Assessing the Practices of Technical and Vocational Education and Training Curriculum Design and Development in Ethiopia

by

YADESSA TOLOSSA WOYESSA

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DECLARATION

Name: Yadessa Tolossa Woyessa

Student number: 58552103

Degree: DOCTOR OF PHILOSOPHY IN EDUCATION

Assessing the Practices of Technical and Vocational Education and Training Curriculum Design and Development in Ethiopia

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KEY TERMS:

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ACRONYMS AND ABBREVIATIONS

ARS	Amhara Regional State
CoC	Center of Competency
DACUM	Developing A Curriculum
EGSECE	Ethiopian General Secondary Education Certificate Examination
ENQF	Ethiopian National Qualification Framework
EOS	Ethiopian Occupational Standard
EPRDF	Ethiopian People's Revolutionary Democratic Front
ETQF	Ethiopian TVET Qualification Framework
HoD	Head of Department
ILO	International Labour organization
ISCO	International Standard Classification of Occupations
LO	Learning outcome
MoE	Ministry of Education
MoU	Memorandum of Understanding
OS	Occupational Standard
ORS	Oromia Regional State
OTS	Occupational training Standard
SCID	Systematic Curriculum and Instructional Development
SD	Sustainable Development
SNNPRS	South Nations, Nationalities and Peoples Regional State
TRS	Tigray Regional State
TE	Technical Education
TTLM	Teaching, Training & Learning Materials
TVET	Technical and Vocational education and Training
VE	Vocational Education
VET	Vocational education & Training
UC	Unit of Competence
UNESCO	United Nations Education Science & Culture Organization

ABSTRACT

The general objective of the study was to assess the existing practices and major factors affecting the design and development of Ethiopian TVET curriculum and explore considerations to be taken to design and develop TVET curricula that befit Ethiopia. The purpose of the study was to explore and understand the meanings TVET practitioners and stakeholders of Ethiopian TVET programme credited to the practices of TVET curriculum design and development in Ethiopia. Hence, the study employed qualitative research approach in phenomenological design and was undertaken within the interpretive paradigm to understand the lived experience of the curriculum designers, developers and implementers in Ethiopia. Accordingly, three regional states of Ethiopia were selected and one government-run TVET college from each regional state, i.e. a total of three TVET Colleges were taken as sample representatives for the study using purposive and convenience sampling methods. The study was delimited to the practices of curriculum design and development of the building construction fields of study. This is because firstly, it is impossible to encompass all available TVET fields of training in the study; secondly, building construction technology sector is one of the those sectors which much focus is given to by the government of Ethiopia and thus is the training fields found in abundance in the country.

Two data gathering tools were mainly used to gather information in this study. These were interviews and document review. Therefore, the researcher first reviewed different related literature and strategic documents to understand the background of the problem and to see what has been done in reference to the problem. Accordingly, working and policy documents such as TVET strategies, guidelines, manuals, legislation, curriculum frameworks and guides, as well as Education Sector Development Programmes and other written documents and related literature to TVET curriculum design and development that were available at federal, regional and TVET college levels were reviewed and analysed. Other countries experiences visa-a-vis TVET curriculum design and development were also reviewed and used as sources of information.

The interviews were held with curriculum development officials at the Federal TVET Agency and sampled Regional TVET Agencies as well as principals, heads of department and trainers from sampled TVET colleges that were providing training in the fields of building construction works. The interview participants were two TVET curriculum development officials from Federal TVET Agency, three TVET curriculum development officials from three sampled regional TVET Agencies, three TVET college principals from three sampled TVET colleges, three heads of department of building construction work fields from three sampled TVET

colleges, and three trainers of building construction work fields from three sampled TVET colleges.

Accordingly, it could be investigated from the study that the way outcome based TVET system is perceived and eventually executed and the processes and steps that were followed in order to design and develop TVET curriculum in Ethiopia had impact on present TVET curriculum developed . Besides, the way other countries' experiences were espoused and adapted led to inappropriate curriculum design and development approach. Moreover, the Ethiopian TVET System following only one Curriculum development approach for designing and developing TVET curriculum for all trades, blue and white collar work-related-vocational education and training resulted in non-beneficial TVET curriculum. It was also noted from the study that the wrong perception of stakeholders' roles and responsibilities in curriculum development activities led to TVET curriculum development with improper training content selection and unfair training time allotment, which in greatly impact on the TVET curriculum implementation and training delivery.

Therefore, the study suggested that the curriculum that addresses individual, societal and employers' needs should be designed and the labour market demand analysis needs to be undertaken before OS mapping is designed. In doing so, it is recommended that Ethiopia should benchmark itself against best practices of various developed and developing countries which have succeeded in outcome-based TVET system and when TVET system is adopted from other countries, it should be with tangible reasons and justifications. Furthermore, it is recommended that attention should be paid to practical training programmes and a combination of practice and theory time should be provided for all course types. In addition, the environmental situation of the country and the degree of importance of each unit of competence for employment and self-employment need to be considered.

Key terms: Technical and Vocational Education and Training (TVET), TVET curriculum, TVET curriculum design and development.

CHAPTER ONE: INTRODUCTION

1.1 Background of the study

Technical and Vocational Education and Training (TVET) is defined as all forms and levels of the educational process involving general knowledge, the study of technologies and related sciences, and the acquisition of practical skills, expertise, attitudes and understanding relating to occupations in the various sectors of economic and social life (UNESCO, 2002: 7). Yusoof (2013: 27) also asserts that 'vocational education covers education and skill development at all levels from post primary to tertiary education – both through formal and non-formal programmes'. Sithole (2012: 9) expresses that the term vocational education historically has meant instruction designed to prepare individuals for the world of work and that it served to provide workers with agricultural, industrial and homemaking skills. TVET can also refer to deliberate interventions to bring about learning which would make people more productive (or simply adequately productive) in designated areas of economic activity e.g., economic sectors, occupations, specific work tasks (MoE, 2008: 14). All these definitions for TVET programmes highlight the importance of the acquisition of practical knowledge, skills and attitudes in any training and education offered by TVET providers.

TVET is important because a country cannot achieve economic and social development without a skilled, productive labour force that can meet the changing requirements of its environment (Zhao & Raune, 2014: 127). TVET can also be said to be important because it can offer better educational opportunities and passage for disadvantaged youths (Engelshoven, 2014: 6).Therefore, the main objective of TVET is to equip and train people with knowledge, expertise, skills, and competences required on the labour market. Yusoof (2013: 14) identified the following as general objectives of vocational education:

- To fulfil the national goals of development and the removal of unemployment and destitution;

- To impart education relevant to productivity, economic development and individual prosperity;
- To meet the needs of skilled and middle level man power for the growing sectors of economy, both organized and unorganised;
- To prepare students for self-reliance, gainful employability and self-employment; and
- To reduce mismatch between demand and supply of skilled workforce.

The objectives of TVET listed above by Yusoof show that TVET is a means of providing appropriate education to alleviate unemployment, to ensure individuals' employability and success to meet the demand of skilled workforce of a particular country. Curriculum plays a crucial role for implementing the objectives of TVET programme effectively. Wentling (1993:14 in Endalkachew, 2018: 2) defines vocational education curriculum as:

> A set of intended training that is planned and directed to attain the desired objectives. In technical and vocational education and training, curriculum should be tailored to the world of work. It should be carefully planned and implemented to satisfy the dynamic and complex labour market demand.

There are different types of TVET systems worldwide based on the types of curriculum design and development approaches followed. Curriculum design and development is a term used to describe the purposeful, deliberate, and systematic organisation of curriculum (instructional blocks) within a class or course. In other words, it is a way for teachers to plan instruction. According to Xu (2005), curriculum design refers to the confirmation of objectives and contents while curriculum development also incorporates the implementation and evaluation of curriculum (Zhao & Raune, 2014: 191). Input/content-based, process-based and outcome-based TVET systems are the major ones known. According to Rutayuga (2012: 13), technical and vocational institutions delivered input/content-based curricula with an emphasis on theory or knowledge; hence, they produce graduates who are not well-equipped with required skills to perform occupational roles efficiently. Rutayuga (2012: 13) further maintains that process-based TVET programmes are the programmes in which a trainee was expected to wait for a year to pass to next grade/level while in the outcome-based

TVET system, it helps a student be promoted to next level as soon as he/she becomes competent (passed competency assessment) in the courses he/she has already pursued. According to Kanyonga et.al. (2018: 11), outcome-based TVET curriculum is a learning material that emphasises on learner's gaining the necessary knowledge, skills, understanding and attitudes or values to work successful in their own profession or occupation. There are various philosophies and methodologies that can be used to develop TVET curriculum. The major differences existing among TVET curricula are their design and development practices. The objectives of the TVET programmes, the guiding principles and philosophies followed, who should develop the curriculum are among many others factors that affect the practices of outcome-based TVET curriculum in Ethiopia.

1.1.1 Historical background of TVET system in Ethiopia

TVET has a long history in Ethiopia. Prior to 1991, the TVET system in Ethiopia was following the school- based model of training which was centralised and an integral part of general education. The introduction of formal vocational education in the country dates back to 1942 when the first TVET School 'Ecole National des Artes Technique' (later named as Addis Ababa Technical School) was established in Addis Ababa (Ayele, 2010: 10). The Addis Ababa Technical School had been offering training in occupational areas like auto-mechanics, machine technology, building construction, surveying, drafting, electricity, radio technology, carpentry, economics, accounting, and secretarial management. As the demand for its graduates in the labour market increased, admission to the school was limited to those applicants who had at least completed the 8th grade. Eligible applicants were enrolled into the three-year training, known as 8+3 program, and they were awarded diplomas upon completion of TVET programme (Ayele, 2010: 10).

Over the years, Addis Ababa Technical School, (known as 'Tegbare-Id School', the first industrial and construction technical school in Ethiopia) underwent several changes in terms of the training offered, and their entry requirement and duration for the training programmes inter alia. The school used to offer the 8+4 programme from

1976 till 1980, 10+2 programme from 1980 till 1988, and 10+3 programme from 1988 till 2008.

The 8+4 TVET system was a school programme in which students could join TVET programme after completing Grade 8 academic classes and sat for the Grade 8 National Certificate Examinations and passed the exam. Students who scored best results from this examination could get the chance to join the TVET programme which stays for four years to obtain a TVET diploma. Those students who passed the Grade 8 National Certificate Examination but could not get the chance to join TVET could pursue their secondary academic education programmes which went from Grade 9 to 12. The 10+2 TVET system, a TVET programme in which students who completed Grade 10 could join and stay for two years in TVET school to get their diploma. Applicants from many parts of the country with the best academic achievements in their Grade 10 schooling competed for admission to the then prestigious school (Ayele, 2010: 10).

During the fall of the Revolutionary Dergue Regime (1991), about 15 similar TVET colleges offered diploma in technology and business fields in Ethiopia. Apart from the Addis Ababa Technical College where the education and training had been offered only in the industrial and construction technology fields, the rest of colleges had been offering training in the business and textile field in addition to the industrial and construction technology fields. There were numerous tributary comprehensive schools in which students who joined TVET streams get prepared to join the TVET colleges. Students with best academic achievements during their stay in comprehensive schools could join TVET colleges to earn a diploma after pursuing their training in particular fields for two or three years. However, the rest of students remain at the comprehensive school and pursue their training for two years and earn high school completion certificate after sitting for National General Education Leaving Examination. Students who attained best results in the national examination were assigned to pursue the university study programmes.

Following the 1991 overthrow of the Revolutionary Dergue Regime and the Ethiopian People's Revolutionary Democratic Front came to power, the new Ethiopian Education and Training Policy was enacted. As stated in the New Education and Training Policy (1994), the Ethiopian educational system has three major levels. These are primary, secondary and tertiary. The primary level has two cycles. The first cycle consists of grades 1-4 and the second cycle consists of grades5-8.The secondary level also has two cycles having different goals. The first cycle (grades 9-10) is for general secondary education or for TVET areas. After completing Grade 10, students join TVET programmes or academic stream (college preparatory, i.e., grades 11&12) based on their performance in general secondary education. The others who plan to join tertiary level education are required to sit for placement examination after completing their two year preparatory programme. Starting from 2001/2002, the TVET programme came into practice according to the 1994 Education and Training Policy. Students who completed Grade 10 and were unable to continue academic learning were assigned in 10+1, 10+2, 10+3 (MoE, 2002: 2).

Following the 1994 Ethiopian New Education and Training Policy, the TVET sector was properly recognised as a vital tool for socio-economic development and as the main component in the educational system (MoE, 1994: 17; Ayele, 2010: 11). Government and private sector investments in the expansion of TVET have helped immensely to increase the number of TVET schools, teachers, as well as occupational training areas. Accordingly, the occupational training areas like information technology, health, tourism, culture, sports, inter alia with their specific training areas were made to be included in the TVET sector (MoE, 2008: 8).

Presently, Ethiopia has a '4+4+2+2' system of primary and secondary education, i.e., (four years of first cycle primary (grade 1-4), four years of second cycle primary (grade 5-8), two years of secondary (grade 9-10) and two years of a higher education preparatory schooling(grade 11-12). After completion of the two years of secondary schooling, students are expected to join either university preparatory education or TVET programme depending on the academic performance achieved in Grade 10 examination.

Since the launch of the 1994 Ethiopian New Education and Training Policy, Ethiopia experienced two fundamental TVET programme reforms vis-a-vis the TVET National Qualification Framework and Curriculum design and development. They were the "10+1+2+3" approach and the "Levelling I, II, III, IV and V" approach.

In "the 10+1+2+3" TVET programme approach, students entering TVET stream after completing grade 10, had three options open to them, depending on the score in the grade 10 national exam: one year training (10+1); two years training (10+2), or three years training (10+3). The students who attained 10+1 and 10+2 programmes could get certificate and the students who completed 10+3 programme could obtain diplomas in TVET and also could continue to higher education.

In the "Levelling I, II, III, IV and V" TVET programme approach, students entering TVET stream after completing Grade 10 have five options depending on the score obtained in the 10th grade national secondary school leaving exam for Level - I,II, III, IV or V TVET programmes and the student who has completed level - III and IV and passed the National Skills Competency Assessment and has served for two years could join higher education (MoE, 2008: 16). There is another stream of individuals that could go to TVET – those who could not get sufficiently high scores to go to university during the national exam at the end of Grade 12. In general, approximately 30% of students of those who reached 10thgrade would continue to higher education (Shaorshadze & Krishnan, 2013: 12). The rest of the students would either enrol in TVET, or leave the formal education system.

During the '10 +1+2+3' and 'the levelling' TVET approaches, TVET training was run under the auspices of the Ministry of Education and regional government education bureaus in consultation with the ministries of Agriculture, Health and other institutions including the private sector. Admission to the TVET programmes is mainly based on students' score in the Ethiopian General Secondary School Leaving Examination after completion of Grade 10. Based on their results, students that were made to select either a university preparatory programme or the TVET programmes. The preparatory programme (grade 11-12) admits those students who have successfully passed the

school leaving examination and are offered pre-university preparatory courses for entering to bachelor's degree programmes in the universities. The TVET programmes were designed for students who were unable to join the university preparation programme because of their lower school leaving examination at Grade 10 results or who were unable to attain the grade/scores that allow them for admission to preparatory program (Ayele, 2010: 11; Shaorshadze & Krishnan, 2013: 15). Students who joined TVET programme were outnumbered by the national enrolment capacity of the universities in the country.

1.1.2 Curriculum development and changes in Ethiopia since 2000

As Ethiopian TVET system has gone through various reforms and changes in terms of the trainings offered, entry level and duration of training programmes, inter alia, curriculum design is one of the core components of TVET that profoundly affect directly or indirectly the system (Engelshoven, 2014: 18; Shaorshadze & Krishnan, 2013; 17). On one hand, most of the TVET programme reforms and system changes in Ethiopia could have subsequently resulted in new curriculum designs. On the other hand, there is a possibility of the systems partly or fully being changed whenever the curriculum is newly designed and changed. As a result, various TVET curriculum design and development approaches were exercised in Ethiopia. Of these TVET curriculum design and development approaches, some of them were executed while some of them were designed and developed but became obsolete before they were implemented.

The following five TVET curriculum approaches were the major TVET curriculum designs and changes Ethiopia has experienced since 2000:

- The '10+1+2+3' TVET approach (2000-2010);
- The Developing A Curriculum (DACUM) approach (2005-2006);
- The Occupational Training Standard (OTS) approach (2006-2007);
- The Syllabus based approach (2004-2005);
- The Outcome/Competency based approach (2007 till now).

As could be noted from the above-listed TVET curriculum approaches, the duration of the occurrence of the approaches overlap each other. This is mainly because the new approach started to be implemented before the previous one became outdated. Indeed, though all the approaches were named outcome based TVET system, some of the curriculum changes were transformational and critical, while others were structural and a bit of modification and yet others were alteration or substitution.

Even though it is stated in some studies (Ayele, 2010: 11; Shaorshadze & Krishnan, 2013: 5), that the present TVET system in Ethiopia is 'fundamentally top-down and national command-driven', the Ethiopian TVET authorities are professing that it has been implementing the outcome-based TVET system throughout the country.

1.1.2.1 The '10+1+2+3' TVET approach (2000-2010)

Education and Training Policy (MoE, 1994: 17)describes the TVET approach as "Technical training that would be provided for those who complete grade ten for the development of middle level manpower." In the '10+1+2+3' TVET programme approach/system, a 10+1 TVET programme trainee can enter a TVET programme after completing Grade 10 and has to pursue his/her training for one year; and one who joined a 10+2 TVET programme has to complete a two-years course and the one who joined a 10+3 TVET programme has to stay for three years. Though little is known about its exact period because there is no documentation, and the government ordered training institutes to phase out the '10+1+2+3'programmeand gear to levelling TVET approach in about 2007, the '10+1+2+3' TVET Programme had existed from 2002 to 2010 (Demessew, 2012: 20). There is nothing documented regarding why the '10+1+2+3' approach was discontinued or disregarded. But the then TVET authority officials professed that the '10+1+2+3' approach was not outcome-based TVET system that Ethiopia demanded by then. Figure 1.1 below illustrates the course structure of one of the '10+1+2+3' training fields.

Occupational Title			Main courses	Supportive courses	Common courses	Activities
10+3	10+2	10+1				
Advanced Electronics Technician (4176 hrs)	*Electronics Technician (2784 hrs)*	*Assistant Electronics Technician (1392 hrs)*	**Year 1 Training Programme**			
			1. Job Title: Public Address System Technician **Course Title:** Installing & Repairing Public Address System 232 hrs **2. Job Title:** Radio & Audio Tape Recorder Technician **Course Title:** Repairing Radio & Audio Tape Recorder 268 hrs **3. Job Title:** Simple Digital Equipment Technician **Course Title:** Repairing Simple Digital Equipment 100 hrs	**1.** Technical Drawing 50 hrs	**1.** Maths 75 hrs **2.** English 75 hrs **3.** Civics 50 hrs **4.** Introduction to IT & Basic Application 50 hrs **5.** Entrepreneurship 80 hrs	**1.** Project works 100 hrs **2.**Apprenticeship 312 hrs
			Year 2 Training Programme			
			4. Job Title: Television Receiver Technician **Course Title:** Installing & Repairing Television Receiver 293 hrs **5. Job Title:** Satellite TVRO Technician **Course Title:** Satellite Television Receiver Installation, Operation & Maintenance 134 hrs **6. Job Title:** Video Cassette Recorder Technician **Course Title:** Video Cassette Recorder Repairing 183 hrs	**2.** Shop Organization & Management 40 hrs	**6.** Mathematics 75 hrs **7.** English 75 hrs **8.** Civics 50 hrs **9.** Introduction to computer networking 50 hrs **10.** Small Business Management 80 hrs	**3.** Project works 100 hrs **4.**Apprenticeship 312 hrs
			Year 3 Training Programme			
			7. Job Title: Electronic Office Machine Technician **Course Title:** Electronic Office Machines 328 hrs **8. Job Title:** Industrial Electronics Control system Technician **Course Title**: Industrial Electronics Control System 222 hrs	**3.** Electrical Machines 100 hrs	**11.** Maths 75 hrs **12.** English 75 hrs **13.** civics 50 hrs **14.** Introduction to Web Page Development 50 hrs **15.** Business growth strategy 80 hrs	**5.** Project works 100 hrs **6.**Apprenticeship 312 hrs

Figure 1.1 Course structure for Electronics technology in the '10+1+2+3' approach (Adapted from Year One, Year Two and Year Three TVET Curriculum Guide; Electronics Technology (MoE, 2003)

Figure 1.1 above indicates how the '10+1+2+3' TVET system was planned for 10grade completers. However, the general TVET system was by then categorised into three major levels. These levels were the basic level, the junior level and the middle level TVET programme. The basic level TVET programme was designed for those students who may drop out/fail to continue their regular schooling for various reasons before completing their primary schooling (grades 1-6). The junior level TVET programme was designed for those students who might drop out/fail to continue their regular academic schooling for various reasons before completing their junior secondary schooling (grades 7-10). The'10+1+2+3' TVET programme was designed for those 10^{th} grade completers. Figure 1.1 above illustrates what '10+1+2+3' structure looks like more in detail.

In the '10+1+2+3' TVET approach, the students, after completion of grade 10, are expected to be enrolled in any one of the three (10+1 or 10+2 or 10+3) grade-levels on the basis of their mark/ result of matriculation. As could be depicted in Figure 1.1 above, the course components were developed as such for each grade-levels at each level and the naming for 10+1 and 10+3 programme were prefixed as 'assistant' and 'advanced' respectively and without any prefix for 10+2.

