply of teaching and learning materials on time and the materials being up to date , relevant and sufficient, the majority of respondents 138 (73.5%) trainees, 52(89.7%) trainers and 13( 92.9%) academic staff were rated disagree. There was no sufficient supply of teaching learning materials on time.

B. The majority of the respondents 159 (84.9%) trainees, 52 (89.7%) trainers and 13 (92.9%) academic staff disagree regarding industries' arrangement and provision of facilities and supervision to instruct the trainees as specified in the training plan.

- C. The majority respondents showed that 125 (66.5%) of trainees, 34 (58.6%) of trainers, 9 (64.24%) of academic staff disagree on adequate materials and equipment availability in the institution.
- D. Regarding sufficient learning and workshop rooms in TVET Colleges, the majority respondents 116 (61.8%) of trainees, 45 (77.58%) of trainers, 8 (57.1%) of academic staffs replied that there were no sufficient training and workshop room in the colleges.
- E. The majority respondents, 119 (63.3%) of trainees and 31 (53.4%) of trainers disagree with the adequate accessibility of computers, library and books but 11(78.6%) of academic staffs agree. The statistical data result, on the other hand, shows that the average mean value of (2.76) being less than the expected mean value (3). This indicates that there were not adequate book, library and access of computer.
- F. Regarding the material and machineries most of them are out of use and damaged. The majority of the respondent 116 (61%) trainees and 45 (78.5) trainers agree but 10 (57.2%) of academic staff responded dis agree with the regarding issues. In addition, the statistical data result showed that the average mean value (3.19) being greater than the expected mean (3.00). This implies some of materials and machineries were damaged and need repairmen's.
- G. The majority of the respondents 121 (64.34%) trainees and 40 (69.1%) disagree on the availability of appropriate guide lines such as occupational standard and unit of competency for CBT training in their college while, 11 (78.6%) of academic staff agree with the regarding issue. The statistical data result showed that the average mean value (2.72) is less than the expected mean (3.00) which indicates that unavailability of appropriate guide lines.

#### ***5.1.6. The Training Process Linking the School Based Learning and the Work Place Learning Based on the Occupational Standards***

- A. Majority of the respondents, 135 (71.6%) trainees, 31 (53.4%) trainers and 10 (71.4%) academic staff disagree on appropriate information being given for trainees about the training during work place training.

- B. With regard to continues and detailed feedback being given to trainees on their progress during school based learning, the majority of respondents 130 (69.1%) trainees, 39 (67.4%) trainers and 11 (78.6%) academic staff disagree.
- C. The majority of the respondents, 138 (73.4%) trainees, 52 (89.7%) trainers and 10 (71.4%) academic staff disagree on trainees being assigned on the right work position during in company training.
- D. The majority of the respondents, 124 (64.9%) trainees and 11 (78.6%) academic staff disagree whereas 42(72.4%) trainers agree on verity of teaching methods and teaching aides being utilized by trainers.
- E. The majority of the respondents, 132 (75.6%) trainees, 38 (65.5%) trainers and 13 (92.9%) academic staff disagree on the relationships between theory and practice in competency program being highly integrated. Similarly the statistical data result showed that the integration is very low, as the average means value (2.49) is less than the expected mean value (3.00).
- F. With Regard to the skill of trainers, majority of the respondents, 100 (56.4%) trainees, 44 (75.9%) trainers and 13 (92.9%) academic staff disagree on trainers and work shop masters being familiarly with the equipment and machineries. The result indicates that some trainers have skill gaps in the operation and manipulation of some of the machines.
- G. The majority of respondents, 88 (46.9%) trainees, 55 (94.9%) trainers and 10 (71.4%) academic staff disagree on the teaching/ learning methods encouragement and motivation of the learners to achieve the required learning out come in school and work place learning
- H. The majority of the respondents, 157 (83.5%) trainees, 51 (87.9%) trainers and 13 (92.9%) academic staffs disagree on program complementation is based on satisfactory achievement of all the specified competencies with enough time.

#### ***5.1.7. Competency-Based Mode of Training***

A. The majority of respondents indicate that CBT mode of delivery methods were not applicable adequately. Therefore, mastery learning, which is the principle that all participants can master the required knowledge or skill, provided sufficient time and appropriate training methodology, is not being applied.