1.1.2.2 The 'Developing A Curriculum' approach (2005-2006)

DACUM is an acronym for 'Developing A CurriculUM'. It is a system in which experts employed in a particular occupational area determine the curriculum content (Finch &Crunkilton 1999: 145). The DACUM development is an approach to job analysis that involves a committee of 5 to 10 experienced workers/experts together under the leadership of trained facilitator. In the Ethiopia case, the experts employed in a particular job gather together and list jobs, duties and specific tasks for particular occupation along with the knowledge, skills, tools and materials needed to perform the job and finally cross-checked against the requirements of the International Standard Classification of Occupations (ISCO) to ensure international compatibility.

1.1.2.3 The Occupational Training Standard (OTS) approach (2006-2007)

In OTS curriculum development approach, experts from the world of work jointly with TVET teachers were assigned to do list of skills, knowledge and attitude in detail for

each duty and task with the necessary steps and the performance standards /criteria and tools and materials required to perform each task. Though nearly the curricula for all training fields were developed following the OTS approach, they became out-of-dated and replaced with the so called ‘syllabus based approach’ before they were executed.

1.1.2.4The Syllabus based approach (2004-2005)

In this curriculum development approach, the so called basic /core, generic and common competencies for each occupation were developed. Furthermore, the curriculum format has objectives, contents, instructors’ and learners’ activities, and time allotted for each course and contents. This approach had been implemented in Ethiopia in the years 2004 and2005 with the help of UNESCO/UNEVOC.

1.1.2.5 The Outcome/Competency-Based approach (2007 till present)

The 'Outcome/Competency Based' TVET system model is widely used for the curriculum design and skill assessment development. Outcome/competency-based system is the system in which the curriculum is developed so that the trainees after completing the course is expected to perform the tasks given according to the performance criteria given under the competency standard (Schnellert, 1993: 152; Shaorshadze & Krishnan, 2013: 18). The premise is that all trainees would achieve a minimum pre-set level of accomplishment in each skill or knowledge area. It is based on the principle that knowledge acquisition is learner-centred and results oriented and founded on the belief that all individuals can learn.

In spite of the fact that the TVET authorities of Ethiopia had been professing that Ethiopia has embarked on working outcome based /competency based approach since 1994 (MoE, 2008: 3), there were curriculum changes from time to time even within the so-called outcome/competency based TVET system. Most of these changes were ascribed to reform. These approaches were split occupation, clustered occupations, single-levelled, multi-levelled, and occupational structural mapping approaches.

a) Split occupations approach (2007)

In this TVET approach, the occupations were further divided into small group of duties/jobs and each job/duty was considered as an occupation by itself. For instance, the occupation field entitled Electronics Technology can be divided further into the following six occupations that stand as a single entity:

- Audio electronics technology
- Video electronics technology
- Mobile telephone repair and maintenance technology
- Instrumentation technology
- Office equipment repair and maintenance technology
- Computer repair and maintenance technology.

b) Clustered occupations approach (2007)

In this approach, work under different job categories were made to come together and duties and job roles were made to be clustered and considered as one occupation. For example, the following fields, i.e. ‘audio electronics technology’, ‘video electronics technology’, ‘mobile telephone repair and maintenance technology’, ‘instrumentation technology’, ‘office equipment repair and maintenance technology’ and ‘computer maintenance technology’ were clustered together as a single entity and named ‘Electronics technology’.

c) A singled levelled approach (2008)

In this TVET approach, one occupation has only one single level. For instance, for the occupational field named ‘Carpentry’, it can be determined as level - III, i.e. once the occupation is levelled (say, level - III), there is no other levels such as level - I, II, IV or V. In other words, for the carpentry field once already determined as level - III, there is no carpentry field with level - I, II, level - IV or level V.

d) A multi-levelled approach (2008-2010)

In this TVET approach, one occupation may have various levels (from level - I to level V). For instance, in the Plumbing occupation, there were Plumbing level - I, Plumbing level - II, Plumbing level - III, Plumbing level - IV and Plumbing level V.

e) The occupational mapping approach (2010 till present)

This outcome/competency based TVET approach has been working since 2010 in Ethiopia. In this approach, there are five consecutive grade levels (Level - I- level V). For instance, the occupational map of Information Technology (IT) is structured as shown in Figure 1.2.

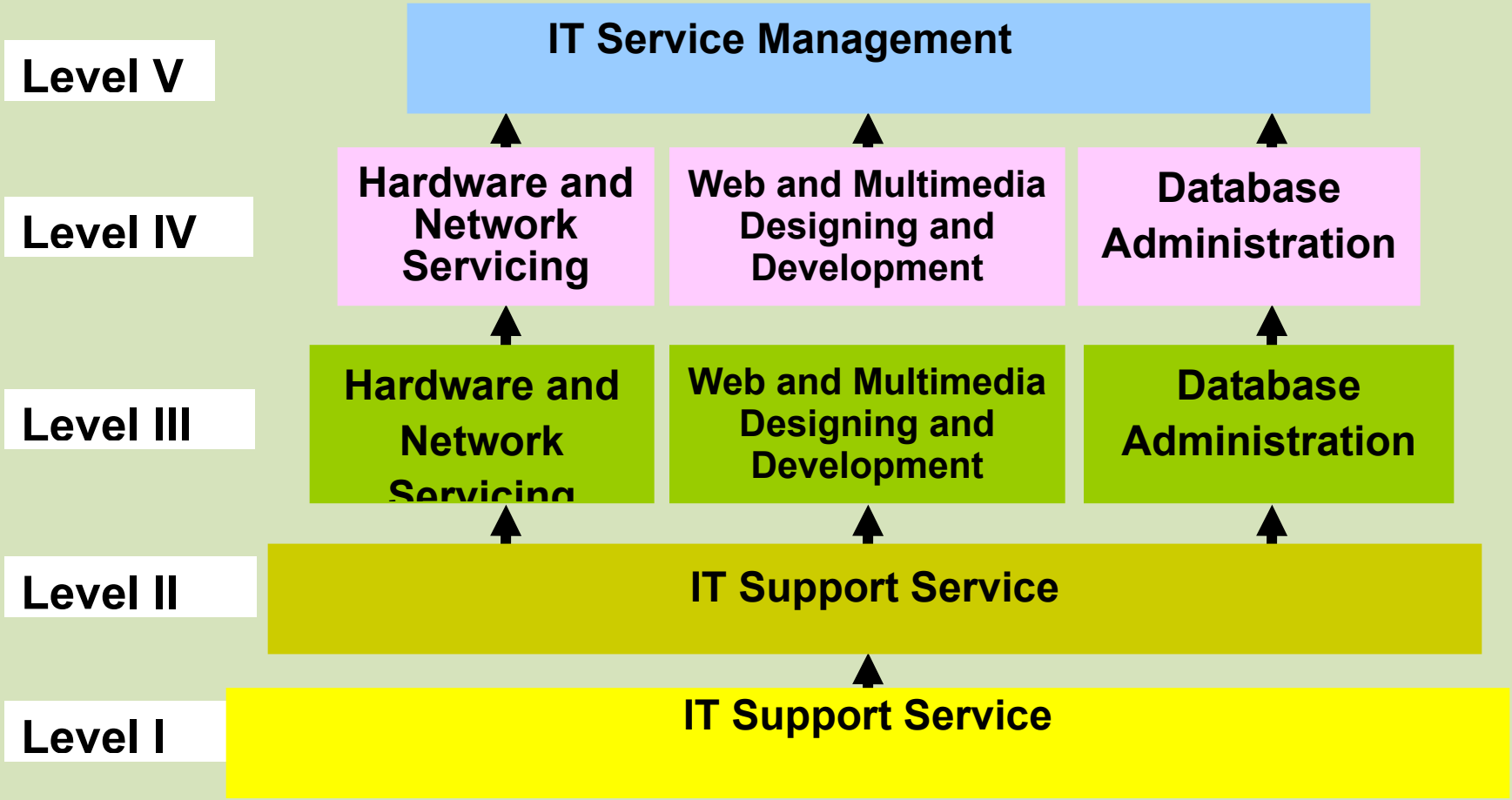


Figure 1.2 Occupational map for the Information Technology field of study

Source: EOS developed by MoE (2010)

The following are major features of occupational map for Information Technology field of study shown in Figure 1.2 above:

- There are five occupational levels for the whole ‘IT’ occupation
- There is only one occupation named ‘IT support service at level – I & level - II
- At the level - III &level - IV, there are three occupations entitled, ‘Hardware and networking servicing’, ‘Web and multimedia designing and development’, and ‘Data administration. Every trainee who should join level - III has to elect one of the three occupations.
- At the level V, there will be only one occupation entitled ‘IT service management’. That means, all trainees who already pursued any one of the three occupations at level - IV and who want to join level V should pursue IT management.

In the occupational mapping curriculum development approach, all TVET curricula have been developed based on the Ethiopian National Occupational Standards and National Qualification Framework that are already laid down. According to MoE (2008: 22), each TVET provider may and should develop its own curricula based on the specific needs of its target groups and in compliance with the respective occupational standard. To do this, the outcome-based TVET curricula need to be facilitated by the respective regional TVET Agencies on the basis of nationally endorsed occupational standards. The strategy further notifies that regional TVET authorities should assist to ensure that the new curricula have been employed in both public and private TVET institutes operating in the region (MoE, 2008: 35).

To emphasise the necessity of the TVET providers to develop their curricula and support needed to be given to them, the following statement was reflected in the Ethiopian National TVET Strategy (MoE, 2008: 36):

> It is acknowledged, however, that many of the existing TVET providers are not yet in a position to develop high quality curricula and TVET programmes on their own. Substantial capacity building and support (provided by the TVET system) will be necessary to enable TVET providers to transform the occupational standards into appropriate modular and outcome-based curricula.

Curricula as well as training, teaching and learning materials are of high standards and respective support and working manuals should be provided to assist their development. Since the contemporary occupational mapping TVET outcome/competency based TVET approach is the current TVET system that is working since 2010 in Ethiopia, this study focuses on the practices of TVET curriculum design in place in the country from 2010 till present.

1.2. Problem statement

TVET is one of the vitally important programmes for a country's economic and social sustainable development (Zhao & Raune, 2014: 80). There were various types of TVET programmes that have been implemented in Ethiopia since the late 1991 fall of the 'Dergue Regime to the subsequent coming of the present government 'Ethiopian People's Revolutionary Democratic Front' (EPRDF) to power. Since 1994, Ethiopia has embarked on a quite radical reform and has passed through different approaches of TVET curriculum designs and changes in the name of reforming from the supply oriented process and input-based to the demand oriented and outcome-based TVET delivery approach (Ayele, 2010: 5). Since 2003, the government has committed itself to overhauling and reforming the basic framework of the TVET system, moving towards a competency-based modular approach and greater industry relevance. Since then, numbers of government /public TVET institutes were established in the country under the auspices of Ministry of Education which were vested in the authority of National TVET Agency. These public TVET institutions under the education sector were concentrating on producing middle level technical graduates after Grade 10 (MoE, 2008: 9).

There are differences in nomenclatures among the training providers and institutes based on the types of the training programmes and modes of training delivery. Some TVET institutes call their programmes as 'Vocational Education and Skills Training' (VEST) and others simply name their programme 'Skills Development' (SD) or 'Livelihood Skills Development' (LSD) and still others call it 'Formal or/and non-formal TVET' programmes. The training institutes have differences in their taxonomy so that

some training institutes are named as ‘Junior TVET Institute’ or ‘Medium TVET Institute’ and still others are called by the name ‘Polytechnic TVET College’.

There are two major forms of TVET programmes that are so far experienced in Ethiopia: the “formal TVET programme’ and a non-formal TVET programmes (MoE, 2008: 15). A Formal TVET is a TVET programme for 10th grade completers (after the end of secondary schooling), and non-formal TVET programme, which is sometimes named as junior level TVET programme, is a special programme which is designed for out-of-school youths and adults specially for those who have not completed Grade 10 in spite of the fact that anyone can join. The formal TVET programme is often provided in TVET institutes or colleges while the non-formal TVET programmes are offered at institutes often named TVET centres (MoE, 2008: 27; Shaorshadze & Krishnan, 2013: 15).

The definitions, subject matters, contexts and contents of TVET vary from country-to-country and from organisation-to-organisation. In the Ethiopian case, TVET comprises nearly all occupational fields /work area programmes/ at various trade/sectors; the industrial, construction, business, home sciences, health, music and entertainment, culture and tourism, sport-sciences, inter alia, are some of the sectors (MoE, 2008: 18). Nearly each field in each trade/sector is classified in levels: i.e., level - I, level - II, level - III, level - IV and level V. However, Shaorshadze & Krishnan (2013: 20) stated that ‘the issues of the validity and reliability of the content selection remains debatable as to which courses ought to be included and excluded from the curricula’.

Presently, there are three types of TVET institutions by their standard levels and their course delivery mode despite the fact that there is no clear demarcation between them. These institutions are named as ‘Junior Level TVET Institute’, ‘Middle Level TVET Institute’ and ‘Polytechnic TVET College’ (Shaorshadze & Krishnan, 2013: 26). The junior level TVET institute is an institute in which non-formal TVET programme is run while the middle level TVET institutes and TVET colleges are the institutes in which formal TVET courses are delivered. The junior level TVET institutes provide training at level - I, level - II or level - III standards specifically for those who could not complete general education. The middle level TVET institutes are there to often

entertain those 10th grade completers who could not join higher education at level - I to level V. TVET colleges often provide training programmes from level - I to level V though it is specially established to provide training at advanced levels IV and V standards (Shaorshadze & Krishnan, 2013: 16).

According to Shaorshadze & Krishnan (2013: 13), the programmes of formal TVET are almost uniform whether run by government or by private, with slight difference in implementation mode. But, there are considerable varieties in the types, designs and implementation styles of the programmes in non-formal TVET programmes specifically among those which are run by private and NGOs.

There are different issues that can be raised while investigating the TVET curriculum design and development practices in Ethiopia. The Ethiopian TVET curricula are developed by adopting other countries' standards (like the Philippines, Australia and South Africa for instance) and then adapting it to the country's real situation (MoE, 2008: 46; Edukans Foundation, 2009: 3).

Ethiopia has followed outcome-based TVET system by which the labour market demand is identified by industry and then EOS are developed using international benchmarking and TVET curriculum is developed based on EOS developed by industry. There might be different factors that affect TVET curriculum design and development in Ethiopia. Therefore, it is vital to investigate the factors that have and continue to determine TVET curriculum design and development in Ethiopia.

The profound reform of the Ethiopian TVET system is aimed at creating a TVET system which is wage and self-employment-oriented, demand-driven and appropriate to the development needs of the Ethiopian economy (MoE, 2008: 21). Hence, it is necessary to investigate how far the Ethiopian TVET system follows the outcome-based TVET system philosophy she adopted and could adapt the philosophy towards the fulfilment of the Ethiopian TVET objectives indicated in the National TVET Strategy and other working documents.

There are issues that need to be taken into account to design TVET curriculum in Ethiopia. Hence, issues and considerations in terms of outcome-based TVET curriculum design and development such as input, processes and output need to be investigated.

There are different approaches other than competency-curriculum conversion methods to design and develop TVET curriculum. Developing A Curriculum (DACUM), Systematic Curriculum and Instructional Development (SCID), Occupational Standard Training (OTS) approaches among others, are viable outcome-based curriculum design and development approaches. The processes and steps that were followed in order to develop present Ethiopian Occupational Standards are consecutively: International benchmarking, Adopting, Adapting and Verifying (MoE, 2007: 28). With regard to these processes in the TVET curriculum design and development in Ethiopia, questions like the following ones can be raised:

- When a curriculum is designed, are the experiences of other countries appropriately taken /adopted/ and then re-edited, trimmed out to adapt to the country's real needs? Or the other way round, are the curricula first developed by experts, then aligned with other countries' experiences as a benchmarking standard?

- What are the TVET curriculum design philosophies and models that could most befit Ethiopia?

The other issue which needs investigation is whether the current Ethiopian TVET system can really be in a position to be referred to as 'outcome-based' as it is being declared by the Ethiopian TVET authorities, why Ethiopia could prefer the outcome-based TVET approaches to others above all else? Is the outcome-based TVET system really the most suitable TVET approach for present Ethiopia? Therefore, it is necessary to investigate what practices and approaches Ethiopia has been experiencing in TVET curriculum designing along with the impact this could bring in return.

Hence, the main research question of the study is: “What are major issues and considerations to be taken into account in order to design TVET curriculum for present Ethiopia?” Furthermore, the following sub-basic questions were raised to assess the practices of TVET curriculum design and development processes in Ethiopia.

1.3. Basic research questions

- What factors have and continue to determine TVET curriculum design and development in Ethiopia?
- What curriculum design theories and philosophies underpin the design of TVET curricula in Ethiopia?
- What major issues and considerations need to be taken into account to design and develop TVET curriculum in Ethiopia?
- What could be the most suitable TVET curriculum design and development models and approaches that could befit present Ethiopia?

1.4. Research objectives

The general objective of the study was to assess the existing practices and major factors affecting the design and development of TVET curriculum and explore issues and considerations to be taken to design TVET curricula in Ethiopia. The aim of the study was to document issues and considerations to be considered in order to design and develop TVET curriculum for present Ethiopia.

The following were specific objectives of the study:

- To investigate factors that have and continue to determine TVET curriculum design and development in Ethiopia.
- To investigate the curriculum design theories and philosophies that could underpin the design of TVET curricula in Ethiopia.

- To explore major issues and considerations to be taken to design and develop TVET curriculum in Ethiopia.
- To explore the most suitable TVET curriculum design and development approaches that befit present Ethiopia.

1.5. Definition of key terms and concepts

Competence: the demonstration of an effective and qualitative activity, which meets the requirements of the world of work (Schnellert, 1993: 82).

Competency: an ability of a person to perform a certain task of an activity on the grounds of the acquired knowledge, skills, values, and attitudes. The combination of certain competencies composes qualification (Schnellert, 1993: 82).

Competency based education: The premise is that all students will achieve a minimum pre-set level of accomplishment in each skill or knowledge area. It is based on the premise that knowledge acquisition is learner-centred and results-oriented, and founded on the belief that all individuals can learn (Schnellert,1993: 82).

Curriculum design: a conceptualisation and arrangement of the major components of a curriculum. This includes content, instructional methods, materials, and learner experiences or activities (Rampedi, 2001: 13).

DACUM approach: DACUM is an acronym for Developing A Curriculum. It is a system in which experts employed in a particular occupational area determine the curriculum content (Finch & Crunkilton 1999: 145; Schnellert, 1993: 40).

Non-government TVET institutions: the TVET institute run by civil society organizations or bilateral and multilateral donors or charity organisations that operate independently of the state. Government sources estimate that private TVET providers currently provide approximately 5% of all TVET in Ethiopia (Shaorshadze & Krishnan, 2013: 13).

Occupational standard: a precise description of knowledge, skills, attitudes and work competencies necessary for working in a particular occupation, i.e. for performing a

job (Engelshoven, 2014: 17).It comprises specified and analysed requirements from the world of work along with international benchmarks (standards) against which the TVET system can be assessed or measured (MoE, 2008: 17).

Outcome based TVET system: the strategy that implies the training received in TVET should be measurable according to the skill assessment based on the occupation standards (Engelshoven, 2014: 17). It is a TVET system in which the needs of the labour market and occupational requirements from the world of work are used as the benchmark/standard for the TVET-Delivery (MoE, 2008: 15.

Private TVET institutions: the private-owned TVET institute in which training is provided to learners by charging a fee. Government sources estimate that private TVET providers currently provide approximately 30% of all TVET in Ethiopia while private TVET providers estimate their share of the market to be around 50% (Shaorshadze & Krishnan, 2013: 13).

Public TVET institutions: the government-run TVET institute in which training is provided to learners free of charge. Government sources estimate that public TVET providers currently provide approximately 65% of all TVET in Ethiopia (Shaorshadze & Krishnan, 2013: 13).

Qualification: a composition of competencies enabling a person to act effectively in a certain profession. It is fulfilled requirements of an occupational standard, awarded by state authorized institutions.

Region (Regional State): one of the nine decentralised administrative provinces of Ethiopia with significant autonomy in their decision-making and governance.

Standard: description of work activities linked with the outline of appropriate (relevant) knowledge, skills abilities (competences) (Engelshoven, 2014: 15).

Task analysis: the process of delineating the task (job) into the elements required to complete it satisfactorily. It is the process of synthesising the knowledge and skills required to perform the tasks that have been previously defined in the job analysis (Finch &Crunkilton, 1999: 145).

Woreda: district administrative unit (a sub-unit of a zone) in Ethiopia

Zone: a sub-unit of a regional state in Ethiopia

1.6. Delimitation and limitations

The study focused on the TVET curriculum design and development processes in Ethiopia. Hence, the study concentrated on inquiring about what the practices of TVET curriculum design and development in Ethiopia looks like thereby to propose issues and considerations that need to be taken into account while designing TVET curricula for Ethiopia in particular. As it is impossible to address all the regions in Ethiopia, the study was delimited to some selected national regional states of Ethiopia.

Because of the diverse and range variations of existing TVET programmes in Ethiopia, this study focused on formal TVET programmes at TVET college levels (all level - I to level - V in the Ethiopian Qualifications Framework). This is because the formal TVET programme is currently the dominantly widespread TVET programme in Ethiopia (MoE, 2008: 28; Shaorshadze & Krishnan, 2013: 17). The study is also mainly limited to the TVET programmes in TVET colleges designed for 10^{th} grade completers that are run by government.

The current TVET system in Ethiopia consists of industrial technology, construction technology, textile technology, business, health, sport, tourism, theatrical arts, music arts, inter alia. The focus of this research was on building construction sector. This is because this sector is the major and more prevailed occupational trades in TVET system in Ethiopia. The study was also limited to the practices of curriculum design and development taken place since 2005. This is because it is since then that Ethiopia has officially declared that it immensely got involved in the outcome-based TVET system.

The study has not attempted to compare the existing practices of TVET curriculum design and development among the providers but to investigate the approaches the government-run TVET colleges follow to design their curricula. The investigation was

limited to literature resources and interviews with knowledgeable people in the field such as TVET curriculum experts, planners and selected trainers.

1.7. Rationale/justification

Whenever the issues of the teaching and learning processes are discussed, it is inevitable in one way or another to discuss the issues of curriculum design and development. Curriculum can be regarded as the backbone of educational systems because whenever one talks about the curriculum in one way or another, it is inevitable to talk about other educational issues, systems and programmes, such as the educational institutes, the teaching and learning process, the teachers, students, management, and training materials, among others (Schnellert, 1993: 14). To support this idea, Engelshoven (2014: 5) notes that curriculum is the central part of educational programme and that in the traditional sense, the term programme corresponds to the content of education and learning process.

The curriculum process has different stages. These are curriculum design, curriculum development, curriculum implementation, and curriculum evaluation (the Commonwealth of Learning, 2000). Hence, as it is the first and fundamental stage in the curriculum process and therefore the rest of the stages are dependent on it, curriculum design is worth getting more attention. Therefore, the different approaches of TVET curriculum design and development that were exercised in Ethiopia were discussed. There are very limited research undertaken in regard to TVET curriculum design and development in Ethiopia. However, most of what have been researched investigated the practices and challenges of the curriculum implementation in the training institutes. This study investigated the existing processes starting from the scratch of TVET curriculum design to its full development stage.

Despite the non-existence of documentation, there have been curriculum changes in Ethiopia from time-to-time. Therefore, the study investigated what TVET curriculum design and development approaches Ethiopia has gone through and the causes attributed for the change occurrence specifically since 2005. The study has also identified factors that profoundly affected TVET curriculum design and development;

finally, the study has come up with principles, philosophies, issues, and considerations to be taken into account while designing and developing TVET curricula in general and for current Ethiopia in particular. It is from these perspectives and others that the researcher has been motivated to investigate the practices and factors influencing TVET curriculum design and development in Ethiopia.

1.8. Ethical considerations

TVET is highly susceptible to politics. The attributions given by policy makers and designers about the programme and for the type of curriculum design chosen may not be true as there may be other hidden and implicit ascription, say political agenda that the researcher may not get it simply.

Hence getting ethical clearance from concerned body to conduct the research is essential. Accordingly, ethical clearance (appended to this report) was requested from the Ethiopian National TVET Agency, from selected Regional TVET Agencies, TVET colleges and the University of South Africa (UNISA). Data gathering and informed consent prior to seeking their responses were requested from the research participants. The researcher ensured this by requesting permission from each TVET college deans, deans and trainers via formal letters.

1.9. Chapter outline

Chapter one introduced the study and the statement of the problem, objectives of the study, the research questions, the delimitations, limitations, justification of the study and ethical considerations in specific. Chapter two and three deal with literature review. In these chapters, issues in relation to the overview of the TVET system were widely discussed. Furthermore, discussion about the concept of TVET curriculum design and other related issues were presented. Chapter four presents the empirical research design and methodology and chapter five deals with data presentation and analysis. Discussions of findings of the study are presented in chapter six. In the last chapter (Chapter seven) a summary, conclusions and recommendations as well as suggestions for further research are made.

CHAPTER TWO: LITERATURE REVIEW I

PHILOSOPHIES OF EDUCATION AND BASIC CONCEPTS ON CURRICULUM DESIGN

This chapter contains two major sections. The first section of the chapter presents philosophies of education. In this section, discussions on the major educational philosophies such as perennialism, essentialism, and reconstructionism are presented. The second section of the chapter discusses the basic concepts on curriculum design, methods and models developed by different authors and scholars.

2.1. Philosophies of education

Philosophy is wide and therefore impossible to address it all in that it has many branches and covers multiple of disciplines such as educational philosophy, political philosophy, philosophy of religion and so on. There is no single and particular definition for philosophy. Citing Greene (2010), Oliva and Gordon (2013: 128) define philosophy as “a way of framing distinctive sorts of questions having to do with what is presupposed, perceived, intuited, believed, and unknown”. Philosophy has different implications for different people. For instance, as expressed by Oliva and Gordon (2013: 128), philosophy is a means of attempting to answer people’s inquiry. Philosophy for Dewey is a ‘way of thinking that gives meaning to our lives’ (Ornstein &Hunkins, 2014: 68). In light of the definitions given by various philosophers, philosophy can be referred to be a means of answering questions, a way of gathering individuals’ and people’s thinking, perception and argument about certain knowledge, organising and managing them to have meaning that benefit our life. According to Ozmon (2012: 3), one role of philosophy is to analyse intellectuals’ argument and enable them think in different ways as a means to their debate. The second role, according to Ozmon (2012: 3), is “to make the logic behind intellectuals’ debate a means to construct their problems in any education and in other human endeavours”. In general, one may have his/her own viewpoint about certain knowledge. However, the idea can be categorised systematically to either of the discovered philosophies so that the idea raised can get substantial meaning. As the major aim of this study is to investigate issues in reference to vocational curriculum design, the philosophical

issues that are discussed hereunder focus more specifically on the philosophy of education.

Philosophy of education, according to Greene (2010), is a matter of doing philosophy with respect to the education enterprise as it engages the educator (Oliva & Gordon, 2013: 128). John Dewey contends that philosophy of education may be defined as the general theory of education and that the business of philosophy is to provide the framework for schools' aims and methods (Ornstein &Hunkins, 2014: 68). According to Ornstein and Hunkins (2014: 87), education philosophy directs our actions and thus in the absence of a rational philosophy, an educator is excessively influenced by external pressures without following logics and analysing the situations critically. For Dewey, education philosophy is not only a starting percentage for schools, it is also crucial for all curriculum activities (Ornstein &Hunkins, 2014: 68). Hence, philosophy of education helps educators in showing ways of addressing the goals of schools and has the power to defend one's thinking from being affected by undeserved fiat.

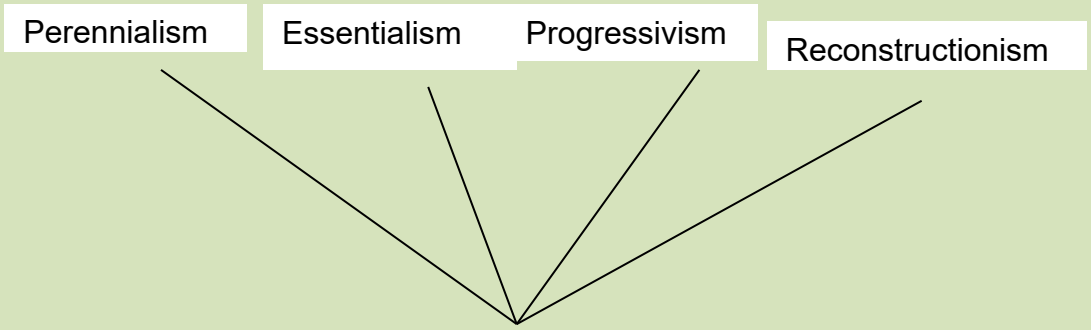
Philosophy of education, overall, provides valuable perspectives to help people think more knowledgeably and more critically. Furthermore, philosophy of education helps educators analyse matters and prohibit them from wandering here and there undeservedly. Furthermore, philosophy of education helps one to know how to begin and what the consequent activities would be in the educational process. It is also used as a means of hinging educational activities such as educational planning, learning materials development and implementation. It also enables educational components be orderly and coherently interwoven to one another to give meaning.

Philosophy of education is also vital in the curriculum design process. Curriculum design decisions should neither be made from the scratch, nor is it something that curriculum developers simply gathered and do the work of writing. Instead, there are various issues such as political, social, economic, technological, and environmental factors that curriculum planners need to consider as a prior condition for curriculum design (Oliva & Gordon, 2013: 161). While explaining philosophy as a curriculum source, Ornstein and Hunkins (2014: 68) note that philosophy's function can be conceived as either the starting point in curriculum development or a function which is

interdependent with other functions in curriculum development. Hence, philosophy of education directs the way curriculum components such as objectives, learning contents and learning experiences are framed and interconnected in the curriculum designing activities. Ornstein and Hunkins (2014: 153) suggest that in designing a curriculum, one should consider philosophical and learning theories to determine if his design decisions are in accordance with his basic beliefs concerning people, what and how they should learn, and how they should use their acquired knowledge.

Perennialism, essentialism, progressivism and reconstructionism are the basic principles of the education philosophy. Perennialism is the oldest while reconstructionism is the most recent philosophy.

Figure 2.1 Philosophies of education from the most liberal to the most conservative



Source: Oliva & Gordon (2013)

In Figure 2.1, perennialism at the far left, is the most conservative and traditionalist of the four philosophies while reconstructionism, at the far right, is the most liberal and contemporary one (Oliva & Gordon, 2013: 128). This implies that philosophies are not something that are stagnant; they rather keep on changing from time-to-time so that as time passes by, people's conservative thinking dwindles and shift to more liberalism.

According to Oliva and Gordon (2013: 128), the most conservative and the most liberal philosophies are not widely preferred by educators. According to them, essentialism and progressivism have been widely espoused by educators, but neither reconstructionism nor perennialism has found widespread endorsement in schools (Oliva & Gordon, 2013: 128). According to Oliva & Gordon, (2013: 128), "the American public appears to be far too conservative to espouse reconstructionism as a prevailing

philosophy, and at the time far too liberal to accept perennialism". This implies that it is not as such easy to allocate a single philosophy to certain society as it is difficult to accept one single philosophy and reject others. Therefore, it appears that it is not easy to leave once intensified philosophy in the society out and get into the new ones so immediately. As there might not be the so-called best philosophy in some cases, there might be the possibility to use a mixture of what appears to be best (eclectic) approach.

2.1.1 Perennialism

Perennialism is the oldest and most conservative educational philosophy (Ornstein & Hunkins, 2014: 71). Unlike progressivists who hold that the truth is relative and changing, the perennialists believe that the truth is eternal, everlasting and unchanging. In other words, the perennialists argue that the basic nature of problems stays the same over time.

Pertaining to education, perennialists seek enduring truths which are constant, not changing, through great literature, art, philosophy, religion (Ornstein &Hunkins, 2014: 71). As specific philosophy that can be conceived from what is observed and experienced, the perennialists might have come to believe in the everlasting nature of truth partly because unlike nowadays where changes occur fast, they had been observing things not getting changed frequently at that time for long period of time. The aim of the education system, according to perennialists, remains the same in every age and in every society. As a philosophy of education, perennialism stresses traditional values relying on the past. However, as human's thinking power progresses gradually from time-to-time, the idea of anticipating the same thing would happen in the future because they were done in the past will not live longer. However, the perennialists postulate that human nature is steady where the knowledge that existed yesterday exists today and endures forever. According to perennialists, the ultimate aim of education is to bring forth the existing but hidden knowledge for people so that every learner would exhibit similar knowledge and behavioural change at the end of the day. In this case, as perennialists believe that the truth is eternal, everlasting and unchanging, one could deduce that the curriculum to be developed for the schools

located everywhere should be similar and once it is developed it is expected to last forever without further improvement.

According to the perennialists, education is not to change human thinking, rather, it is to enable them get the chance to know the so-called existing truths that are not so far exposed to them. In the perennialists' views, education is accessed by those whom the perennialists think deserve. According to the perennialists, education results in nothing new but reveals what has been existing and the best teacher simply should be able to transmit what he/she was taught by his/her preceding teachers to his students without adding any other values to the contents. When we bring about this thought to curriculum design, the curriculum planners, most probably teachers, sit down to list what they think is eternal and everlasting truth. This listing down of what is unchanging is nota simple task. To come to consensus as to which contents are to be included in the curriculum and which subjects are to be taught in schools is problematic and debatable.

The perennialists believe that educational values are almost stable and they are universal truths, and therefore, it is not necessary to change a curriculum with such values (Belbase, 2011: 8). The perennialists present similar types of curriculum to all learners in the similar grade level. According to perennialists, the curriculum treats human nature as rational and knowledge as unchanging. Perennialists develop same curriculum to be used by every school and to all students without considering the individual learning difference as they believe that there is no individual differences among learners and all human nature is constant. This practice of developing one curriculum for all students is occurring even today as one curriculum having same contents is being used for a number of students in one class. This truth shows that perennialism philosophy is still in place today in one way or another.

Perennialists do not also believe that all people should teach. They appeal to a small group of educators who are assigned through competition (Ornstein & Hunkins, 2014: 73). That means there are few specially gifted people that are able to impart knowledge to the rest. Therefore, the curriculum should be designed in a way that it transfers the existing knowledge that one knows to whom called the gifted as it is.

Furthermore, the curriculum contents are what the persons who have authority allegedly based on ability suggest to be included in the curriculum.

From the discussions above on perennialism philosophy, it can be concluded that more focus has been placed on knowledge construction where the curriculum once developed endures forever without considering the individuals' learning differences. Philosophies can be conceived from what is observed and experienced. For instance, nowadays, one can observe that many things are rapidly changing or modified. Therefore, we cannot accept the eternity and everlasting of all truths in only one hand. On the other hand, though issues such as contents and methods of teaching development are varied, subjects such as languages and mathematics are mandatorily included in most curricula of recent educational systems. These viewpoints show that the perennialism philosophy still endures to some extent.

How are all these discussion related to education programmes and for TVET programmes in particular? For perennialists, educational quality results from providing all students with high-quality academic education. According to perennialists, knowledge is the base and fundamental to skills development. Perennialists are doubtful about the importance of vocational education as they think vocational education diverts learners from the task of mastering basic human truths (Ornstein &Hunkins, 2014: 73). Furthermore, perennialists believe tracking some students into a vocational curriculum would deny them an equal education.

There is a gap in adopting perennialism as an education philosophy in curriculum design in general and the Ethiopian vocational education system in particular. If truth is believed to be eternal and everlasting as perennialists believe, the TVET curriculum design methods must have been same for all fields of study and once the TVET curriculum is developed it would have endured forever. However, it could be observed, on the one hand that some subjects such as language, mathematics, sports among others are commonly included as subjects/courses in many vocational education programmes. For example, general knowledge subjects such as Chinese language, mathematics and one foreign language are commonly provided in Chinese TVET programme (Misko, 2010: 32). This shows that the perennialsits' view that there are

everlasting subjects does work even today. On the other hand, it could be observed that the so-called ‘common courses’ such as language and mathematics are excluded exceptionally from the current Ethiopian TVET curricula whilst there are certain courses such as ‘technical drawing’ for instance, as a common course for most industrial and construction fields of studies (MoE, 2007: 36). This shows that perennialists’ views are working in some educational systems while they are excluded in some curriculum design and development approaches.

2.1.2 Essentialism

Essentialism is the second philosophy next to perennialism as indicated in Figure 2.1 above. The essentialists believe that there are certain basic or essential knowledge, skills and understandings students should master (Ornstein & Hunkins, 2014: 74). Perennialism and essentialism are not two fully separated and distinct philosophies. For instance, they have some common features in that they believe in the necessity of transmission of knowledge while they have differences as well, in that the perennialists believe eternal truths to be transferred while the essentialists accept the knowledge and skills the society values to be conveyed from one person to another. Just like the perennialists, many essentialists emphasise mastering the skills, facts and concepts that form the basis of the subject matter.

The aim of education according to essentialist philosophy is the transmission of the cultural heritage of what they think is essential (Oliva & Gordon, 2013: 130). This implies that there is what essentialists call essential and non-essential. Unlike perennialists who believe that truth is everlasting, the essentialists believe that changes are essential and these changes are gearing individuals towards the societal common needs. This philosophy might have been developed by then because occurrences of changes were becoming more noticeable.

Essentialism as a philosophy is still being practised because the societal needs analysis is the first step in the design curriculum process. As essentialism stresses on addressing the societal needs than individuals specific needs, the essentialist curriculum has always been the easiest to understand and the simplest to organise

and administer (Oliva & Gordon, 2013: 131). Essentialists think that learners need to be taught common curricula. According to essentialism, the society and teachers are decision makers in determining curriculum. The curriculum from essentialism perspective focuses on essential skills such as the three R's (Reading Writing and Arithmetic) and essential subjects like English, Science, history, Math and foreign languages (Ornstein & Hunkins, 2014: 86). Indeed, the perennialists also propose these subjects. The difference is the notion in which they are preferred as the subjects are assumed as everlasting by the perennialists while they are considered as vital subjects by the essentialists. Though times have passed since the essentialism philosophy emerged, it is still popular as the aforementioned subjects such as languages, Mathematics and sciences are widely being incorporated even as electives in modern school systems.

When the essentialism philosophy is viewed and examined in light of vocational education curriculum design, it can be inferred that essentialism, from its philosophical base, follows the demand-driven approach to curriculum development. This is because demand-driven vocational curriculum attempts to address what the society thinks significant. Essentialism also works today to select courses and subjects from multiple of subjects that are proliferated and therefore become difficult to select and manage. The very important question to be raised here is which courses, subjects or contents are essential as what seems essential for one might be trivial for the others. Besides, it does not guarantee that what is essential today will also be essential tomorrow, as things are rapidly changing from time-to-time in this era.

Essentialism has much to do with vocational education. In vocational education, contents which are thought to be essential for the world of work especially are to be provided. The issue is the way the so-called essential vocational subjects and contents are selected. For instance, overhead projector maintenance was essential some years back while it has become obsolete in Ethiopia as the overhead projector is replaced with digital projector.

2.1.3 Progressivism

Progressivism philosophy comes third in its chronological age after the perennialism and essentialism. Unlike perennialists who hold that the truth is eternal, everlasting and unchanging, progressivists believe that the truth is relative and changing. In other words, unlike the perennialists who argue that the basic nature of problems stays the same over time, the progressivists see problems varying dramatically in character over time. Hence, for progressivists, yesterday's answers have little to offer people confronted with today's problems.

Progressivists emphasise on curriculum that is relevant to children. Unlike the essentialists who focus on societal needs, the progressivists centre on the individual differences and needs (Oliva & Gordon, 2013: 132).The progressivists urged for schools to provide for learners' individual differences in the broadest sense encompassing mental, physical, emotional, spiritual, social, and cultural differences (Ornstein &Hunkins, 2014: 86). Therefore, the philosophy of progressivism espouses the idea that the focus of education should be learners rather than content and that whatever is taught should be meaningful. In both thought and practice, progressivism shows concern for the student, society, and subject matter, placing the student at the centre of the learning process (Oliva & Gordon, 2013: 132). Hence, progressivism calls for the participation of learners in designing and implementing their learning strategies.

At the heart of progressivism thinking is an abiding faith in democracy and hence, the progressivists see little place for authoritarian practices in the classroom and the school (Ornstein &Hunkins, 2014: 86). Nevertheless, progressivists do not concur with the essentialists that learners are immature subjects that simply follow others but rather consider them partners in the educational process. The progressivists promote that learners education should be the means that enables learners to utilise their individual talent and potential to the maximum.

Unlike perennialism and essentialism which are premised on the believe that teachers convey knowledge to students, the progressivists accept that the students participate

actively in their learning. By implication, the role of the teachers is to facilitate condition for students to exercise and develop their talents. Oliva and Gordon (2013: 132) note that teachers influenced by progressive thinking see themselves as counsellors to pupils and facilitators of learning rather than expounders of subject matter.

According to progressivists' view, individuals have their own talent and experience. In light of this, Ornstein and Hunkins (2014: 77) call for cooperation to be fostered in the classroom rather than competition as it enables learners to share the knowledge they acquire with one another so that they would be holistically competent. Schools should nurture cooperation and self-discipline and transmit the society's culture because reality is constantly changing (Oliva & Gordon, 2013: 132). Therefore, to the progressivists, the purpose of education is to prepare learners to be lifelong learners in an ever-changing society.

According to progressivists' thought, the skills necessary for democratic living include problem solving and scientific methods. Progressivists stress more on how to conceptualise things as the notion is that individuals do not necessarily see things in the same way. According to progressivists, the simple transmission of lessons from teachers is outdated. As indicated in Ornstein and Hunkins (2014: 77), traditional education, with its "method of imposition from the side of the teacher and reception (and) absorption from the side of the pupil" is not acceptable.

Progressivists focus the curriculum on the needs of learners. These needs incorporate academic, social, and physical needs and are fuelled by the interests of the students. The progressivist-teacher is a facilitator, a resource person and a co-inquirer. The primary role of the learner is to develop new and deeper understandings continuously through their own investigation.

For Dewey and other progressivists, the curriculum should be interdisciplinary where teachers should guide students in problem solving and scientific projects (Oliva & Gordon, 2013: 134). It is interdisciplinary so that it addresses the individual's need. The progressive movement split into several groups: the child centred, activity centred, creative, and Neo-Freudian (Ornstein &Hunkins, 2014: 78). This implies that one

philosophy does not address all the problems. There are ideas that the progressivists commonly accept as there are also ideas that they do not share. This might be because unlike perennialists' thought that the truth is absolute or as of the essentialists who advocate addressing the cultural heritage as necessary, progressivists agree that people can use their free mind to think differently.

Because there is individual learning style and needs to consider, the progressivists endeavour to help learners to fulfil their needs and individual differences. Progressive education focuses on the learner rather than the subject, emphasised activities and experiences rather than verbal or mathematical skills, and encouraged cooperative group learning activities rather than competitive individual learning (Oliva & Gordon, 2013: 134).