### ***5.1.8. The Methods Employed to Assess Trainees Based on the Occupational Standards and Unit of Competency.***

- A. The majority of the respondents, both 37 (63.8%) trainers and 11 (77.5%) academic staff agree but 157 (83.5%) trainees disagree on the availability of trainees' progress charts in each of the workshops. Similarly, the average mean value (2.26), which is less than the expected mean (3.00), indicates that the respondents rating disagree.
- B. With Regard to continues and detailed feedback being given to trainees on their progress in the working place learning, the majority of respondents, 52 (89.59%) trainers, 11 (78.58%) academic staff and 130 (69.1%) trainees disagreed.
- C. The majority of respondents, 154 (81.9%) trainees, 42 (72.4%) trainers and 10 (71.4%) academic staff disagree on the evaluation of the existing training process and learning resources against the facility standards evaluated by TVET College of concerned body.
- D. Regarding trainees assessment during industry training based on the occupational standards and unit of competency, majority of the respondents, 140 (79.8%) trainees, 57 (98.3%) trainers and 14 (100%) academic staff disagreed.
- E. The majority of the respondents, 131 (69.7%) trainees, 35 (60.4%) trainers and 8 (57.2%) academic staff disagree on assessment being continuous and incorporation of variety of activities and tasks with range of situations and contingencies.

## **5.2. Conclusions**

Based on the above major findings of the study, the following conclusions were drawn. Though the existence of professional quality teaching staffs and academic staffs were one of the most important requirements for training programs to get competent, skill full middle level technician, majority of the stakeholders (trainers, trainees, academic staff officer, industries managers) the understanding and readiness to implement CBT in the selected TVET colleges had lack of knowledge and skills due to the absence of training, workshops and seminars related to the program.

With regard to industries, the study concluded that the industries and private institutions in the involvement and design of a new curriculum in TVET were low. This influenced the TVET colleges to identify the emerging skill areas, design appropriate courses that were in-line with the industry's demands and to integrate school based and work place learning.

Likewise, the industry professionals recognized that a link between them and the TVET institutions were existed but only a few numbers saw this relationship as strong. The study concluded that there was a prevalent lack of effective linkages with the industries and the institutions in the sampled colleges. Moreover, the training program of the selected TVTE colleges suffered from incompetency of the stakeholders in implementation of CBT implying that trainees couldn't acquire the required competency on the occupational standard and units of competency.

The other factor that makes the implementation of CBT programs difficult was the provision of inadequate learning infrastructure. The CBT offering TVET colleges were under expected, there were inadequate training materials, workshop layout, equipment tools and technologies. As the study revealed and concluded that CBT delivery system was not implemented as intended in the sample selected colleges and the TVET colleges have shortage of adequate training materials, tools and technologies that were relevant to the courses, updated books and journals, and workshop layouts.

Based on the above mentioned short comes (lack of appropriate training materials, knowledgeable stakeholders, inappropriate follow up in-company training, lack of labor market information, unavailability of institution that supports trainees in work place learning, process of organizing the trainees to acquire occupational standards and memorandum agreement to the organization) the objectives of CBT implementation program could not be accomplished.

### **5.3. Recommendations**

Depending on the above findings, the research offers the following recommendations to improve the implementation of Competency Based Training at sampled TVET colleges in Addis Ababa.

1. The TVET colleges and TVET agency should provide an appropriate training and information about the training program for all stake holders (trainers, trainees, academic staff, and industries). This means that, for the effective implementation of the program, all the key implementer of the CBT program need to be aware of the main elements of CBT, There for, How the program operates ,their roles and responsibilities, the occupational standards and unit of competency and how and when competencies will be assessed.

2. TVET agency developing a good Capacity building strategy so that the CBT program can be implemented.
3. Evaluating and facilitating the supply of adequate training equipment, updated reference material, equipment and layout of workshop and technologies that are relevant to the respective course. These are important to enable the trainees attain the desired skill of the program but it was found that the sampled TVET colleges lack this requirement. Therefore, conducting strong supervision and creating a mechanism in which these colleges can follow CBT guideline may help to offer the training of the required quality.