What is progressivism applicable to vocational curriculum design and development? Progressivists promote individual needs to be assessed to construct viable curriculum. Contemporary progressivism manifests as calls for a relevant curriculum, humanistic education and radical school reform (Ornstein &Hunkins, 2014: 78). Progressivists suggest the curriculum be based on students' interests' and need to address human's problems and affairs. The progressivism philosophy has been manifested from the idea that individuals are different from one another owing to various factors such as environment and so are their problems that different approaches are required to address and solve the problems.

However, there is a gap in adopting progressivism as an education philosophy in curriculum design in general and the vocational education system in particular. Because it poses questions such as: how can the curriculum which addresses all these individuals' interests be designed? In light of this, the curriculum needs to aim at interdisciplinary subject matter, activities and projects to address individuals' needs. Progressivism is more different from the rest of philosophies of education in that it promotes democracy and stresses more on individuals' learning capacity and needs. In vocational education perspective and in outcome-based vocational education programme in particular, progressivism has a place in that each student has the right to learn at his own learning pace. Furthermore, in the outcome-based vocational

education system, progressivism philosophy plays a great role as the outcome-based system allow learners to choose certain specific field of training they want to pursue.

2.1.4 Reconstructionism

Reconstructionism is the most liberal and therefore the most recently emerged philosophy in that it addresses the societal needs. Reconstructionism holds that the school should not simply transmit the cultural heritage or simply study social problems as the essentialists suggest, but should rather become an agency for solving political and social problems (Oliva & Gordon, 2013: 129). This means education should result in societal changes. This philosophy might have emerged owing to the rise of various and multifaceted and undetermined societal problems. This might have emerged recently because the era of the emergence of this philosophy might have been the consequences of social problems like unemployment, overpopulation, globalisation, terrorism etc. which are sweeping across the world. In light of this, the subject matter to which all youngsters should be exposed to, should consist of unsolved, often controversial, problems of the day such as unemployment, health needs, housing needs, and ethnic problems (Oliva & Gordon, 2013: 129). This might be because this era is the time people began to question for their full rights. Because, as rapid changes like social, political, economic have taken place and the needs of human being come across to be diversified, the old and tradition way of thinking and acting accordingly could no more work.

While comparing essentialism and reconstructionism philosophies, Oliva and Gordon (2013: 130) describe that, “Unlike the reconstructionists who seek to adjust society to its populace, the essentialists seek to adjust men and women to society”. This means the reconstructionists stress on changing the society to individuals’ needs while the essentialists strive on the other way round to change the individuals to the majority’s needs.

As its name denotes, the reconstructionist philosophy of education asserts that society needs to be changed (reconstructed) and that schools are the ideal instrument to foster such changes. According to reconstructionists, curriculum must be transformed

and aligned to new social-economic-political education; it must incorporate reform strategies (Ornstein &Hunkins, 2014: 83). This philosophy stemmed from the ever-arising social, political and economic needs/changes of the society. For reconstructionists, the analysis, interpretation, and evaluation of problems are insufficient; students and teachers must effect change in addition. The central idea of reconstructionism, according to Ornstein and Hunkins (2014: 83) is that society is always changing, and the curriculum has to move in line with the changes. According to reconstructionists, the school curriculum needs to concentrate on social problems depending upon complexities of students cognitive, social and affective domains of learning (Belbase, 2011: 11). Reconstructionists propose curriculum to emphasise on social sciences, social research methods, and examination of social, economic and political problems. They also recommend the curriculum to focus on present and future trends as well as on national and international issues (Oliva & Gordon, 2013: 135). All these are necessary because the human and societal expectations change so fast therefore requiring flexible approach of curriculum change/development. Furthermore, as the future is uncertain but always on change, one should think ahead. One thing that should be taken care of is regulating the mistakenly unnecessarily ever changing of curriculum done in the name of flexibility and change. In other words, curriculum should not be changed overtime in the name of flexibility without prior testing and the real change that is necessary.

Consequently, one may argue that no philosophy has particular distinct features. Every philosophy has some common juncture to agree upon and dissimilar issues they contend with. For instance, the perennialists agree with the essentialists' idea that education is preparation for life but opposes the progressivists who hold that education is life (Oliva & Gordon, 2013: 130). This is partly because, in earlier times, education was primarily for survival (Ozmon, 2012: 1).

It could also be noted that philosophy gives meaning to our decisions and actions. Philosophies are changed from time-to-time partly because of the way people live and want to live and therefore thinking has been changing from time to time. There is no so-called best or least philosophy. All philosophies are vitally important and even those

so-called oldest philosophies such as perennialism and essentialism are working in some cases in the contemporary world.

In sum, all philosophies are not only necessarily to be made use of, but also to learn from. It does not necessarily mean that we leave out the previous or earlier philosophies and stick to the new one. Despite the existence of new philosophies, there are some ideas that endure and are embedded in the contemporary education system. One can glean vital information from all the four philosophies of education. For instance, the idea for some knowledge to be perpetual can be taken from perennialists because subjects like English, mathematics and history are still common subjects. From essentialists' perspectives, the idea of giving emphasis to the societal needs is what is even worthy in today's world. Regarding the progressivists' views, addressing the individuals' needs is what sounds true as no two human beings are alike. Moreover, the reconstructionists' attempt to change the society is commendable as present time and future are full of uncertainties.

Considering the relation of these philosophies to vocational education programme in general and vocational curriculum design in particular, in most cases, all the four philosophies are relevant as they hold contents and contextual ideas that are fundamentally vital in vocational education. As the world today is changing rapidly, it seems reconstructionism aptly fits the present vocational education systems. This is because reconstructionism promotes societal change for better life. Reconstructionism is a very influential and powerful philosophy, especially when its goals of social reform are combined with other philosophies such as progressivism and existentialism. Overall, an eclectic approach, which is taking some ideas from each philosophy, can be utilised. Eclecticism is an approach in which you select and use what you consider to be the most appropriate portions of several different philosophies (Finch &Crunkilton, 1999: 78). For example, one may believe learners should learn classic and other timeless concepts (perennialism) as well as the basics (essentialism) but that learners should accomplish their studies through investigating, inquiring, and discovering on their own (progressivism). Alternatively, one may believe in using group work to help students increase their academic knowledge (progressivism) and insist

that their choices include topics that have an impact on society and social issues (reconstructionism).

2.2. Basic concepts of curriculum design, methods and models

In this section of the chapter, the basic definitions given for curriculum by various authors are introduced. The issues of curriculum design and development and various methods and considerations as well as sources of curriculum design and development proposed by various authors are also discussed in this section. Furthermore, the issues of the conceptual framework and design dimensions' considerations for a curriculum as well as the manuals for curriculum design and development are dealt with. Finally, the curriculum models developed by different authors are presented.

2.2.1 Curriculum: Definitions

Definitions of curriculum are given based on the purposes, settings in which the curriculum is found and methods used throughout the curriculum. Educators interpret curriculum in different ways partly because of their own different perceptions, philosophical beliefs and contexts in which they experience it (Makgato, 2003: 18). Definitions of curriculum vary overall ranging from narrow to broad interpretations. While identifying what we mean by narrow and broad way of curriculum interpretations, Oliva and Gordon (2013: 6) assert that those who view a curriculum in a narrow way take it to be what the school thinks about the subject to be taught at school and those who conceive curriculum as a broad way take it to be all experiences of learners, both in school and out, directed by the school.

Though different authors give different definitions for curriculum, the central idea of the curriculum is that curriculum is a document that contains what is to be taught and how to teach it. In this regard, Oliva and Gordon (2013: 6) note that the differences in substance of definitions of curriculum are not as great as common as differences in what the curriculum theorists incorporate in their conceptions.

As defined by Seel and Dijkstra (2004: 149):

> A curriculum is a plan to realize a goal of education that prescribes (a) the content of the information and problem-solving methods of a domain; (b) the objectives the students should reach in the cognitive, affective, and motor domains; and (c) the sequence in which these can be learned by students of a certain group in an estimated period of time.

According to McKernan (2008: 4), “the curriculum is concerned with what is planned, implemented, taught, learned, evaluated and researched in schools at all levels of education.”

Tyler and Taba are some of pioneers who have defined curriculum in a classic manner. Hence, for Tyler (1949), curriculum is the way to “educational objectives” that represents the kinds of changes in behaviours that an educational institute seeks to bring about in its students (Oliva & Gordon, 2013: 6). According to Taba (1962), curriculum is "the total effort of the school to bring about desired outcomes in school and out-of-school situations" (Schnellert, 1993: 23). Furthermore, Taba contends that as curriculum is an instrument to produce citizens that act on their local needs, much focus need to be given to the needs of the schools and the environment in which the learning is based on (Oliva & Gordon (2013: 161). Taba takes the school as central theme to curriculum design. To highlight that learning programmes need to focus on the local situations, Taba adds that, "Curriculum is a way of preparing young people to participate as productive members of their culture" (Schnellert, 1993: 23).

All these definitions given to curriculum ascertain that the curriculum is the basics and fundamentals of the teaching and learning process as well as all learning programmes. Curriculum is the backbone of teaching and learning process and all learning programmes. Curriculum is a key element in the educational process; its scope is extremely broad, as it touches virtually everyone who is involved with teaching and learning. By this, it could be noted that when one raises the issues of funding schools or about school construction or about school management, supplies and materials or about teachers, he is directly or indirectly talking about existing or forthcoming curriculum.

It can be concluded for the most part that the definitions of curriculum vary based on the objectives, settings and environment in which it is defined. The variation of interpretation of curriculum brings about both advantages and disadvantages for authors and implementers. The advantage of existing variations of curriculum definition is that one should not necessarily stick to one way of designing and developing curriculum. Furthermore, the variation in definitions for curriculum designing gives chance to do things differently and flexibly based on the felt needs. It also allows one as a curriculum designer to take the design/approach which fits the real environmental situation of the in reality.

Conversely, the variation in the definition of curriculum may lead the designer to just run to one of the many definitions blindly and then rush to design it defiantly without pondering over the exact meaning of the curriculum and the consequent impact it brings about. However, the variations of definitions of the curriculum by far bring forth good opportunity for curriculum designers to see things differently and think critically before designing and developing a curriculum by allowing them to choose different options that need to be considered while designing a curriculum.

2.2.2 Curriculum design and development

The term ‘curriculum design’ and ‘curriculum development’ are used interchangeably by different authors. For instance, it could be observed that when the curriculum models in general and those of Tyler’s and Taba’s in particular are presented in various literature, some authors of curriculum such as Carl (2012: 73) and Gatawa (1990: 30) name it “the curriculum design model” whereas others call the same model “The curriculum development model” (Ornstein &Hunkins, 2014: 185; Oliva & Gordon, 2013: 100). Some authors like Print (1993: 64) simply call it “The curriculum model”. These diversifications of naming of the curriculum models affirm that less attention is given to classifying and distinguishing ‘curriculum design’ and ‘curriculum development’. Marsh and Willis (2007: 70) assert that curriculum planning, curriculum decision making and curriculum development are used interchangeably and that there is a great deal of overlap among them albeit they not being identical. These imply that unless one is viewed in light of the other, there is no clear demarcation between

curriculum design and curriculum development. Schubert (1986: 41) distinguished between curriculum design and curriculum development in that curriculum design is more specific than curriculum development though there are overlaps between the two. According to Schubert (1986: 41), it is this overlap that results in the synonymous usage of the two concepts. However, he has not clearly shown the point where they overlap and separate.

Finch and Crunkilton (1999: 35) and Zhao and Raune (2014: 191) assert that there is subtle difference between the two. According to Finch and Crunkilton (1999: 35), curriculum design is about formulating objectives and needs analysis while curriculum development is about developing learning strategies and evaluation. This means the curriculum design precedes the curriculum development. Xu (2005) in Zhao and Raune (2014: 191) also tried to distinguish curriculum design from curriculum development in a way that the curriculum design refers to the confirmation of objectives and contents, while curriculum development also incorporates the implementation and evaluation of curriculum (Zhao & Raune, 2014: 191). According to Zhao and Raune (2014: 191), formulating objectives and verification of contents development can be referred to as curriculum design while the execution and assessment development can be categorised in curriculum development phase. From all these arguments, it can be conceived that the curriculum development incorporates the design and other implementation activities like getting the curriculum evaluated. Besides, it could be perceived that curriculum design is the first and the foremost activities in curriculum construction activities. Oliva and Gordon (2013: 100) note that curriculum design as a phase within curriculum development relates both to the creation of a new curriculum and to the re-planning of an existing one after a more complete evaluation has been made. From all these definitions and meanings given for curriculum design and curriculum development by different authors such as Finch and Crunkilton (1999: 35) and Zhao and Raune (2014: 191), though curriculum design and development are not the same, it can be concluded that there is no clear distinction point between curriculum design and curriculum development. However, it

could be noted that if one has to analyse them distinctly, the curriculum design precedes its development.

Marsh and Willis (2007: 151) point out that curriculum design is all curriculum development activities undertaken before its implementation. They further state that curriculum design is searching out needs, organising purposes and combining learning experiences in meaningful ways (Marsh & Willis, 2007: 151). In Print's (1993: 95) view, curriculum design refers to the arrangement of the elements of a curriculum. Elements of curriculum, according to Makgato (2003: 22), are aims, goals and learning outcomes, contents, learning activities and assessment and evaluation. Hence, according to Print (1993), curriculum design is ways of illustrating how to organise these elements of curriculum. Print (1993: 95) further notes that curriculum design refers to the interrelationship between all curriculum elements. Curriculum design is a way of thinking about what to do and how to do in the curriculum construction process (Schubert, 1986: 41). That means curriculum design shows the existing linkage between elements of curriculum. What one can understand from Print's (1993: 45) definition for curriculum design at large is that curriculum design comprises all elements of curriculum and learning activities leaving no space for curriculum development.

According to Oliva and Gordon (2013: 100), curriculum development is viewed as the process for making programmatic decisions and for revising the products of those decisions on the basics of the products of those decisions on the basics of continuous and subsequent evaluation. For Schubert (1986: 41), curriculum development is the issue of decision-making and therefore focuses more on the process of deciding what to teach and learn, along with all the considerations needed to make such decisions. Schubert (1986: 41) also notes that curriculum development is a process that determines how curriculum construction would proceed (Makgato, 2003: 25).

From all the definitions given by different scholars and theorists on curriculum design and curriculum development, it is noted that curriculum design and development are conflated together in that there is no clear and discrete difference between the two. In

other words, curriculum design and development are not distinct activities in totality. Indeed, if they have to be put in sequence, curriculum design comes first and curriculum development follows. It can be understood also that curriculum design is embedded and infused within the curriculum development process. In other words, it is one function of curriculum development process. As this study concentrates much on curriculum foundational design, the concepts and methods of curriculum design in particular are discussed hereafter. Nevertheless, as curriculum design and development are not so distinct activities, the issues of curriculum development are also discussed along with the curriculum design.

2.2.3 Curriculum design: concepts, issues and methods

Several concepts describe some aspects of curriculum design. The concept of curriculum design and its methods are broadly expressed by Ornstein and Hunkins (2014) in the book entitled, *Curriculum Foundations, Principles, and Issues*. According to them, curriculum design refers to the way one conceptualises the curriculum and arranges its major components (subject matter or content, instructional methods and materials, learner experiences or activities) to provide direction and guidance as one develops the curriculum (Ornstein and Hunkins, 2014: 13). According to Zais (1976 in Makgato, 2003: 22), curriculum design is concerned with the nature and arrangement of the four basic elements of curriculum: aims, goals and learning outcomes, contents, learning activities and assessment and evaluation.

Curriculum design is not a fixed recipe consisting of components and set rules, but a process characterized by flexibility and pliability within which the specific variables exercise a strong influence (Carl, 2012: 67). This implies that curriculum components are not fixed but rather vary based on the situation under which the curriculum is conceived. Besides, there should be decision makers as there are issues such as political and social issues that need to be considered while designing curriculum. Null, (2011: 16) contends that the curriculum implementers often refer to the standard criteria considered during curriculum design. According to Carl (2012: 67), decisions are taken, inter alia, with regard to the content which must be included, how it should be presented and how it should be evaluated. Curriculum design is not an easy task

as partly the perspective in which one defines curriculum matters. The task of curriculum and the knowledge base upon which it draws is complex and multifaceted (Lovat, 2010: 113). Lovat (2010: 113) notes that the nature of the activities undertaken by a curriculum developer involved at the national level with a curriculum committee would differ from that of the subject teacher curriculating for specific learners at the micro-level. According to Lovat (2010: 113), there are differing views of designing approaches as to what the various levels are, which are: macro (national level), mezo (provincial or departmental level) and micro (school level).

Carl (2012: 67) suggests that the following considerations may, inter alia, contribute to a higher quality of curriculum design:

- The design must consider not only subject content but also the methods and skills necessary for the learning process (e.g. reference skills and methods).
- The learners should also be exercised in communication skills (reading, writing, speaking, listening and non-verbal communication).
- The design should make provision for the needs, abilities and skills of all learners, as potential differs from learner-to-learner.
- The design should create learning experiences which may also develop a skill in the use of free time.
- The design should correlate to a high degree with the values of the broad community and country.

Hence, according to Carl (2012: 66), the existing individual's differences in learning capacity should be taken into considerations while designing the curriculum. Carl (2012: 67) maintains that the curriculum needs to be linked to societal and learners' needs considering the individual difference they have.

There is no particular agreed curriculum design method that is used by curriculum developers. Ornstein and Hunkins (2014: 13) accentuate that curriculum authors are influenced by many designs and approaches; they draw bits and pieces from different designs. This means that curriculum designers may draw some parts from different designs than taking one design model as a whole. In general, a curriculum design should provide a basic frame of reference, a template if needed, for planning what the curriculum would look like after engaging in curriculum development.

Ornstein and Hunkins (2014: 13) liken a curriculum to a painting in a way that design refers to how one wants his artistic composition arranged. Using this analogy, they note curriculum design is influenced to some extent by the writer's curriculum approach, just as a painting is influenced to some degree by the artist's approach (Ornstein &Hunkins, 2014: 13). According to them, it is the writer's views of the world and his or her views of teaching, learning and instruction that are key issues to design selection (Ornstein &Hunkins, 2014: 13). From this analogy, it could be perceived that curriculum design is an art and the way the curriculum designers conceptualise the curriculum play significant role in the curriculum design and development. In other words, curriculum designers are influenced by the way they view curriculum. The one who views curriculum in behaviourist terms might consider learners' competences while the one who views curriculum as a system of organising learning procedures might consider more what the teachers and educators should do in the learning processes. To indicate that curriculum is designed in various ways, Ornstein and Hunkins (2014: 14) expound it in the following way:

> Those who view teaching and learning in primarily psychological terms present different curriculum designs than those who view it in social or political terms. Whereas curriculum development tends to be technical and scientific, curriculum design is more varied because it is based on curricularists' values and beliefs about education. If academic knowledge is paramount to a curricularist, his or her design most likely stresses disciplined knowledge. If, instead, students' overall growth is central, the curricularist designs with social and psychological concerns in mind. In general, curriculum design should provide a framework for planning what the curriculum will look like after curriculum development.

Curriculum designing is attributed to the aim, purposes and the objectives for which the curriculum is developed. The issues of mitigating designer's bias need to be another area of consideration. To do this, the task force or a kind of committee comprising curriculum developers with diversified views should gather and design the curriculum.

To sum up this section, it was noted that there is no clear demarcation between curriculum design and curriculum development. There is overlap between the two. However, if they have to be put in sequence, the curriculum design precedes the curriculum development. Hence, whenever one deals with design, he/she should also discuss the issues of development. The teachers are there not simply to pour what the students need. They should also interweave the needs of the students with the necessary knowledge and societal needs.

Another issue worth noting is that there is no uniform and clear cut method for curriculum design and development. Curriculum designers' views are highly decisive in the structure of curriculum design. More need to be worked on the improvement of curricularists' perception. Another issue worth noting is that the objectives for which the curriculum is needed should be clearly understood before designing and developing curriculum. Besides, as a curriculum designer, one should take the present and the future societal and learners need into consideration.

2.2.4 Considerations in curriculum design

Curriculum design reflects the curriculum's structural architecture (Ornstein &Hunkins, 2014: 157). The dynamicity of any curriculum (at whatever level) is determined to a large extent by the quality of its design (Carl, 2012: 66). Different authors have proposed different issues to be considered when designing curriculum. For instance, Carl (2012: 66) stipulates that curriculum developers must understand precisely what curriculum design comprises, what the criteria are, how it can be developed and what its nature is. Therefore, one's basic beliefs are decisive in curriculum design. McKernan (2008:31) suggests that in designing a curriculum, we should consider political, economic, social, legal and technological change in cultures. According to Finch and Crunkilton (1999: 124), needs assessment result is the foundation for curriculum design. Finch and Crunkilton (1999: 124) further note that greater emphasis is placed upon the development of relevant curricula in terms of student and community needs and substantive outcomes. Curriculum design is concerned with the nature and arrangement of four basic parts: objectives, content, learning experiences, and evaluation (Finch & Crunkilton, 1999: 124). According to Ornstein and Hunkins

(2014: 153), the four components of curriculum design's lead to the questions: What should be done? What subject matter should be included? What instructional strategies, resources and activities should be employed? What methods and instruments should be used to appraise the results of the curriculum?

From all these considerations for curriculum design, it could be said that there are multiple factors and issues that need to be thought about seriously while designing curriculum. However, the four core components to be dealt with when curriculum is being designed and implemented are its objectives, contents, learning experiences, and evaluation where objectives and contents are more referred to as the curriculum design while the learning experiences, implementation and evaluation form part of curriculum development.

It can collectively be concluded that it is vital to consider various issues while designing curriculum. These are one's philosophical, educational and curriculum assumptions, learners' needs design components like objectives, contents, learning experiences and evaluation approaches, among some many other things. The question that might be posed here is: is it really mandatory to consider all those issues and criteria proposed by most authors and curriculum researchers as requirements for curriculum design? If it is mandatory, to what extent is it possible to accommodate all criteria set? Furthermore, it is necessary to decide the depth and breadth of the design components based on the purpose for which the curriculum is needed to be designed? Regarding the philosophical views to be considered, it should not be what the curriculum designer accepts or rejects; rather it should be the philosophical views that benefit the learners and the society at large.

2.2.5 Sources of curriculum design

In designing a suitable and relevant curriculum, curriculum planners should always consider political, social, economic, technological and environmental factors and theories in the field of learners' psychology (McKernan, 2008: 31). These considerations might help the curriculum to address both the learners' and the societal needs. Oliva and Gordon (2013: 161) contend that the curriculum planner must

additionally look at the needs of society from the standpoint of their types. According to them, these societal needs are political, social, economic, environmental, defence, health, moral and spiritual, as they are the main societal needs that have implications for the curriculum. The question to be raised here is: To what level is it possible to develop a curriculum that fulfils all these requirements? Curriculum designers must clarify their philosophical, social, and political views of society and the individual learner – views commonly called curriculum's sources.

Curriculum may be designed with reference to its epistemology; its knowledge or subject base (McKernan, 2008: 57).Ornstein and Hunkins (2014: 154) note that if one neglects the philosophical, social, and political questions, he/she designs a curriculum with limited or confused rationale. Educational action (in this case, curricular design) begins with recognising one's beliefs and values, which influence what one considers worth knowing and teaching.

Doll (2010: 23) describes the four foundations of curriculum design as: science, society, eternal truths, and divine will. The curriculum sources identified by Dewey and Bode and popularised by Tyler are knowledge, society and the learner (Ornstein &Hunkins, 2014: 154). McKernan (2008: 57) presents epistemological (traditional), learner-based, objectives-based (technical-scientific) and society and problem-centred as major sources for the curriculum. According to Ornstein and Hunkins (2014: 154) and Oliva and Gordon (2013: 107), science, society, moral doctrine, knowledge, subject matter, and the learner are major sources of curriculum.

Even though it appears that sources of curriculum presented above are dissimilar, they are by and large similar in a nutshell. This is because most of them mentioned science, society, divine will, and knowledge in one way or another. What is worth noting is that it is not to say that all sources of curriculum are taken proportionally. In other words, there is no formula to take each source of curriculum. However, the subject matter to which the curriculum is to be designed influences the type and amount of each source to be considered while designing a curriculum. For instance,

science might take major share in science-related course design and society might play a great role in being source of a curriculum in social science related curriculum.

In summary, the knowledge, learners and society are major sources of curriculum. Curriculum design is by and large highly influenced by political, social, economic, technological, environmental factors and learner's psychology. Therefore, the curriculum designer must analyse both the needs of learners and society as sources of curriculum in addition to the existing knowledge. Moreover, one's philosophical, beliefs and values need to be other sources to be considered while designing curriculum.

2.2.6 Curriculum design dimensions and guides

Curriculum design dimension addresses relationships among curriculum's components. It deals with organisational dimensions such as horizontal and vertical organisations, scope, sequence, continuity, integration, articulation, and balance. Ornstein and Hunkins (2014: 157) note that the organisation of curriculum's components in the process of curriculum design exists along with two basic organisational dimensions: horizontal and vertical.

2.2.6.1 Horizontal organisation

The horizontal organisation to curriculum design refers to organising curriculum elements by the criteria of relation across subjects/contents taught at the same time. The horizontal organisation first helps learners understand and view certain issues from different perspectives and contexts; second it makes knowledge to be retained and lasts in the mind of learners. Ornstein and Hunkins (2014: 157) expound that horizontal organisation blends curriculum elements – for example, by combining history, anthropology and sociology contents to create a contemporary studies course or by combining maths and science content. Lovat (2010: 123) explains that horizontal integration means the deliberate linking of what is being learned from one subject to another. In horizontal organization, subjects separate and compartmentalise knowledge, often in very artificial ways. This denotes that there are different courses that present similar contents within one grade level. According to Lovat (2010: 123), horizontal integration is one way of attempting to break down similar issues in courses

of one grade. This means that one similar issues might be discussed in different subjects but in different contexts. It concerns the concepts of scope and integration that is, the side-by-side arrangements of curriculum elements.

2.2.6.2 Vertical organisation

In curriculum design and development, where contents with similar issues in the curriculum need to be sequenced from simple to complex and from known to unknown is referred to as vertical organisation. This calls for vertical organisation. Vertical organisation to curriculum design, according to Ornstein and Hunkins (2014: 157), refers to the sequencing of curriculum elements. Placing “the family” in first-grade social studies and “the community” in second-grade social studies is an example of vertical organisation. This means that frequently, curricula are organised so that the same topics are addressed in different grades, but in increasing detail and at increasingly higher levels of difficulty. For instance, the mathematical concept of ‘set’ is introduced in first grade and revisited each succeeding year in the elementary curriculum. Vertical organisation of curricular elements refers to the relationship of ideas and contents over time. It centres the concept of sequence and continuity. It is about the longitudinal placement of curricular elements.

Integration is a means of organising educational contents. Horizontal and vertical integration helps the learners to acquire diversified and deepening knowledge and skills on the different issues and helps learners enhance their development and growth holistically. Considering horizontal and vertical kinds of relationships is based on the assumption that the attainment of objectives usually takes a certain amount of time and that a single content and/or learning experience which does not recur at different levels and across contents may have very little effect on the learner. So, the best way is to arrange learning experiences in a way that support and reinforce each other. This is so because it is through cumulative experiences that deep and profound change is achieved.

In sum, the vertical/horizontal aspects of curriculum organisation do not represent a choice between two different dimensions of organisation. Rather, carefully considering both ways of curriculum organisation is regarded as an element of curriculum design

process since it maintains order and coherence among and/or between the components.

2.2.6.3 Scope

Scope refers to breadth or latitude of the curriculum and it shows what must be provided to learners at the different levels of education systems. Scope is what teachers follow while teaching (Ellis, 2013: 53). It denotes the type of educational experiences that are believed by curriculum planners to be appropriate for teaching learners at a particular stage of development so that the expected educational objectives are achieved. According to Ornstein and Hunkins (2014: 158), curriculum designers must consider a curriculum's breadth and depth of content – that is, its scope. The scope ought to be carefully and expertly designed from simple to more complex overtime (Ellis, 2013: 71). Scope consists of the depth and breadth of all the contents, topics, learning experiences, and organising a theme of idea comprising the educational plan (Ornstein and Hunkins, 2014: 157). Hence, considering the issue of the scope helps the curriculum designer to test if the contents of the curriculum are in depth and breadth. The idea is that the contents and sub-contents of a particular curriculum need to be free from being shallow and narrow.

2.2.6.4 Sequence

Sequencing is arranging the contents and materials into some sort of order of succession. Sequence is what teachers predetermine to follow while teaching (Ellis, 2013: 53). Even though sequence is related to continuity, it goes beyond it as it increases the quantity of information to be acquired. In considering the sequence of contents for learners, their accumulated experiences should be considered. The reason for organising contents in sequence is to make learning more strategic and organised. The sequence is putting contents in order ultimately which could be weekly or annually to make continuity certain (McKernan, 2008: 59). Ornstein and Hunkins (2014: 159) note that there is a long-standing controversy over whether the sequence of content and experiences should be based on the logic of the subject matter or the way individual's process knowledge.

Therefore, in order to alleviate a discord on whether curriculum sequence should be based on the kind of subjects being pre-requisites and requisites or based on the level of learners' understanding, a curriculum designer needs to consider both the issues and then analyse them before decision making. All in all, in sequencing, emphasis needs to be given to the importance of having each successive experience built not only upon the preceding one but go more deeply into the matters under discussion. Besides, content that is simple needs to be presented first and the apparently complex one proceeded.

2.2.6.5 Continuity

Continuity in curriculum entails emphasising on the frequent presence of certain contents. According to Oliva and Gordon (2013: 67), continuity is the planned repetition of content at successive levels, each time at an increased level of complexity. According to Tyler (1949), continuity refers to the vertical reiteration of major curriculum elements. By this, Tyler (1949) meant that recurrent and continuing opportunity must be given for the skill to be learned, to be practised and developed. The concept of continuity suggests a need for instruction to be organised so that the ending points of a set of learning experiences match with the beginning points of the next ones. The concept of continuity suggests that if certain contents or sub-contents are repeatedly given to be presented to the students, they would stay in their mind. While commenting on the importance of continuity, Ornstein and Hunkins (2014: 159) present the example that is given by Tyler that: "if reading skills are an important objective, then, it is necessary to see that there is recurring and continuing opportunity for these skills to be practised and developed". This means that the same kinds of skills would be brought into continuing operation over time. For that matter the learners must be given a continuing opportunity for the skills, knowledge and attitude to be learned to ensure meaningful learning. They have to practice the skill again and again until the expected objective is achieved.

The purpose of maintaining curriculum continuity is to provide for cumulative learning to take place. Curriculum continuity is essential to develop ones thinking ability, to bring change in attitude and develop different skills. Commenting on the necessity of

continuity in education, Oliva and Gordon (2013: 67) note that the ideas and skills educators believe students should develop over time reappear over the length of the curriculum as this continuity ensures that students revisit crucial concepts and skills. Continuity is vertical repetition of curriculum components from down to upwards.

2.2.6.6 Integration

Integration refers to linking all types of knowledge and experiences contained within the curriculum plan (Ornstein &Hunkins, 2014: 160). An integrated curriculum design is open-ended, encourages problem solving and directly connects students with the real world (William, 2015). Integration helps learners be equipped with knowledge and skills. Essentially, integration links all the curriculum's pieces so that students comprehend knowledge as unified rather than atomized (Pinar, 2004: 34). Integration is all about bringing contents that discuss diversified issues and blend them together as a single entity. Integration emphasises horizontal relationships among topics and themes from all knowledge domains. Integration is the horizontal relationship of curriculum experiences. The organisation of the experiences should be such that they help the learner increasingly to get a unified view and to unify his/her behaviour in relation to the elements dealt with.

In reference to this reality, it was noted that curriculum theorists and practitioners tend to disproportionately emphasise integration, advocating an interdisciplinary curriculum, which is essentially a curriculum that would not be characterised as standard curriculum content.

2.2.6.7 Articulation

Articulation refers to interfacing curriculum components so that smooth interrelationship is ensured between them. Furthermore, articulation refers to the logical progression of learning objectives from grade level to grade level, from course to course, within the curricular content areas (Oliva & Gordon, 2013: 67). It explains the connectivity of learning that creates seamless learning throughout a student's educational experience. Ornstein and Hunkins (2014: 160) have categorised articulation into two: the vertical and horizontal articulation. Vertical articulation, according to them, usually refers to the sequencing of content from one grade level to

another so as to ensure that students receive necessary preparation for coursework. Horizontal articulation (sometimes called correlation) refers to the association among simultaneous elements, as when curriculum designers develop relationships between eighth-grade social studies and eighth-grade English.

2.2.6.8 Balance

Balance refers to the relative emphasis given to different curriculum components. When designing a curriculum, educators attempt to give appropriate weight to each aspect of the design. In a balanced curriculum, students can acquire and use knowledge in ways that advance their personal, social and intellectual goals. Doll (2010) points out that achieving balance is difficult because we are devoting to localise and individualise the curriculum while trying to maintain a common content. Keeping the curriculum balanced requires continuous fine-tuning as well as balance in our philosophy and psychology of learning (Ornstein & Hunkins, 2014: 161).

In general, curriculum designers need to remember that the balance among the different traits of a curriculum offers a great opportunity to cater for the diverse needs and experiences of learners. Curriculum design dimensions such as scope, sequence, continuity, integration, articulation, and balance are important so that the learning contents are manageable, understandable, get sustenance, gives learners multiple knowledge, and take the learners level of understanding into consideration.

2.2.7 Curriculum design models

Developers of curriculum often use models to illustrate the structure of curriculum design and development. A curriculum model shows the steps involved in the complete development of a curriculum. Using a model in an activity such as curriculum development can result in greater efficiency and productivity (Oliva & Gordon, 2013: 105). According to Finch and Crunkilton (1999: 46), developers of curriculum and instructional materials may choose to communicate via models as the basic concern is on how well the model communicates what is happening in the real world. A model may be defined as a simplified yet communicable representation of a real-world setting or situation (Finch & Crunkilton, 1999: 46).

Ellis (2013: 13) defines a model as ‘a selective representation of something, often compromising elements of space, time and complexity’. Models may be considered in many different ways, depending upon the purpose for which they are intended. Models can be developed in different ways. Some models represent reality via systems whereas others communicate in a linear fashion or via an arrangement of concepts (Finch & Crunkilton, 1999: 46).

According to Ellis (2013: 13), the models of curriculum are three: learner-centred, society-centred, and knowledge-centred. It should be noted that some models may also be systems, and some systems may be models. According to Finch and Crunkilton (1999: 46), if a model can convey realistically what is going on, it is said to be useful. Models communicate in several ways: systematically, procedurally and conceptually. Curriculum models help curriculum developers to select the model that best suits a particular education system. No two models are alike. Models on specific issues, for instance, that illustrate curriculum design may have similar features in common and distinct components that differ from one another. That means models disclose both similarities and differences. Oliva and Gordon (2013: 111) explain that models are inevitably incomplete; they do not and cannot show every detail and every nuance of a process as complicated as curriculum development. Models delineate the curriculum dimensions such the scope, horizontal and vertical integration than to be expressed in words. However, as models do not illustrate all details, the representation should be accompanied with description.

According to Oliva and Gordon (2013: 111), by examining various models, one cannot say that any one model is inherently superior to all other models. For example, some curriculum planners have followed the Tyler model for years with considerable success (Ellis, 2013: 13). A well-developed model should not be complicated but rather illustrates the components and their interface clearly. A curriculum model illustrates ways to curriculum planning and designing and also for curriculum revision. Oliva and Gordon (2013: 111) maintain that before choosing a model or designing a new model, certainly a viable alternative – curriculum planners might attempt to outline the criteria or characteristics they would look for in a model for curriculum improvement.

According to Oliva and Gordon (2013: 111), the model would accomplish two purposes: (1) to suggest a system that curriculum planners might wish to follow and (2) to serve as the framework for explanations of phases or components of the process for curriculum improvement.

There are various types of models for curriculum designs formulated and further developed by different scholars. As a curriculum developer, one cannot choose all the available curriculum models developed. No writer presents and discusses all the existing curriculum models already developed by different authors exhaustively in their literature. Some models are improvement of others' work. It could be noticed that the similarities of models may outweigh the differences. Individual models are often refined or revised according to the current trends that are affecting the educational climate (Oliva & Gordon, 2013: 105). Generally, as there are multiple of curriculum models, it is impossible and yet unnecessary to present all of them. Hence, Tyler's model, Taba's model and Wheeler's model are discussed in the next section.

2.2.7.1 Tyler's curriculum development model

A curriculum can be developed by considering some important preconditions and following certain standard procedures. It can also be developed by considering certain models or sketches of curriculum development as well. The first curriculum development model is the one originally outlined by Ralph Tyler from Chicago in 1949 (Lovat, 2010: 114). As indicated in Lovat (2010: 114), Tyler much focused on the sources of the curriculum and therefore suggested that the following three sources need to be examined:

- The learners and their backgrounds;
- Present and future society;
- Knowledge of the major disciplines, especially Psychology and Sociology.

As presented by Lovat (2010: 114), the major steps in the Tyler approach are shown in Figure 2.2)

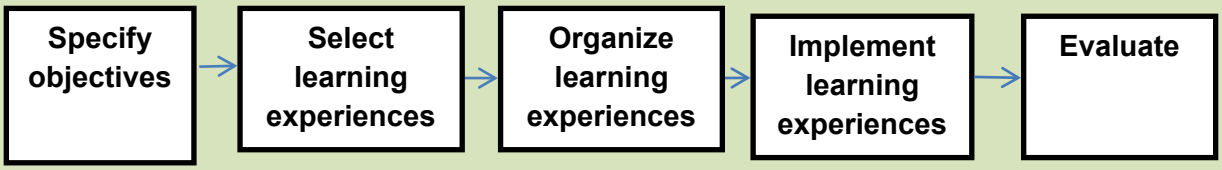


Figure 2.2: Tyler's curriculum model

Source: Lovat (2010: 114)

As illustrated in Figure 2.2, above, the first task to be done in curriculum design is specifying the objectives. He divided the learning experiences into three sub-components: selecting, organising and implementing the learning experiences. The last curriculum component in Tyler's curriculum model is evaluation of the curriculum.

The learning contents, according to Tyler's curriculum model, are developed based on the objectives set in advance. Accordingly, Tyler's approach has been called the 'Objectives model', the 'linear model' and the 'ends/means model' (Lovat, 2010: 115).

The assumption of Tyler approach is to specify objectives as outcomes in advance and appear to fit the –outcome-based approach very well (Lovat, 2010: 115). In the outcomes approach, the learning outcomes are the starting point (Lovat, 2010: 115). Therefore, according to Lovat (2010: 115), many authors contend that the most appropriate curriculum approach for outcomes-based learning is the linear model of Tyler. This might be because in the outcomes-based education system, the intention is what is expected to be gained after the lesson is completed is thought in advance and the contents to be developed are stemmed from those objectives. Furthermore, there is the assumption that Tyler's linear curriculum approach is necessarily the best model for outcomes-based teaching and learning as it is highly simplistic.

According to Oliva and Gordon (2013: 100), Tyler's deductive model is the most famous curriculum planning model. It proceeds from the general e.g., examining the needs of society to the specific e.g., specifying instructional objectives. Tyler recommended that curriculum planners identify general objectives by gathering data from three sources: (the learners, contemporary life outside the school, and the subject matter (Oliva & Gordon, 2013: 105). According to Ornstein & Hunkins (2014:

186), although Tyler did not display his model of curriculum development graphically, several other people such as Popham and Baker (1970) cast the model into the illustration shown in Figure 2.3.

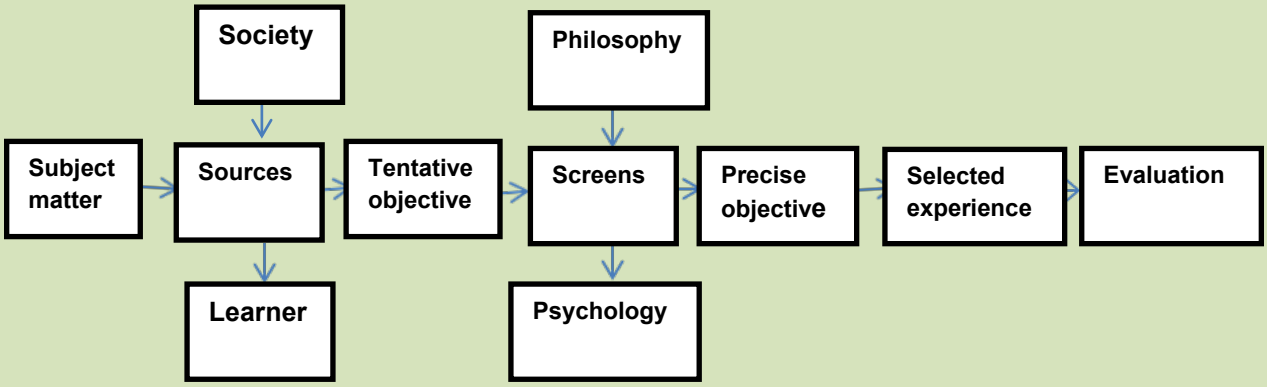


Figure 2.3: Tyler's curriculum development model

Source: Ornstein &Hunkins (2014: 186)

As illustrated in Figure 2.3, the model is linear in nature, starting from objectives and ending with evaluation. In this model, evaluation is terminal. Subject matter, society and learners are taken as sources of the curriculum. Another issue is that tentative objectives are developed from these sources. These tentative objectives should meet the sources of the curriculum. The philosophies and psychology along with the tentative objectives developed based on the sources would be combined and are used as input to the precise objective. The selected experiences would be organised to meet the objectives set. In Tyler's view, evaluation is a process by which one matches the initial expectation with the outcomes.

Tyler's model has strength in that learning needs are thoroughly assessed before objectives are formulated. Nevertheless, some commentators and researchers have criticised Tyler's approach as too linear, too reliant on objectivity, and somewhat based on assumptions about cause and effect; it allows all educational experiences to be justified by the objectives that they address. Nevertheless, Tyler's approach to curriculum development remains popular and still influences education institutes. The strength of Tyler's model is considering the societal, subject matter and learners'

needs. Furthermore, the objectives are leading for all contents. In other words, the learning contents are those that can ensure the meeting of their respective objectives.

2.2.7.2 Taba's model

Taba's model is inductive and more "grassroots," starting with actual development of curriculum materials and leading to generalisation and as the point of departure is the design of material, which then leads to generalisations (Oliva & Gordon, 2013: 107). Taba advocates what has been called the grassroots approach, a model whose steps resemble Tyler's in that the contents development, learning organisation and evaluation are major components of a curriculum. Taba believed that a curriculum should be designed by its users. Teachers should begin by creating specific teaching-learning units for their students and then build it to a general design (Oliva & Gordon, 2013: 107). Taba advocates for an inductive approach rather than the more traditional deductive approach of starting with a general design and working toward specifics (Ornstein & Hunkins, 2014: 180). The assumption of Taba is that as each society is different from one another in their needs, the curriculum design starts from the societal needs. This type of approach is preferable in community development where the community's specific needs are to be decisive to be addressed. This approach is not without its limitation in that it fails to include the country's national, political and development directives. Furthermore, it lacks the objectives for which the curriculum is developed.