In general, the improvement on learning infrastructure included the following concerns:

- Increase in the provision of adequate and appropriate equipment
  - Strong professional leadership capacity should come with the delivery of the quality TVET
  - Increased and more effective teacher training
  - Skills development through skill fairs and contests
  - Upgrade of existing TVET infrastructure
4. TVET Colleges should design experience sharing program with companies or service giving sector to solve the problems of lack of industries experience of trainers.
  5. The TVET colleges should create close relationship with cooperative training providing organizations. It is necessary to inform and motivate organizations offering cooperative training strongly to have the awareness of the mutual benefits derived from on-the-job training by the establishment of promotion system among stakeholders. Hence the facilitation of seminars or workshops at the national and sub-city levels and using different broadcasts and printed media should be an imminent task of TVET agency, colleges and sub-city TVET bureaus.
  6. Monitoring training process should be taken in TVET colleges by leaders and in industries by top managers. The existing training and learning resources against the facility standard should be evaluated. The facility standards should be plan in such a way that what are necessary for the delivery of the training program in terms of work area, equipment needed physical spaces.

7. TVET colleges should evaluate the specific program process including trainees' and staffs' activities, function and communication. If the processes are in adequate, they need to make the appropriate adjustment and the effect of the whole program is evaluated in terms of the original goals. The information gained will assist decision makers about whether the program is worthwhile and should be continued as modified or terminated.
8. TVET colleges should integrate school based leaning with work place learning based on the occupational standard.
9. Assessment methods should be based on the occupational standard and unit of competency which clearly state both the outcome/general and specific that assessors, student and industries can all make reasonably objective judgement with respect to student achievement and noon achievement of these outcome and certified student progress on the basis of demonstrate achievement.
10. Vocational Guidance and Counsellor should provide sufficient orientation for the trainees about TVET program and continuing counselling service should be given when trainees face personal, vocational and social problem in their day to day performance in the TVET colleges and in work place learning. To improve the counselling service, adequate number and professionally competent vocational guidance and counsellors should be assigned.
11. Sufficient orientation about the training fields should be given for the students before joining the TVET institution by the counsellors and trainers and also opportunities so as to choose a field of study on the basis of their interest.
12. TVET agency should be allocated sufficient budget to provide adequate training. In addition to allocating budget TVET College's should be utilized properly and the process of purchasing training materials should be improved.
13. TVET colleges build Good relationships between central and local actors and resource support and training by working to gather, share ideas, jointly solve problems and cooperatively create materials to support.
14. TVET colleges should create an access to monitor, evaluate and problem-cope the implementation of competency based training for the creation of skill full, knowledgeable and competent middle level worker.

15. TVET colleges should create a good working atmosphere and good working relationships among trainers and academic staffs, both groups need to be willing to take the responsibility, while, Educational leaders should coordinate the interrelationships of educational environments and increasing interest and excitement for the program. In addition, government motivate trainers to assume new roles, be responsible and encourage them to consider themselves as play write, producers, and actors in new “educational plays”.



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# Appendix

## **Appendix- A**

Addis Ababa University

School of Graduate studies

Unit of Management of Vocational Education

College of Education and Behavioural Studies

### **Questionnaire for Academic staff/Councillor, Program Coordinator and Department Heads**

The purpose of the questionnaire is to gather information on the implementation of competency based training (CBT) program in TVET Colleges in Addis Ababa City administration. Thus, your frank and sincere response to the items in the questionnaire helps to meet the objective of the study. Be sure that the information you provide will be kept confidential and used only for the academic purpose.

I strongly believe that your input is very important to this study, hence, I kindly requests to answer all the questions (without skipping).

The study is meant for impartial fulfilment of Masters of Art Degree in Management of Vocational Education.

General Direction: you are kindly to follow the direction

1. Writing your name is not required
2. put '√' mark wherever are alternatives
3. Write your opinion briefly for the open ended questions.

**Thank you for your cooperation!**

I. Background of the Respondent

Name of collage \_\_\_\_\_

1. Your Specialization: \_\_\_\_\_

2. Level of qualification    A. Diploma  B. Degree  C. MA/MS   
and above

3. Sex    A. Male                       B. Female

4. Experience in years    A. Below 5     B. 5 to 10  C. 11 to 15   
D. above 15

5. Age    A. 20-30     B. 30-40     C. Above 40

II. In this part of the questioner put a tick mark under the number which indicates the level of your agreement/ disagreement.

Please read each statement carefully and choose the answer that corresponds best to your opinion and put a tick (✓) mark in only one space provided for each question from the given options in the below table based on your level of agreement or disagreement. Use the following rating scale to show your agreement or disagreement

The options represent

- Put a tick mark in column "5" if you are strongly agree.
- Put a tick mark in column "4" if you are agree.
- Put a tick mark in column "3" if you are neutral.
- Put a tick mark in column "2" if you are disagree.
- Put a tick mark in column "1" if you are strongly disagree.

1= strongly disagree    2= disagree    3= undecided    4= agree    5= strongly agree

Please put a tick (✓) mark in only one space provided for each question from the given options in the below table based on your level of agreement or disagreement.

## The options represent

Strongly disagree = 1, disagree = 2, undecided= 3, agree = 4 strongly agree =5

NO	Questions	Measuring scale				
		1	2	3	4	5
1	Trainees have enough orientation about the overall TVET strategies and competency based training system (CBT)					
	1.1 Enough Orientation is given about market demand Occupations					
	1.2 Enough Orientation is given about occupational standards in each field of occupation					
	1.3 Enough Orientation is given about the learners on competency based training delivery system					
	1.4 There are lack of adequate Orientation from the concerned body about the requirement of the relevant training guideline					
2	Trainees are ready to acquire technical and vocational competency necessary to complete the objectives of their training program					
3	opportunities is given to trainees so as to choose a field of study on the basis of their interest					
4	Trainees have adequate information about the competency based training(CBT)					
5	Most of the time trainees assigned on the right work position during industries Training					
6	TVET College provide training for academic staff about the competency based program					
	6.1 Training is given about the overall TVET strategies and competency based training system					
	6.2 Training is given about market demand Occupations					
	6.3 Training is given about occupational standards in each field of occupation					
	6.4 Training is given about competency based training delivery system					
	6.5 training is given about teaching methodology requirements in the relevant training guidelines					
7	Academic staffs have knowledge and readiness to apply the CBT program					
8	Staff has access to most of instructional delivery materials					
9	Teaching staff hold appropriate industry and teacher qualification					
10	Teaching staff have proper information in order to fulfill their role					
11	Industries are well informed about CBT training					
12	Most industries are willing to accept trainees for CBT training					
13	Training is given for industries supervisor about the overall TVET strategies and competency based training system(CBT)					
14	Industries and companies have knowledge of the implementation of CBT during work places learning training					
15	Supply of teaching and learning materials are on time, and the materials are up to date and relevant					
16	industries arrange and provide the facilities ,range of work and supervision to instruct the trainee as specified in the training plan					
17	There are adequate materials, equipment are available in the institution					
18	There are sufficient learning and workshop rooms in TVET college					
19	The accessibility of computers, library and books in the college very high					
20	There are necessary materials and machineries for training process and practices which is well-matched with the course					