Ornstein and Hunkins (2014: 186) point out that Taba's grassroots model entails seven major steps:

- Diagnosis of needs.
- Formulation of objectives.
- Selection of content.
- Organisation of content.
- Selection of learning experiences.
- Organisation of learning activities.
- Evaluation and means of evaluation.

In this approach, the strength is that the approach strives to address the real students' needs. But it excludes other curriculum design considerations like societal needs and

problems which Tyler's approach might address. Furthermore, education is not necessarily only to address and solve problems. It should help learners' intellectual development which is viewed through needs assessment. Another limitation is that it is only the teachers that do all activities from needs assessment to evaluation without the participation of the other stakeholders.

2.2.7.3 Wheeler's model

Wheeler's model for curriculum design is an improvement upon Tyler's model (Lovat, 2010: 116). Instead of a linear model, Wheeler developed a cyclical model as illustrated in Figure 2.4. Evaluation in Wheeler's model is not terminal; findings from the evaluation are fed back into the objectives and the goals, which influence other stages (Lovat, 2010: 116).

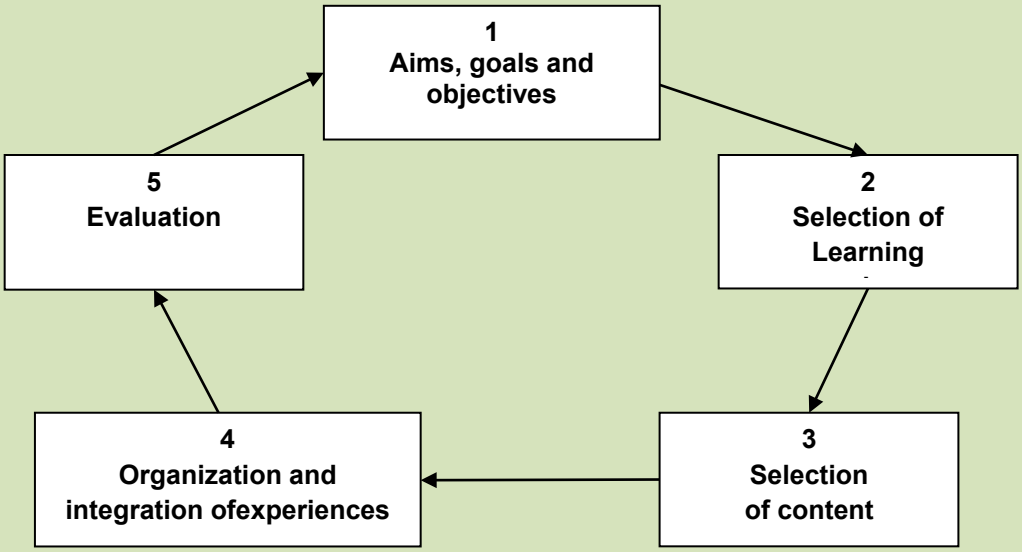


Figure 2.4: Wheeler's model

Source: (Lovat, 2010: 116).

As depicted in the Figure 2.4 above, Wheeler's curriculum development model is cyclical. Wheeler's curriculum development model shows that curriculum is dynamic and should be designed, implemented and evaluated and then based on the evaluation, let it be re-designed for betterment.

Wheeler (2010: 16) contends that:

- Aims should be discussed as behaviours referring to the end product of learning which yields the ultimate goals. One can think of these ultimate goals as outcomes. Aims are formulated from the general to the specific in curriculum planning. This results in the formulation of objectives at both an enabling and a terminal level.
- Content is distinguished from the learning experiences which determine that content.

In general, all curriculum models have some universal components. For instance, all models have objectives, learning organisations and evaluation. The difference is who should do what. For instance, in Tyler's model, it is the administrative body that is primarily expected to design curriculum while in Taba's model, the teacher plays central theme. What is principally different in the Wheeler's model from the Tyler's and the Taba's models, for instance is it is cyclic. It can be concluded from all the models presented for designing curriculum, that, one can use what he thinks workable. One can take one of the existing models as it is or taking some ideas and approaches than taking the whole and bring them together to form his own model. For instance, for children's curriculum, the beginning could be to conduct learner's needs assessment as proposed by the Taba's model. For a university and vocational education, the holistic societal and learners' needs assessment that is suggested by Tyler can be used as the beginning of curriculum design and development process.

2.3 Chapter summary

The chapter presented literature reviewed on the general education and curriculum design and development issues. The issues of philosophies in relation to education were discussed. It was reviewed that there is no single and particular definition for philosophy and that philosophy has different implications for different people.

It was also presented in the chapter that philosophy of education is vital in the curriculum design process because curriculum design decisions should neither be made from the scratch, nor is it something that curriculum developers simply gathered and do the work of writing. The four basic philosophies of education naming,

perennialism, essentialism, progressivism and reconstructionism were presented in the chapter. Considering the relation of these philosophies to vocational education programme in general and vocational curriculum design in particular, in most cases, all the four philosophies are relevant as they hold contents and contextual ideas that are fundamentally vital in vocational education.

Different definitions given to curriculum design and curriculum development along with their implications were also presented. Definitions of curriculum are given based on the purposes, settings in which the curriculum is found and methods used throughout the curriculum. Educators interpret curriculum in different ways partly because of their own different perceptions, philosophical beliefs and contexts in which they experience it. From all the definitions given by different scholars and theorists on curriculum design and curriculum development, it is noted that curriculum design and development are conflated together in that there is no clear and discrete difference between the two. In other words, curriculum design and development are not distinct activities in totality. Indeed, if they have to be put in sequence, curriculum design comes first and curriculum development follows.

The chapter presented various issues that need to be considered during curriculum design and development. From all these considerations for curriculum design, it could be said that there are multiple factors and issues that need to be thought about seriously while designing curriculum. Issues which are considered in curriculum designs such as sources of curriculum design, curriculum design dimensions and guides were presented in detail. Therefore, it is reviewed that curriculum design dimensions such as scope, sequence, continuity, integration, articulation and balance are important to develop the curriculum that comprises learning contents that enable learners acquire all the required knowledge and skills. Furthermore, curriculum design models developed by different scholars and authors such as Tyler’s, Taba’s and Wheeler’s were presented in the chapter. It could be noted from curriculum models presented that in general, all curriculum models have some universal components.

CHAPTER THREE: LITERATURE REVIEW II

TVET SYSTEMS, PHILOSOPHIES AND CURRICULUM DESIGN AND DEVELOPMENT

This chapter (Chapter Three) is the continuation of Literature review I that is already presented in the preceding chapter (Chapter Two). In this chapter, major issues namely, philosophies of education and the basic concepts on curriculum design, methods and models developed by different authors and scholars are discussed. This chapter (Chapter Three) presents the second literature reviewed by the researcher. This chapter dealt with the general TVET system, philosophies, TVET curriculum design and development, and its related issues.

The chapter contains three major sections. The first section presents general the TVET systems. In this section the definitions of TVET, TVET systems, TVET curriculum design and models for/of TVET curriculum design are discussed. The second section of the chapter deals with concepts, philosophies and models of TVET curriculum design. In this section, the definitions and major distinctive features of TVET curriculum are analysed. Furthermore, the TVET curriculum design and development methods stipulated by different authors and organisations for TVET curriculum in general and for that of outcome-based TVET curriculum in particular along with their philosophical bases are also introduced and discussed. The third section of the chapter presents the Ethiopian TVET system and curriculum design and development approaches. In this section, the historical context of the Ethiopian TVET system in different eras and regimes are reviewed. Furthermore, the present TVET system on the whole and the outcome-based TVET system that Ethiopia is presently implementing in particular along with the curriculum design and development approach are thoroughly discussed.

3.1 General TVET systems

3.1.1 Nomenclatures and definitions of TVET

There is no uniform and a single naming of vocational education programmes worldwide. It varies from country-to-country, from authors-to-authors, from literature-to-literature and even from organisations-to-organisations. In some countries like Scotland, vocational education is rather named as “Technical Education (TE)” (UNESCO, 1982: 20). Some other countries like UK, Germany and most Southern African countries like South Africa and Botswana (Akoojee & et al., 2005: 64; Werner& et al., 2012) name it “Vocational Education and Training (VET)”). Countries such as China and Nigeria on the other hand call it as “Technical and Vocational Education (TVE)” (Zhao & Raune, 2014: 25; Saidu & et al., 2015: 2). Furthermore, other countries such as Ethiopia name it “Technical & Vocational Education & Training (TVET)” and still there are some countries that use more than one naming for designating vocational education. For example, South Africa uses both VET and TVET to name the vocational education system (Akoojee & et al., 2005, 76). Different nomenclatures are also used in some working documents and discussion papers to name vocational education. Even international organisations like the United Nations Education Scientific and Cultural Organisation (UNESCO) and UNEVOC use more than two different terms to express vocational education even within the same document (UNESCO, 1982: 76; UNEVOC, 1993: 42). Authors also use varied terms to express the same thing. For instance, Finch and Crunkilton (1999: 28) and Zhao and Raune (2014: 48) use the term ‘Vocational & Technical Education (VTE)’ and ‘Technical & Vocational Education (TVE)’ respectively to name vocational education in their books. In general, there is no clearly known reason as to why authors, countries and organisations use different naming for vocational education.

Werner & et al. (2012: 1) points out that different nomenclatures are used interchangeably in the working and discussion papers with him preferring to use the two terms – ‘VET’ and ‘TVET’ to refer to qualifying education paths that provide individuals with occupations-specific knowledge and practical skills, independent of the place, content, and the provider of education. Unless taken from other sources, the

nomenclature ‘Technical & Vocational Education & Training (TVET)’ is what is used in this study. This is primarily, because though nothing is said why chosen, Ethiopia has been using the term ‘TVET’ for many years to name vocational education. In this view, though no written document could be found on why Ethiopia is using the term ‘TVET’ to express vocational education, one can assume that it might be because the ‘Ethiopia TVET system’ is striving to encompass all blue and white collar work-related-vocational and technical education and training issues aiming to create and further develop a comprehensive and integrated outcome-based TVET system in the country (MoE, 2008: 2).

3.1.2 Definition of TVET and its significance

Vocational education is distinct from academic education in a number of ways. Vocational education focuses more on fulfilling the learners’ and societal needs and yield practical results. In light of this, Yusoof (2013: 14) points out the way vocational education differs from that of academic education as follows:

> Vocational courses differ from other formal academic education courses in that they are designed to deliver industry standard training, which are developed in consultation with industry representatives, delivered and assessed against industry specific competency standards and designed to provide clearly defined pathways to further education, training and employment.

While pointing out what the vocational education should look like, Tubsree and Bunsong (2013: 38) also stated that “Education (including technical and vocational education), has a social function as well. Its proposition is not only to prepare people for employment, but also to educate them for their whole lives so that they can cope with changes and be afforded a better mobility”. According to Sithole (2012: 10), the term vocational education historically has meant instruction designed to prepare individuals for the world of work. According to Yusoof (2013: 15), the standards developed by industry are input for vocational courses. In spite of the fact that it conveys nearly similar meaning, ‘TVET’ is defined differently by different countries,

organisations, institutes and authors. According to UNESCO, TVET is defined as 'all forms and levels of the educational process involving, in addition to general knowledge, the study of technologies and related sciences and the acquisition of practical skills, expertise, attitudes and understanding relating to occupations in the various sectors of economic and social life' (UNESCO, 2001: 2; Saidu et al., 2015: 1). Yusoof (2013: 27) adds that vocational education in a much broader sense covers education and skill development at all levels from post primary to tertiary education – both through formal and non-formal programmes. Werner et al. (2012: 1) refers to TVET as "to qualifying education paths that provide individuals with occupations-specific knowledge and practical skills, independent of the place, content, and the provider of education".

Most authors commonly agree that TVET aims to prepare individuals for work. They have also mentioned commonly that TVET is important as it enhances a person for life and provides the knowledge and skills which are necessary in the society. Furthermore, nearly all of the authors concur that the major role of the TVET programme is to prepare individuals to the world of work and that TVET can be provided in all forms of educational programmes.

Furthermore, UNESCO (2002: 7) documented that technical and vocational education should further be understood to be:

- an integral part of general education;
- a means of preparing for occupational fields and for effective participation in the world of work;
- an aspect of lifelong learning and a preparation for responsible citizenship;
- an instrument for promoting environmentally sound sustainable development;
- a method of facilitating poverty alleviation.

However, some authors have incorporated some concepts in their definition specifically while others are limited their definitions to some issues and refrain from incorporating other issues intentionally or unintentionally. For instance, UNESCO (2002: 7) specifically discusses TVET to address all forms of learning (formal, non-

formal and informal) at all levels (from post primary to higher level of learning) and study of technologies and related sciences. However, according to Sithole (2012:14), the term vocational education refers to instruction designed to prepare individuals for the world of work.

The definition given by the Federal Ministry of Education of Ethiopia to TVET focuses more on its importance to create competent and productive citizens in specific economic sector for which the learners need to be qualified (MoE, 2008: 14). According to MoE (2008: 14), TVET refers to deliberate interventions to bring about learning which would make people more productive (or simply adequately productive) in designated areas of economic activity e.g., economic sectors, occupations, specific work tasks. All these definitions given to TVET point to the paramount importance of the acquisition of practical knowledge, skills and attitudinal changes in any training programmes to be offered by TVET institutes so that they can prepare people for the world of work.

3.1.3 The role of TVET in socio-economic development

Zhoa and Raune (2014: 127) underscore the paramount importance of TVET for socio-economic and personal development. TVET is vitally important because a country cannot achieve economic and social development without a skilled, productive labour force that can meet the changing requirements of its environment (Zhao & Raune, 2014: 127). On the significance of TVET for earning living, Zhao and Raune (2014: 127) note that TVET is important because it can offer better educational choices and pathways for disadvantaged youths. Finch and Crunkilton (1999: 13) state that the TVET learning environment makes provision for student development of knowledge, manipulative skills, attitudes, and values, as well as the integration of these areas and their application to simulated and realistic work settings. From all explanations given by different organisations like OECD and authors like Zhao and Raune (2014: 128) and Finch and Crunkilton (1999: 147) pertaining to the importance of TVET, it can be concluded that the main role of TVET is to provide learners with the opportunity to be enriched with vocational knowledge in an occupation for which they wish to qualify.

According to Finch and Crunkilton (1999: 18), the ultimate success of a vocational and technical curriculum is not measured merely through student educational achievement but through the results of that achievement that take the form of performance in the workplace. Therefore, the vocational and technical curriculum, according to Finch and Crunkilton (1999: 12), is oriented toward process and product. Hence, according to Finch and Crunkilton (1999: 12), it is not only the outcome that is needed, the learning process through which it is passed also matters. Sithole (2012: 15) intimates that the main objective of TVET is to equip and train people with knowledge, expertise, skills and/or competences required in particular occupations or more broadly on the labour market. According to Yusoof (2013: 14), it is the 'labour market demand' that leads the learning process in TVET programme. The question that might be raised is to what level the real labour market demand can be known and really followed while designing curriculum as the labour market demand is highly flexible.

Finch and Crunkilton (1999: 22) note that there is dual need of TVET to equip learners with knowledge and skills and to enable learners to be employed. Yusoof (2013: 18) specifically focuses on the importance of TVET to produce skilled workforce that meets labour market's needs. From the expression of views given on the need of TVET by different authors and theorists, it can be noted that some of the TVET roles are to enable learners be competent enough in specific tasks, and consequently enable them have employable skills and competences that meet what the labour market demands. Here, what needs to be noted is that there is difference between labour market demand and employers' demand. Labour market demand is what specific products or services the users want to have and the competence required from learners to fulfil these users' needs. On the other hand, employers demand is the competence the employers demand from the employees they recruit. This means the employees need the relevant skills to perform the tasks according to the standard laid down by the employers in specific work or activities. The labour market demand can be referred to as the competence demand that enable learners to create their own job while employer's demand is the competence the employers expected from the employee.

3.1.4 Classification of TVET systems

There are various TVET systems that have been exercised worldwide. According to Werner et al. (2012: 1), TVET systems around the world can be classified into four distinct systems:

- school-based,
- a dual apprenticeship system combining school training with a firm-based approach,
- informal-based and
- outcome-based.

School-based TVET often follows a formal curriculum that combines general and occupation-specific knowledge (Werner & et al., 2012: 22). The dual apprenticeship VET system aims to combine general, transferable skills acquired during class-based VET with structured learning on the job and actual work experience within a training company (Werner & et al., 2012: 14). According to Werner & et al. (2012: 14), the informal TVET system considers 'recognition to prior learning, and outcome-based TVET is the vocational education system in which training programmes are designed based on labour market demands'. As Ethiopia is currently pursuing the outcome-based TVET systems, discussions in the TVET systems in general and the Ethiopian TVET system in particular focus on the outcome-based TVET systems.

3.1.5 The Outcome-Based Education/ Training Systems

The term 'outcomes-based and 'outcome-based' are used interchangeably specifically in academic /non-TVET/ arena. Meanwhile, the term 'outcome' instead of 'outcomes' is widely used in TVET disciplines. Unless it is taken from a specific source, the term 'outcome-based' is used thorough out this document while discussing TVET in this study.

As often in the case of the social sciences, different authors define outcomes-based education differently. With regard to the issues of definition of 'outcomes-based', Lawson and Askell-Williams (2007: 3) note that there are many different versions

practised in different ways in different places, all with the label outcomes-based education. According to him, outcomes-based education is not a single idea or set of procedures; rather outcomes-based education is like democracy (Lawson & Askell-Williams, 2007: 3). Furthermore, Lawson and Askell-Williams (2007: 3) argue that this may be the case because outcomes-based education provides training institutes with the opportunity to design their own educational programme based on their felt needs per se. For the purpose of this study, outcomes-based education and training systems can be viewed from two perspectives. The first one is outcomes-based education which often refers to general academic education, and the second one is the so called outcome-based /Competency-Based/ TVET System, which refers to vocational education.

3.1.5.1 Outcome(s)-based education

Outcomes-based education originated in school education literature (Lee & Rogers, 2013: 45). According to Spady (1993), 'outcomes-based education' means focusing and organising a school's entire programme and instructional efforts around the clearly defined outcomes we want all students to demonstrate when they leave school (Marsh, 2004: 38).

A very successful and leading proponent of outcomes-based education in the USA has been William Spady. According to Spady (1993), "outcomes-based education' means focusing and organising a school's entire programme and instructional efforts around the clearly defined outcomes we want all students to demonstrate when they leave school" (Marsh, 2004: 28).

Citing Hansen (1989), Marsh (2004: 28) explains that the intended learning results of outcomes-based education are the start-up points in defining the system. The focus of outcomes-based education is upon competence as well as content but not on the time needed to reach this standard.

Some states within the USA such as the Pennsylvania Department of Education were enthusiastic about outcomes-based education and recommended it be used throughout the state (Glatthorn & Jailall, 2000 in Marsh, 2004: 29). However,

according to Glatthorn and Jailall (2000), by the mid1990s outcomes-based education was being widely criticized in terms of:

> (a) its over emphasis on outcomes rather than processes; (b) schools inflicting values that conflicted with parental values; (c) lack of hard evidence that OBE worked; (d) fears that OBE would 'dumb-down' the curriculum and lead to lower standards; (e) concerns that content becomes subservient under an OBE approach; (f) student outcome statements being difficult and expensive to assess.

As a result, outcomes-based education in the USA rapidly declined in the 1990s to be overtaken by standards-based (content standards) and constructivist approaches (Glatthorn & Jailall, 2000 in Marsh, 2004: 29).

According to Lee and Rogers (2013: 45), the advocates of the outcomes-based education system seem to focus more on the philosophy, politics and organisation of education than on curriculum per se, with an emphasis on the outcomes than the inputs to education. Remarking on outcomes-based education, Lawson & Askell-Williams (2007: 3) note that:

> There is no one agreed version of outcomes-based education and different versions may show an outcomes-based influence in different ways. However, we can make a broad division between curriculum frameworks where outcomes-based education has been mixed with an existing curriculum approach.

From Lawson & Askell-Williams (2007: 3) views above, it can be noted that existing curriculum means the traditional academic curriculum and therefore shows that outcomes-based education approach comes from the tradition of outcomes-based education. The traditional curriculum is based on the belief that the curriculum process should begin with the explicit statement of the outcomes expected and that curriculum content, processes, structures and resources should be planned to expand children's and students' opportunities to achieve the outcomes. It appears from the Lawson & Askell-Williams (2007: 3) views above that outcomes-based education is closely

related to the widely used approach to curriculum design advanced by Ralph Tyler. The starting point in Tyler's approach was specification of objectives, followed by the selection and arrangement of learning experiences relevant to those objectives, and the evaluation of the extent to which the objectives had been met(Lawson & Askell-Williams, 2007: 3).

Outcomes-based education perspective is strongly future-oriented in that it requires one to imagine both what the future would look like and how we want our students to turn out at the end of their education (Lawson & Askell-Williams, 2007: 3). As Spady (1993) in Oliva and Gordon (2013: 179) explains, outcomes employed in a critically insightful way can contribute to enhanced teaching and learning within a framework of a curriculum that is expanded and relevant to the present and future lives of students and teachers. Once these outcomes have been identified, it is possible to move to specification of how such outcomes would be achieved (Lawson & Askell-Williams, 2007: 3). As could be perceived from the expressions given on the outcomes-based education by Spady (1993) and Lawson & Askell-Williams (2007: 3), the major challenge in designing outcomes-based education is anticipating and deciding on what the outcomes would be as the future is oftentimes filled with uncertainty. There are many reasons that have been discussed for the movement towards an outcomes-based approach. In light of the emerging of outcome-based education, Oliva and Gordon (2013: 179) expound what educators contest on outcomes-based education as follows:

> Some educators would argue that it is following reforms that have taken place in the vocational education sector because of changes to industrial awards and to the structure of employment in the public sector and corporate world. Some educators would suggest that it was a movement from input-driven schooling to outcomes driven schooling in an attempt to reduce expenditure on education because of falling national economies.