21	The materials and machineries most of them are out of used and damaged					
22	There are appropriate guide line such as occupational standard and unit of competency for CBT training in my college					
23	The working environments of the college is conducive for the work place and work experience opportunities					
24	There are sufficient materials in CBT training offering organizations					
25	There are an appropriate information given for trainees about the training during work place training					
26	Trainees are provided with occupational standards and unit of competency guide line in school and work places learning					
27	Continues and detailed feed back is given to trainees on their progress during school and work place earning					
28	Trainees have sufficient information before they begin studying a particular module or units of competency					
29	Trainees assigned on the right work position during in company training					
30	The teaching learning process allows each learner to have the opportunity to develop and evaluated on the competencies achieved					
31	TVET colleges integrating the CBT program in to the trainees over all educational and training program					
32	There are memorandum of agreement between industries and colleges					
33	Trainers used verity of teaching methods and teaching aides					
	33.1 Competency based mode of training delivery					
	33.2 action Demonstration					
	33.3 Laboratory work					
	33.4 Group Discussion					
	33.5 Simulation practices					
	33.6 Computer based learning					
	33.7 Self-paced learning					
	33.8 Practical training in group and individual in workshop same like on- the- job					
	33.9 In-company training /cooperative training / based on each competency					
34	The relationship between theory and practice in CBT program highly integrated					
35	Employers, supervisors are aware of the tasks they can realistically expect learners to perform in the work please learning					
36	Trainers and work shop masters are familiarly with the equipment and machineries					
37	The teaching learning methods encouraging and motivating the learners to learn and achieving the required learning out come in school and work place learning					
38	Trainers link training plan with the work plan					
39	Program complementation is based on satisfactory achievement of all specified competencies with enough time					
40	There is progress charts in each of the workshops					
41	Continues and detailed feedback is given to trainees on their progress in the work place					
42	The college evaluate the existing training and learning resources against the facility standards					
43	Trainees rating reflect the level of competency achieved in each filled					
44	Industries/enterprise facilitate training for trainees to learn based on occupational standards and unit of competency					
45	Trainees are assessed during industries training based on the OS and unit of competency					
46	Trainees records are properly kept and reflect there on progress					
47	Assessment is continuous and incorporates a variety of different activates and tasks with range of situations and contingencies					



## **Appendix- C**

Addis Ababa University

School of Graduate studies

Unit of Management of Vocational Education

College of Education and Behavioural Studies

### **Questionnaire for Trainees**

The purpose of the questionnaire is to gather information on the implementation of competency based training (CBT) program in TVET Colleges in Addis Ababa City administration. Thus, your frank and sincere response to the items in the questionnaire helps to meet the objective of the study. Be sure that the information you provide will be kept confidential and used only for the academic purpose.

I strongly believe that your input is very important to this study, hence, I kindly requests to answer all the questions (without skipping).

The study is meant for impartial fulfilment of Masters of Art Degree in Management of Vocational Education.

General Direction: you are kindly to follow the direction

Writing your name is not required

put '√' mark wherever are alternatives

Write your opinion briefly for the open ended questions.

**Thank you for your cooperation!**

## I. Background of the Respondent

Name of collage \_\_\_\_\_

1. Your department : \_\_\_\_\_
2. Level A. I  B. II  C. III  D. IV  E. V
3. Sex A. Male  B. Female
4. Age A. below 16  B. 16- 21  C. 21-26  D. Above 26

II. In this part of the questioner put “mark under the number which indicates the level of your agreement/ disagreement.

Please read each statement carefully and choose the answer that corresponds best to your opinion and put a tick (✓) mark in only one space provided for each question from the given options in the below table based on your level of agreement or disagreement. Use the following rating scale to show your agreement or disagreement

The options represent

- Put “✓” mark in column “5” if you are strongly agree.
- Put “✓” mark in column “4” if you are agree.
- Put “✓” mark in column “3” if you are neutral.
- Put “✓” mark in column “2” if you are disagree.
- Put “✓” mark in column “1” if you are strongly disagree.

1= strongly disagree      2= disagree      3= undecided      4= agree      5= strongly agree

NO	Questions	Measuring scale				
		1	2	3	4	5
1	Trainees have enough orientation about the overall TVET strategies and competency based training system (CBT)					
	1.1 Enough Orientation is given about market demand Occupations					
	1.2 Enough Orientation is given about occupational standards in each field of occupation					
	1.3 Enough Orientation is given about the learners on competency based training delivery system					
	1.4 There are lack of adequate Orientation from the concerned body about the requirement of the relevant training guideline					
2	Adequate orientation is given for the trainees on the legal and ethical responsibilities					
3	Trainer are ready to acquire technical and vocational competence necessary to complete the objectives of their training program					
4	opportunities is given to trainees so as to choose a field of study on the basis of their interest					
5	Trainees have adequate information about the competency based training(CBT)					
6	I travelled far to reach to the industry where I get a training					
7	I have guidance and counsellor whom I consult for industries training					
8	Most of the time trainees assigned on the right work position during industries Training					
9	Industries are well informed about competency based training (CBT)program					
10	Most industries are willing to accept trainees for competency based training(CBT)					
11	Trainees acquire technical and vocational competences necessary to complete the objectives of their training program					
12	Industries and companies have knowledge of the implementation of competency based training (CBT)program during work places learning training					
13	industries arrange and provide the facilities ,range of work and supervision to instruct the trainee as specified in the training plan					
14	Supply of teaching and learning materials are on time, and the materials are up to date and relevant					
15	There are adequate materials, equipment are available in the institution					
16	There are sufficient learning and workshop rooms in TVET college					
17	The accessibility of computers, library and books in the college very high					
18	There are necessary materials and machineries for training process and practices which is well-matched with the course					
19	The materials and machineries most of them are out of used and damaged					
20	There are appropriate guide line such as occupational standard and unit of competency for competency based training (CBT)program in my college					
21	The working environments of the college is conducive for the work place and work experience opportunities					
22	There are sufficient materials in competency based training (CBT)program offering organizations					
23	There are an appropriate information given for trainees about the training during work place training					

24	Trainees are provided with occupational standards and unit of competency guide line in school and work places learning					
25	Continues and detailed feedback is given to trainees on their progress during school and work place earning					
26	Trainees have sufficient information before they begin studying a particular module or units of competency					
27	Trainees assigned on the right work position during in company training					
28	The program allows each learner to have the opportunity to develop and evaluated on the competencies achieved					
29	TVET colleges integrating the competency based training program( CBT ) program in to the trainees over all educational and training program					
30	There are memorandum of agreement between industries and colleges					
31	Trainers used verity of teaching methods and teaching aides					
	31.1Competency based mode of training delivery					
	31.2 action Demonstration					
	31.3 Laboratory work					
	31.4 Discussion					
	31.5 Simulation activities					
	31.6 Computer based learning					
	31.7Self paced learning					
	31.8 Practical training in group and individual in workshop same like on- the- job					
	31.9 In-company training /cooperative training / based on each competency					
32	The relationship between theory and practice in competency based training (CBT) program highly integrated					
33	Employers, supervisors are aware of the tasks they can realistically expect learners to perform in the work please learning.					
34	Trainers and work shop masters are familiarly with the equipment and machineries					
35	The teaching learning methods encouraging and motivating the learners to learn and achieving the required learning out come in school and work place learning					
36	Trainer link training plan with the work					
37	Program complementation is based on satisfactory achievement of all specified competencies with enough time					
38	Continues and detailed feedback is given to trainees on their progress					
39	There are progress charts in each of the workshops in the work place					
40	The college evaluate the existing training and learning resources against the facility standards					
41	Trainees rating reflect the level of competency achieved					
42	Industries/enterprise facilitates training for trainees to learn based on the occupational standards and unit of competency.					
43	Trainees are assessed during industries training based on the OS and unit of competency					
44	Trainees records are properly kept and reflect there on progress					
45	Assessment is continuous and incorporates a variety of different activates and tasks with range of situations and contingencies					

III Please write your opinion for the following questions!

1. What are the major problems / challenges trainees face in the implementation of CBT program in TVET Colleges

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2. What could be the possible solutions to the above mentioned problems?

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3 How industries interact with the college during the implementation of competency based training (CBT) program?

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## **Appendix- D**

Addis Ababa University

School of Graduate studies

Unit of Management of Vocational Education

College of Education and Behavioural Studies

### **Interview questions for TVET College Deans.**

General Information \_\_\_\_\_

Name of collage \_\_\_\_\_

Job position: \_\_\_\_\_

Service year with the current position:

Qualification:

I open- Ended Questions

1. Are you familiar with the CBT program/ what information and supports you have?
2. How is the TVET training program going on in your college?
3. What challenges do you have in the implementation of competency based training program during training students in inside and outside the classroom?
4. How do you solve this problem?
5. What challenges do you have in training students in the practical training of the CBT?
6. How do you solve this problem?
7. How you implementing CBT program in collaboration with CBT offering organizations?
8. What problems did you face during the implementation process of the CBT program in the industries?
9. How did you solve the problem?
10. Are teacher familiar with competency –based education and training methodologies?
11. How to Monitoring, evaluation and problem- coping of the CBT program?
12. Are teaching staff prepared for the shift to competency based education or do they view the change from a caution, hostile or defensive perspective?