Both the aforementioned arguments held by different educators on the emergence of outcomes-based education documented by Oliva and Gordon (2013: 179) hold true as

firstly, the industry has demanded result-oriented approach to tasks to be performed by workers (Oliva & Gordon, 2013: 179) as it scaffolds the idea that outcomes-based education emerged following the industrial reforms. Besides, the suggestion that outcomes-based education has emerged to reduce educational expenditure might have been true partly because the outcome-based education system requires relatively minimum cost than the traditional ones as it concentrates merely on the training contents that enable learners perform their work (Lawson & Askell-Williams, 2007: 3). Such arguments may reflect some deeper reasons that are associated with fundamental changes in the social contexts in which the assessment practices are embedded. The emergence of outcomes-based education might also be to make focus-based training and preparing learners for specific tasks. It also makes the curriculum and instruction flexible and adaptable so that education costs can be minimised.

3.1.5.2 The Outcome-based /competency-based/ TVET systems

The term ‘outcome-based’ appeared in vocational education literature towards the end of the 20th century (Lee & Rogers, 2013: 28). In the TVET programme arena, the terms ‘outcome-based’ and ‘competency-based’ are widely used interchangeably to express the TVET system. Fretwell et al. (2001: 5) define outcome-based vocational education and training as a means of making competent citizens to perform activities common to an occupation, within an acceptable range as occupational competence. Occupational competence is defined as the ability to perform the activities within an occupation or function to the standards expected in employment (Burke, 1995: 79)

In some literature such as that of Krishnan (2013) and MoE (2008: 34), the term outcome-based is widely used, while in some literature developed by UNESCO for instance, the term competency-based is instead widely used throughout the document (UNEVOC, 1993: 22). However, literally there is difference in their meaning in that the outcome-based system focuses more on the work performance expected to be executed by the learners as a result of training given to them after the completion of the learning process. On the contrary, competency-based refers to competency levels such as skills, knowledge and attitudinal changes expected from the learners after the

completion of the learning process. The competency-based system is the system in which the curriculum is developed so that the trainees after completing the course areexpected to perform the tasks given according to the performance criteria given in the competency standard (Shaorshadze & Krishnan, 2013: 18). This approach has come to dominate the vocational education and training sector in the developed world and coming to the developing countries as well (Schnellert, 1993: 45).

In the Ethiopian case, for instance, both the outcome-based and competency-based terms are widely used though outcome-based is so technical in that it refers to a unit of occupational standard which has two or more tasks to be accomplished within it (MoE, 2007: 12). According to UNEVOC (1993: 18), competency-based vocational education is defined as an education system which emphases the specifications, learning and demonstration of those competencies (knowledge, skills, behaviour) which are of prime importance for a given task, activity or career. The delivery of this system is student-oriented and individually-paced. That means every trainee may not necessarily go in similar pace as there is individual difference and other factors. However, in the end, in order to be certified, a TVET candidate needs to demonstrate his/her competence through passing the assessment developed by the industry based on the occupational standard already set (MoE, 2008: 18).

3.1.6 Occupational standard and occupational competency

One of the issues worth discussing in the debate of outcome-based TVET systems is the occupational standard. This is because curriculum along with all its learning materials needed would be developed based on the standards. Occupational standard is defined as the duties which must be performed by a person to function successfully in an occupation (Fretwell et al., 2001: 5). Occupational competency on the other hand, is defined as “the knowledge, skills and attributes necessary to perform occupational functions” (Schnellert, 1993: 82). The difference between the two is that the occupational standard primarily deals with duties and tasks while occupational competency mainly refers to the ability to perform tasks indicated in the occupational standard.

Occupational standards must reflect ongoing economic and technological changes in the economy that result in changing skill demands in the labour force (Fretwell et al., 2001: 13). It implies that occupational standard should indicate the future and upcoming technologies in the world of work. Before embarking on the development of occupational standard, stakeholders need labour market information to provide “early warning” and identify priorities for standards development in occupations that are changing rapidly, meaning existing standards need updating and are in new emerging fields of work (Fretwell et al., 2001: 13). By implication, the occupational standard does not only hold for the present required duties but also anticipate the future as it lasts long.

3.2 Concepts, philosophies and models of TVET curriculum design

In this section, the definitions and major distinctive features of TVET curriculum are briefly discussed. Furthermore, the distinctions between TVET curriculum design and curriculum development that are explicated by different scholars are presented. The TVET curriculum design and development methods suggested by different authors and organizations are also discussed. Finally, the philosophical bases for TVET curriculum design in general and for the outcome-based TVET curriculum design in particular along with some models are presented.

3.2.1 Definitions and features of TVET Curriculum

Authors on curriculum design and development such as Oliva and Gordon (2013) and Ornstein and Hunkins (2014) often discuss curriculum from the general academic education perspectives. Engelshoven (2014: 6) for example defines TVET curriculum as a planned document for the realisation of the education process that contains the description of education tasks and means of accomplishing those tasks as well as the ways to evaluate the results of this process. From the definition of Engelshoven of TVET curriculum, it could be noticed that no single word is referring to features of vocational education. Rather, it sounds as if the definition given refers to academic education.

Nevertheless, authors like Finch and Crunkilton (1999: 12) have pointed out the difference between academic curriculum and TVET curriculum. While depicting the distinction between vocational curriculum and the rest of education setting, Finch and Crunkilton (1999: 12) expound as follows:

> Even though vocational and technical education is included within the overall framework of education, the vocational and technical curriculum has certain characteristics that distinguish it from the rest of the educational milieu. These characteristics represent a curricular focus that may be best associated with curriculum building, maintenance, and immediate and long-term outcome. Whereas each of these characteristics is, to a greater or lesser degree, associated with other curricula (e.g., general or academic), their influence on the vocational and technical curriculum development process is important to note.

From the views expressed by Engelshoven (2014: 8) about TVET curriculum, nothing is said about the features that make TVET peculiar from non-TVET /academic education ones. However, it was noted that despite the differences in aims, the principles and theories used for general education fundamentally can be the foundation for technical and vocational education as well. Engelshoven (2014: 8) maintains that besides the content, the term vocational curriculum encompasses the “environment” in which the learning activities are performed, namely, learning and teaching conditions, processes, activities and actions that lead to the accomplishment of educational and learning goals. This signifies that TVET may be given in either formal or non-formal learning programmes as it can be given in the schools or outside schools.

As suggested by UNEVOC (1993: 5), the effectiveness of a vocational education system, dependent on a well-developed curriculum, must be measured by the extent to which it is able to attract the young generation into the occupation of the future and skills which employers need. That means TVET curriculum should be developed in a way to enable it to motivate the interest of learners towards the field. TVET should not be confined to technical skills. It should also incorporate learning contents that

contribute to their future lifelong learning. As indicated in UNEVOC (1993: 5), the success of a training system is to deliver not only technical contents (technical skills) but also to help students learn how to cope with new challenges (coping skills) and prepare them for lifelong learning to provide people with the basic set of skills it takes to transfer from one job or area of work to another. The TVET curricula also inevitably need to be different from the academic curriculum in that it provides trainees with the skills and knowledge necessary for vocational competence and for entry into the world of work (Sithole, 2012: 14).

In vocational curriculum content selection, the contents that enhance the learners' holistic competence and mental development should enable them to be competent enough in the field to be qualified. In light of this, Finch and Crunkilton (1999: 12) explicate that curricular focus in vocational and technical education is not limited to the development of knowledge about a particular area. According to them, the vocational and technical curriculum deals directly with helping the student to develop a broad range of knowledge, skills, attitudes, and values, each of which ultimately contributes in some manner to the graduate's employability. However, the benefit is not only employability of a TVET graduate but also the ability to create their jobs. Indeed, this holds true if self-employment is expected from the students. These discussions above indicate that the reasons why students are made to train need to be considered in order to design the curriculum. Hence, the issue of whether the training programme is intended for employment or to create work after completion of whole or part of the competences in the training programmes or for self-employment need to be clearly known. Furthermore, what the organisational behaviours of the employing organisations need to follow and to what extent the labour market demands are stable or flexible need to be well-known ahead before curriculum design.

In sum, what makes TVET curriculum different from the general academic programmes is that the main target of academic programme is not to enable learners perform specific tasks. In TVET unlike academic programme, the trainees are expected to perform tasks according to the performance criteria to deliver competitive and quality product or service for the employers. If they are planned to create their

own jobs, courses such as entrepreneurship and other courses that contribute to make them capable to efficiently operate and manage their business need to be included in the curricula. Moreover, the courses should be delivered in ways that enable trainees to attain technical, practical and managerial competencies both in industry and school environments.

As indicated in UNESCO's document (UNEVOC, 1993: 3), TVET curriculum development has long been regarded as a core-component of TVET programme. In connection with this, Finch and Crunkilton (1999: 3) pointed out on what contemporary vocational education should concentrate more on as follows:

> The vocational and technical curriculum focuses not only on the educational process but also on the tangible results of that process. This is only one of many reasons why the vocational and technical curriculum is distinctive in relation to other curricular areas and why vocational education curriculum planners must have a sound understanding of the curriculum development process.

From the explanation of Finch and Crunkilton (1999: 3) above, it could be noted that the educational process and the results that are obtained from the process need to be considered. The process can be evaluated through monitoring the implementation and the scores achieved by the trainees can be evaluated through competency assessment at the time of completing the training. Therefore, all activities that are carried out in the curriculum design and development process need to direct to the outcomes that enable the learners perform tasks as per the standards set by employers if they are to be employed and/or need to enable learners acquire the competences that make them create their own work if they are to be self-employed. Therefore, curriculum designing process must be done in a way that the actual goals of the training intended i.e. employment or job creation are properly considered.

Another issue that needs to be examined during TVET curriculum design is the criteria to be set for the entrants and target groups. Zhao and Raune (2014: 176) suggest that TVET curricula would have to consider specific requirements of the target groups and

specific local labour market situations. Zhao and Raune (2014: 187) maintain that the TVET curriculum should focus on the learners and local-specific labour market, whereas Finch and Crunkilton (1999: 145) emphasise that the TVET curriculum should focus on achieving the outcomes that are expected in the future. In other words, learning in vocational education should not be merely for mental development of the students. It should also help learners get prepared for life and work and future societal demands.

UNEVOC (1993) also suggests what TVET curriculum need to comprise than defining it. Accordingly, UNEVOC (1993: 5) suggests that a TVET curriculum must provide information on the following aspects of learning:

- At whom is the educational processes aimed?
- What goals and qualifications are to be achieved?
- What contents are to be learned?
- What teaching methods and aids are to be used?
- How is the result to be tested?

What makes the UNEVOC's suggestion different is what TVET needs to include from those of academic programmes, is that unlike the academic programmes in which the goals are not necessarily coined in terms of what to perform at the end, in TVET, the qualification the students deserve need to be anticipated. Furthermore regarding the evaluation and assessment, unlike in academic in which most paper-pen work is done, in the outcome-based TVET system, the competence needs to be measured, specifically and formulating anticipated qualifications that training completers should attain after being measured in the competency assessment.

From all discussions above on the features of TVET curriculum, it emerged that even though the principles and theories used for academic education can be the basis for TVET, the TVET curriculum has certain features that differentiate it from the curriculum to be developed for academic programme, in that the TVET curriculum aims at providing trainees with the skills and knowledge necessary for vocational competence and for entry into the world of work.

3.2.2 TVET curriculum design and development methods

The concepts “curriculum design” and “curriculum development” are occasionally confused and substituted for one another. However, there is subtle difference between the curriculum design and curriculum development. According to Xu (2005), curriculum design refers to the confirmation of objectives and contents, while curriculum development also incorporates the implementation and evaluation of curriculum (Zhao & Raune, 2014: 191). This implies that curriculum design is a part of curriculum development while curriculum development adds the verification of the execution and assessment on the design of the curriculum. Unless one is considered in light of the other, there is no clear demarcation between curriculum design and curriculum development. Finch and Crunkilton (1999: 35) divide the TVET curriculum components in two parts. They categorised the first two curriculum components, i.e. formulating objectives and needs analysis to the design parts and the rest of parts, i.e. learning strategies and evaluation to be grouped to the curriculum development. Xu (2005) in Zhao and Raune (2014: 191) also place objectives and contents in the TVET curriculum design while curriculum development incorporates, according to them, the implementation and evaluation components. All these indicate that curriculum design precedes the curriculum development if they have to be put in sequence though there is implicit overlap between two.

Some authors on TVET curriculum design and development methods, such as Finch and Crunkilton (1999: 122) and Rampedi (2001: 19), for instance, have defined TVET curriculum in the same way as the general academic authors such as Print (1993). For instance, Print (1993: 97) and Ornstein and Hunkins (2014: 175) write that most curriculum designs are modifications or interpretations of three basic designs, namely, subject-centred designs, learner-centred designs, and problem-centred designs. These basic designs are known as sources of curriculum (Ornstein & Hunkins, 2014: 189). This means the design is the learning needs which the objectives, learning organisation and strategies would subsequently ensure. Finch and Crunkilton (1999: 134) indicate that curriculum design is the first and fundamental stage as it can bring

about negative or positive impact on the rest of the stages. It could be noted that most authors give explanations on the curriculum design from the academic perspectives.

From all the explanations given above on the curriculum design and development, it should be noted that the definitions given by different authors slightly vary based on their perspectives. The definitions given by authors who present both curriculum design and curriculum development together in their discussion and the definitions given by those authors who see only one concept separately, i.e. either only the curriculum design or only the curriculum development are not the same. In this regard, those who discuss taking only about one case say, only the curriculum design or only the curriculum development, are noted equating the definition of curriculum design with that of curriculum development. On the other hand, those who discuss by twining both curriculum design and curriculum development together, try to show by differentiating the meanings both of them have. However, generally, it can be noted that curriculum design and development are not distinct components, and if one should precede the other, it is the design that precedes development.

3.2.3 Challenges and considerations in TVET curriculum design

TVET systems everywhere are facing challenges to prepare a sufficient number of people with the right skills to meet labour market demands (Zhao & Raune, 2014: 129). According to Fretwell et al. (2001: 2), developing countries face a number of challenges, as compared to developed countries in designing national occupational and training standards and related assessment systems. This might be because developing countries are not the conceivers of the TVET systems. In fact, generally, curriculum design and development is not an easy task. Zhao and Raune (2014: 78) concur that curriculum design is a complex and systematic process. This is because there are multiple of issues to be considered when designing a curriculum. In reference to this reality, Finch and Crunkilton (1999: 29) note, “Unfortunately, fewer vocational curriculum designs have been produced in TVET than would be hoped in developing countries”. However, apart from stating that TVET curriculum design is difficult for developing countries, nothing is said by these authors as to what developing countries have as missed gaps and the causes for the existing gaps, what

can be adopted from the developed countries and what ought to not to be taken, how to take on and bring in, and how to adapt the espoused systems. To this regard, it is stated in UNEVOC (1993: 8) that owing to the lack of resources, experience and traditions, there have been certain tendencies in some developing countries simply to copy existing curriculum materials from industrialised nations without proper adaptation to the local situation and needs, which has often proved to be inappropriate and wasteful. This problem might happen because of the lack of competence from developing countries to adopt other countries experience on the one hand, and to customise and adapt the approaches and technologies espoused from developed countries to the developing countries' real environmental situations on the other hand.

The issue of the TVET curriculum as to if it should be developed based on the available resources or to be developed based on the standard set remains debatable. Fretwell et al. (2001: 2) maintain that a country may decide to start with pilot activities at the local level in high priority occupations and sectors, and then move to a national approach. UNEVOC (1993: 5) argues that it should be known what developing countries need to know, who should take up the initiatives, as TVET curriculum is more subjected to political decisions and therefore oftentimes rare to be changed or modified even if the need arises, once implemented without prior accord of politicians.

Thus, according to UNEVOC (1993: 6), the following issues need to be considered when TVET curriculum is designed and developed:

- Curriculum developed for vocational training should not only meet the goals and objectives of training but also be implemented effectively.
- In the competency-based individualised curriculum development, the subject matter should be divided into modules.

The above-mentioned statements articulated by UNEVOC show that the issue of effective implementation of TVET curricula in modular form (phase by phase) is one of the paramount factors of curriculum design. Therefore, as the objective of the TVET is to prepare trainees for the world of work, the issue of implementation of TVET curricula with proper follow-up process needs to get due attention.

Finch and Crunkilton (1999: 127) uncovered that some TVET curricula are launched and implemented without clear baseline design and seen failing after several efforts have been exerted. To mitigate this problem, Finch and Crunkilton (1999: 127) have developed a curriculum framework consisting of three main curriculum components that curriculum planners should follow: planning the curriculum, establishing curriculum content and implementing the curriculum. They have expressed what these curriculum components are and their linkage in the following manner:

> The planning stage of the curriculum calls for the curriculum developer to establish a decision-making process to collect and assess school and community related data. The curriculum content stage is used to develop strategies to determine curriculum content and develop curriculum goals and objectives. In the last stage of the framework the developer implements the curriculum. In this specific stage, the developer needs to identify and select the materials, develop materials, initiate competency-based education and evaluate the curriculum (Finch & Crunkilton, 1999: 134).

However, Finch and Crunkilton (1999) have not mentioned the challenges that might occur while planning and executing curriculum components. Though the causes and attribution for the problems might vary from time-to-time, the lack of resources, knowledge and skills needed to design a viable TVET curriculum as required might be some of the challenges in developing countries.

3.2.4 Inputs for outcome-based TVET curriculum design

In the outcome-based TVET system, developing occupational standard is mandatory as it is used as input for the training materials and curriculum development. There are various philosophies to develop occupational standards. There are also varied methodologies for developing occupational standards, all of which start with analysing what people in a certain occupation are doing.

According to Fretwell et al. (2001: 17), there are three major known philosophies for defining occupational standards that reflect the evolution from initial task-based to competence-based occupational analysis and standards. These are (a) job/task

analysis, (b) DACUM, and (c) functional analysis. According to Finch and Crunkilton (1999: 139), however, there are only two philosophies for defining occupational standards that are used for TVET curriculum development, namely, DACUM Approach and the Task Analysis Approach. According to Fretwell et al. (2001: 15), these philosophies are not the direct source of curriculum; rather they are the philosophies which lead to the inputs of the curriculum which they call 'occupational standards'.

3.2.4.1 Job/task analysis

The establishment of occupational skill standards starts with job analysis. As the name suggests, job analysis means breaking down major and big jobs into small sub-jobs. Frederick Taylor (1911), the originator of "scientific management" is usually credited with conducting the first formal job analyses (Fretwell et al., 2001: 17). This approach has been predominant for a long time in many industrialised countries since it is especially suited to analyse tasks in a mass production process. Job/task analysis is the process of delineating the task (job) into the elements required to complete it satisfactorily (Finch &Crunkilton 1999: 145; Schnellert, 1993: 56).The aim of job/task analysis is to breakdown a task into its component subtasks and then determine precisely what skills and knowledge a trainee needs to acquire in order to accomplish each subtask (Mansfield, 2001: 19). Moreover, job analysis is important in training specifically if the training is to be given in detail. In spite of fundamental changes in job/task analysis, the approach is still used for specific purposes and in sectors, including in some service and administrative occupations. Job/task analysis is one of the means of developing occupational and competency standards. Regarding who should participate in occupational and competency standards, Fretwell et al. (2001: 2) stated that:

> Stakeholders, including employers, professional associations, labour and education and training institution representatives need to be involved in occupation/competence standards development process using job/task analysis method.

The reason why all stakeholders participate in job/task analysis is to mitigate bias and to properly develop occupational standards that really represent the industry. The involvement of a broad range of stakeholders, with leadership from employers, is

critical to the success and the development of occupational standards. The very nature and content of OS dictates that the primary input must come from representatives from employers and industry. This is because it is the employers and industry that best know what to do, how to do it and who to perform all activities and tasks that are required by the industry. Table 3.1 below shows an extracted occupational standard facilitated by Ministry of Education of Ethiopia using job/task analysis method.

Table 3.1: Job/task analysis model

Job: Machine Installation, Commissioning and Maintenance

1. Prepare foundation for the machine (task)
    - 1.1 select site boundaries (a sub-task)
    - 1.2 Mark site (a sub-task)
2. Excavate site (a task)
3. Level the foundation(a task)
    - 3.1 Set out foundation (a sub-task)
    - 3.2 Bring in fill (a sub-task)
    - 3.2 Grade fill (a sub-task)
    - 3.3 Waterproof the foundation (a sub-task)
4. Perform Electrical installation work (a task)
    - 4.1. Sketch wiring diagram (a sub-task)
    - 4.2. Prepare trunk (a sub-task)
    - 4.3. Lay cables / wires (a sub-task)
    - 4.4. Terminate wiring (a sub-task)
    - 4.5. Tighten loose connection (a sub-task)
    - 4.5. Fix sockets (a sub-task)
5. Install machine/plant (a task)
    - 5.1. Prepare installation site plan (a sub-task)
    - 5.2. Inspect installation site preparation (a sub-task)
    - 5.3. Set up machine/plant (a sub-task)
6. Undertake commissioning for plant and/or equipment a (task)
    - 6.1 Plan commissioning Procedure (a sub-task)
    - 6.2 Assess system performance (a sub-task)
    - 6.3 Adjust plant (a sub-task)
7. Undertake machine maintenance (a task)
    - 7.1. Plan maintenance procedure (a sub-task)
    - 7.2. Assess system maintenance requirements (a sub-task)
    - 7.3. Carry out machine maintenance (a sub-task)

Source: MoE (2007)

Table 3.1 above illustrates the job/task analysis of the occupation named ‘machine installation, commissioning and maintenance’. As depicted in the table, the job is divided into seven tasks. Each task is also further broken down into tasks, and every

task is again further broken down into small tasks named sub-tasks. The notion in outcome-based TVET system is that curriculum components such as learning contents would be stemmed from the tasks and subtasks. The training standard or curriculum developers would develop the knowledge and skills that enable learners be competent enough to perform the job, tasks and subtasks delineated by stakeholders.