## Appendix- E

Addis Ababa University

Graduate School of Education and Behavioural Studies

Management of Vocational Education Department

### Observation and document analysis checklist for competency based training at classroom, workshop, and laboratory

I. General

1. Training course (being observed) \_\_\_\_\_

2. No. of trainees in the class/workshop:

Male \_\_\_\_\_ Female \_\_\_\_\_ Total \_\_\_\_\_

3. Seats/training arrangement

\_\_\_\_\_

II. Details in classroom/workshop/ laboratory instruction: Tick Y(Yes), if the appropriate activity is observed or demonstrated or tick N(No), if it is not observed

Items	Y	N	Remark
I. Classroom/ Workshop/ Laboratory			
Is classroom /workshop/ laboratory suitable in terms of seating, heating, lighting, availability of training resources, etc?			
II. The instructional process			
Does the instructor:			
Make sure that trainees know what is expected of them by way of preparation?			
Arrange classroom/ workshop/ laboratory as per training requirement?			
Encourage all trainees in individual and group work in outcome-based training?			
Intervene in the trainees work appropriately to encourage the progress, to take corrective measures task performance			

III. The availability and degree of sufficiency of the following training equipment and materials.

No.	Training materials and equipment	Sufficient	Insufficient	Not available at all
1	Allen wrench sets (standard and metric)			
2	Combination wrenches (3/8 - 1")			
3	5-piece punch and chisel set			
4	8mm - 22mm combination wrench set			
5	3 flat screwdrivers - 4", 6", 8"			
6	4 Phillips screwdrivers - #2 stubby, #2 regular, #1 regular, #3 regular			
7	1 1/2 lb. or heavier ball peen hammer			
8	Fluorescent drop light with 25' cord - 3 prong plug			
9	Blow gun with rubber tip and male coupler (NAPA 90-618, or equivalent)			
10	Tire chuck with male coupler (NAPA 90-618, or equivalent)			
11	fender cover			
12	Slip lock-type pliers (5-6 positions)			
13	Needle nose pliers			
14	10" vise grips			
15	12' measuring tape			
16	Set drill bits by 1/64 increments to 1/2"			
17	Diagonal pliers (side cutters)			
18	Telescoping inspection mirror			
19	Safety shoes (steel toes - no sneakers)			
20	Safety glasses (mirror items not allowed)			
21	Dial indicator and holding fixture			
22	3-piece pry bar set (max 36")			
23	Roll of shop towels			
24	Magnet with extendable rod			
25	1/2" Impact gun			
26	Soldering gun/soldering iron			
27	box of Nitrile disposable gloves			
28	Gasket scraper			
29	Razor scraper			
30	Hack saw and blades			
31	Small swivel oil filter wrench			
32	Large swivel oil filter wrench			
33	25' extension cord			
34	Hand operated vacuum pump			
35	Gasket scraper			
36	1/2" drive to 3/8" drive (reducer) adapter			
37	Power steering pulley installer & remover			
38	Compression gauge			
39	4.5" Grinder and grinding wheels			
40	Pick set			
41	13/16" & 5/8 spark plug sockets			
42	12-18" jumper wire (16 gauge minimum)			
43	Roll of black electrical tape			

44	Small tube resin solder			
45	12v test light (Power Probe III preferred)			
46	Sparkplug gaper			
47	Fuel pressure test kit			
48	DVOM capable of measuring amperage			
49	Combination stripper/crimper pliers			
50	Ignition Spark Tester			
51	Tip cleaner (torch)			
52	Welding goggles (shade 5)			
53	Spark lighter			
54	Tire tread depth gauge (1/32")			
55	Files: 1 round and 3 square files			
56	High cuff welding gloves			
57	Welder's helmet (shade 10 lens)			
58	Welding kit			

## Declaration

I, hereby, declare that this thesis is my original work and has not been presented in any other university. All the materials used in this thesis have been duly acknowledged.

Name: Bantalem Demelash

Signature. \_\_\_\_\_

Date \_\_\_\_\_

This thesis has been submitted for the examination with my approval as a university advisor.

Name: Woube Kassaye (PHD)

Signature. \_\_\_\_\_

Date of approval \_\_\_\_\_