3.2.4.2 DACUM

The influential occupation and task analysis in North America as the basic method of curriculum development is the DACUM, which was developed by Canadian experts and systematically improved by R. Norton at Ohio State University and introduced in many countries (Norton, 1997 in Zhao & Raune, 2014: 206). DACUM is an acronym for Developing A CurriculuM, but it actually involves only the first step in a full vocational curriculum development processes (Schnellert, 1993: 40). According to the philosophy of DACUM approach, competence is regarded as the skill, knowledge and attitude for accomplishing work tasks which can be observed, confirmed and described (Zhao & Raune, 2014: 206). DACUM is used to display charts of jobs, duties and tasks of occupational standard along with the knowledge, skills, tools and equipment needed by workers to perform each activity. As indicated in Figure 3.1 below, the profile that results from the DACUM analysis is a detailed and graphic portrayal of the tasks or competencies required for successful workers in the occupation being studied. DACUM has been used successfully to analyse occupations in detail. It has also been used to successfully conceptualise new roles and positions of the workers. The DACUM approach is a system in which experts employed in a particular occupational area determine the curriculum contents (Finch &Crunkilton 1999: 145; Schnellert, 1993: 40).

The DACUM approach has its own philosophy which is known as ‘DACUM philosophy’. According to Finch and Crunkilton (1999: 140, Zhao & Raune, 2014: 244), the ‘DACUM philosophy’ accepted the following three philosophical assumptions as principles underlying the philosophy:

- Expert workers can describe and define their job more accurately than anyone else;
- An effective way to define a job is to precisely describe the tasks that expert workers perform;
- All tasks, in order to be performed correctly, demand certain knowledge, skills, tools, and worker behaviours.

The first philosophical assumption is that jobs, duties and tasks for each occupation is developed and analysed by workers from the world of work. According to the second philosophical assumption, the major expert workers' task in occupational standard development process using DACUM approach is to describe the jobs, duties and tasks that need to be performed in a logical way. The third philosophical assumption depicts that a worker has to acquire knowledge, skills and the work ethics that the job demands, and equip him with necessary tools and equipment needed to perform the work. Schnellert (1993: 40) clearly described DACUM processes as follows:

> A carefully chosen group of 5-12 experts from the occupational area form the DACUM committee. The committee members are recruited directly from business, industry, government, and/or the professions. The committee works under the guidance of a facilitator for two to three days to develop the DACUM occupation chart. The chart contains a list of general areas of competence called DUTIES and several specific units of work called TASKS for each duty. Brainstorming techniques are used to obtain the collective expertise and consensus of the committee. As the committee determines each task, it is written on a card. The cards are attached to the wall in front of the committee. The completed chart is a detailed graphic profile of the duties and tasks performed by successful workers in the occupation.

As depicted in Figure 3.1 below, the DACUM committee identifies (1) the general knowledge and skills required of successful workers, (2) the tools, equipment, supplies, and materials used, (3) the worker behaviours considered essential for success, and (4) the future trends and concerns likely to cause job changes. A trained

facilitator carefully guides the structured brainstorming and small group discussion and consensus seeking process. The high level of interaction and group synergy of the process produces superior results for all occupational levels (Schnellert, 1993: 46).

Figure 3.1 below portrays the DACUM chart developed for the job titled 'Repair Electrical Dc Machines' developed by Ministry of Education of Ethiopia.

Job Title: REPAIR ELECTRICAL DC MACHINES

Duties	**Tasks**					
1. Repair Electrical DC generators	1.1 Identify type of generator	1.2 Identify components of DC generator	1.3 Identify types of prime mover	1.4 Connect the exciter with the Generator	1.5 Excite the Field Coil	1.6 Read the Generator Parameters
	1.7 Repair, servicing & Maintaining DC machines	1.8 Install & Testing DC machines	1.9 Report maintenance work			
2. Repair Electrical DC motors	2.1Identify type of Dc motors	2.2 Identify Principal components of DC motor	2.3 Check DC motor control system	2.4 Inspect break system of DC motor	2.5 Maintaining DC motor	2.6 Install & Testing DC motor
	2.7 Report the maintenance work					

General knowledge and skills	**Tools, Equipment and Materials needed**		**Work Behaviours**
• Basic electronics/ electricity and magnetism, • Technical drawing, • Trouble shooting technique, • Basic instrumentation and measurement, • Safety rules, Principle of magnetism, Soldering/disoldering •	a)Tools and equipment • Magnifying glass, • Dust remover, • Manuals and catalogues, • Apron, • Stationery, • local regulations, • Measuring instrument, • Tool box and kit, • Micrometer, • Vernier caliper, • Cable rating manual, • First aid kit, • Oil can, Grease	b)Materials used as Sources of Information • Reference Manual and Reference Books • Maintenance manual, • Service manual, • operation manual, • Complete set of tools, work bench	• Patient • Team-work Respectful Organized • Punctual • Flexible • Confident • Competent • Stress tolerant • Productive • Detail oriented

Figure 3.1: DACUM chart model. Source: MoE, 2006

Figure 3.1 above portrays the DACUM chart developed for the job titled ‘Repair Electrical DC Machines’. As depicted in the figure, the job is divided into two sub-jobs namely ‘Repair electrical DC generators’ and ‘Repair electrical DC motors’. Again each duty is broken down into tasks. It could also be noted that all the jobs, duties and tasks are named using action verbs in order to depict what specifically is to be performed. Furthermore, as illustrated in Figure 3.1, knowledge, tools, equipment and materials and work behaviours required to perform the work as per the standard are listed. All gadgets listed in Figure 3.1 have their contribution in the subsequent activities of translation of the occupational standard into training standard.

The procedures that might be followed here are developing a framework that include all the facts about the DACUM chart to be developed for TVET curricula. In DACUM curriculum development, all the duties are converted to competency standard and courses where each task or more tasks together forms course titles related to the intended learning outcomes. The general knowledge and skills delineated in the chart are converted to combine or adjust tasks to formulate suitable training course contents while the tools, equipment and materials are converted to the training materials and equipment needed to provide training in specific course. Furthermore, the work behaviours delineated in the chart would be considered to enable learners acquire the necessary attitude that the workplace demands.

3.2.4.3 Functional analysis

Functional analysis (FA) is not a method for occupational analysis in a strict sense. Rather, the idea starts with the identification of the key purpose of an occupation in the major sectors where it is found, identifying the main functions, breaking these in-turn down in sub-functions until outcomes for each function are identified following a strictly logical sequence (Fretwell et al., 2001: 18). Functional analysis is ways of identifying major economic sectors of one country or sub-countries. Furthermore, functional analysis uses a consultative process which involves practitioners, managers and, in some cases, the users or ‘consumers’ of the standards. The sectors are analysed one by one to identify the performance requirements. Functional analysis is most often undertaken at national and provincial levels. For instance, health,

agriculture, social affairs, and labour affairs can be the sector/major functions that can be identified by functional analysts. Each major function would be sub-divided in sub-functions till the job to be undertaken by individual worker is specifically identified. Figure 3.2 below shows the functional analysis process overview.

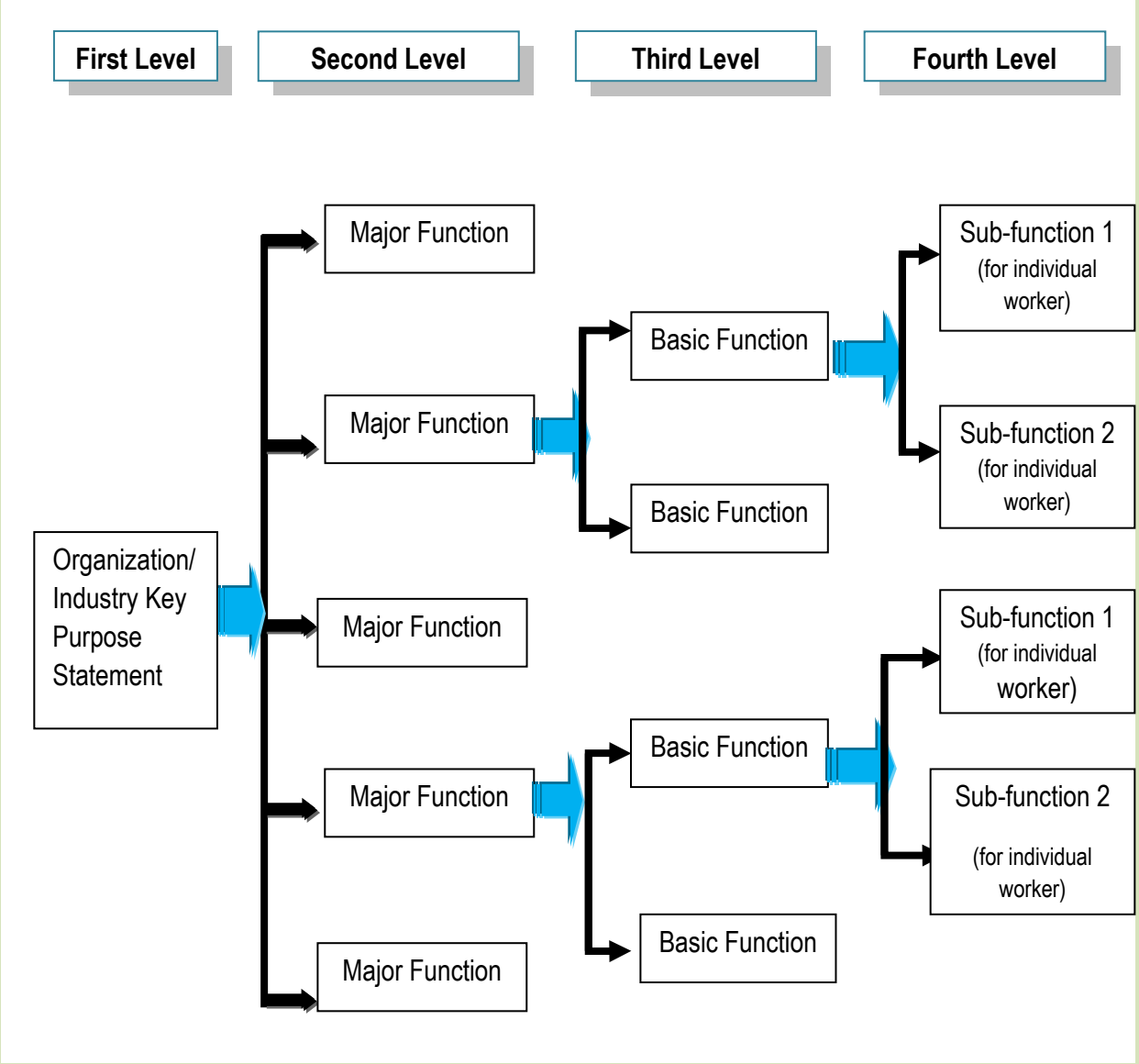


Figure 3.2: Functional Analysis Process Overview. Source: MoE (2007)

As depicted in Figure 3.2 above, in functional analysis, the organisation /industry key purpose is initially stated. The major functions are identified and subsequently each major function is divided to so-called basic functions and yet each basic function is

further separated into sub-function till functions for individual worker is identified. Functional analysis has a major role in training standard development in that it can be used in the identification of major industrial sectors and trades and therefore identifying their owner and stakeholders for the occupations and training programmes development. The relation between functional analysis and TVET curriculum is that in functional analysis major, basic and sub-functions are converted to curriculum elements and modules. For instance, the functions of construction sectors are translated to curriculum for construction fields of study. In specific terms, the major functions are converted to the curriculum framework of certain field of study and the sub-functions might be translated to curriculum modules.

The DACUM approach to occupational analysis is quite different from job analysis. The DACUM uses guided group discussion of expert workers. The job analysis uses discussion of diversified experts and stakeholders. The DACUM process includes, in addition to occupational specific tasks, the separate identification of work enablers including, general knowledge and skills, worker behaviours (personal traits and interpersonal skills), and tools and equipment required to perform the jobs. In other words, the DACUM incorporates both the occupational standard and training standard analysis as it includes the knowledge, skills and work behaviours, tools, equipment and supplies required to perform specific work. These tasks become the focus of curriculum development and the end result of the DACUM committee. In the job analysis big works/tasks are identified and then broken down into sub-tasks/elements, and continues until the smallest work packages are identified. The divisions of the tasks into small work packages help curriculum developers to think of contents and sub-contents in depth when curriculum is developed. The task simplifies the development of the necessary courses to enable trainees to acquaint with industry environment.

In light of the pros and cons and comparisons of different approaches of these methodologies, Fretwell et al. (2001: 18) point out that all methods have their merits. Therefore, one should not disqualify one approach for the other before evaluating the approach against the desired outcome, resource constraints and setting in which the

analysis would take place. None of the methods would produce totally reliable (consistent) results as the processes remain somewhat subjective.

All the philosophies discussed above can be used as principles underlying TVET curriculum design and development. In the outcome-based TVET system, the philosophy chosen is decisive such that if the philosophy is wrongly selected, the curriculum design approach would be affected because the TVET curriculum is the conversion of the occupational standards, which in turn is the reflection of the philosophy accepted. Therefore, it is necessary to examine the pros and cons of all existing philosophies to select suitable philosophies that enable the curriculum meet the objectives set.

3.2.5 Translating Occupational Standard into training standard

The occupational standards developed based on either of the aforementioned approaches, i.e. job/task analysis, DACUM and functional analysis have to be translated into training standards (Fretwell et al. 2001: 19). Figure 3.3 below shows the approach to translate OS into training standards.

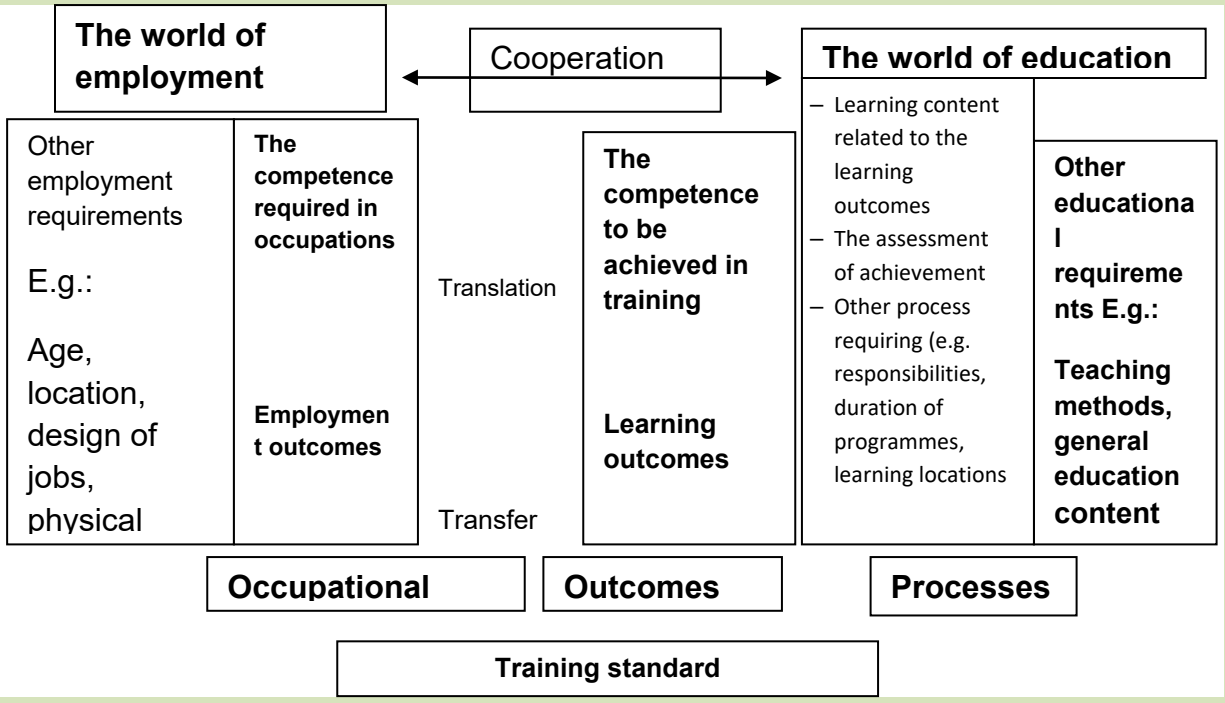


Figure 3.3 Translating Occupational Standards into Training Standards

Source: Fretwell et al. (2001).

Figure 3.3 illustrates the way occupational standards can be translated into training standards. All the employment requirements along with the competence that are required in the occupations are translated to the competence to be achieved in training. In doing so, there is cooperation between the two 'worlds' in that both employers/industry and training/learning institution take part in all the processes. Both worlds feed each other in that the occupational standards developed are translated into training standards, and subsequently based on the feedback from learning outcomes, the occupational standard can be re-developed, and vice versa.

3.3 The Ethiopian TVET: System and curriculum design

In this section, the historical context of the Ethiopian TVET system in different eras and regimes are reviewed. Furthermore, the present TVET system in particular and the outcome-based TVET system that Ethiopia has been implementing is also briefly discussed. In this section, educational and training institutions that have been participating in training provision and the modes of training delivery being experienced are reviewed. The Ethiopian Occupational Standard which is mainly used as input to design and develop TVET curriculum from and which the main feature of the Ethiopian outcome-based TVET system is briefly discussed. Finally, the curriculum design and development approach of the current Ethiopia TVET system is briefly discussed as well.

3.3.1 The Ethiopian TVET system: historical context

There are no written documents that present historical events regarding TVET programmes in Ethiopia. However, according to Demessew (2012: 23), the history of TVET is inseparable from the history of modern education in Ethiopia. During the Italian invasion in 1941, schools were not expanded both qualitatively and quantitatively in the country. Instead, the Italian invasion seriously disrupted the country's educational system by turning most of the schools to military barracks (Demessew, 2012: 24). During the invasion, some TVET schools (like the Addis Ababa Building Trade School) were established in 1940.

Citing Girma, Mehari and Nigatu (1994), Demessew (2012: 24) points out that the main aim for the establishment of these schools was to satisfy the Italian interest. Historically, the Ethiopian education systems have been changing depending on the socio-political ideology of the regimes. There were about three main consecutive regimes /government systems in Ethiopia after the invasion of Italy. These are His Majesty Hailesilassie's Regime (1930 - 1974), the Military Derg's Regime (1974 – 1991) and the Ethiopian People's Revolutionary Democratic Front (EPRDF) Regime (1991 to date).

His Majesty Hailesilassie's Regime pursued the Feudal system while the Military Derg's regime had followed the socialist system. The EPRDF regime on the other hand has been following the developmental government system. The ideologies all the governments followed vary. Therefore, the TVET systems also fundamentally have been varied in the three regimes accordingly. The TVET system during His Majesty's regime was highly integrated with academic education and was more of school-based. During this regime, as technology was not sophisticated and the Ethiopian population was very small, possibly less than 20 million and the economy was more of agricultural and the industry standard was very limited/low, there were very few technical schools in the country. The Addis Ababa Tegbare-Id Technical School and the Addis Ababa Commerce TVET School were the only vocational schools at that time (Ayele, 2010: 17). Referring to the history of TVET during Majesty's regime, Young and Ross (1965) as cited in Demessew (2012: 24) state that:

> To fill that gap, the government established TVET institutions like the Addis Ababa Technical School in 1942, Addis Ababa Commercial School in 1943, Ambo Agricultural School in 1946, Jimma Agricultural School in 1944, W/o Sehin (in Dessie) Comprehensive Secondary School in 1963 and Bahir Dar Polytechnic School in 1964. During the inception, all these institutions (with the exception of Ambo and Jimma Agricultural schools since they were under the Ministry of Agriculture) were under the Ministry of Education. They were also offering training for industry workers, office workers and technicians that

took one to three years depending on the kind of training programme. The trainees were recruited after they completed Grade 8 and 12 education.

During the fall of the Military Derg's regime, there were about 15 TVET colleges and a number of comprehensive schools in which technical fields streams were provided at certificate levels. The aim of TVET at the Derg's Military and His Majesty's regimes were to prepare middle man power to work, specifically for government based work. All in all, the dominant TVET system in Ethiopia during the military regime was the school-based system. Most frequently, such a TVET system follows a formal curriculum that combines general and occupation-specific knowledge.

During the era of the military government of Ethiopia (1974-1991), vocational education was offered in various forms: vocational school, comprehensive secondary school and polytechnic institutions. Under polytechnic education, there were higher general and extended technical vocational programmes. The general polytechnic education included Grade 7 and 8 education whereas the higher general polytechnic education was offered at Grade 9and 10. In similar ways, the vocational schools were exclusively offering courses in vocational streams, and the comprehensive secondary schools handling both academic and vocational fields altogether (Demessew, 2012: 24-25).

3.3.2 Present TVET system in Ethiopia

With the inception of the Education and Training Policy of the Federal Democratic Republic of Ethiopia, tremendous changes have been taking place in the TVET programme in general and in that of the TVET curriculum design in particular. As documented in the Ethiopian TVET mapping developed by Edukans Foundation (2009: 3), the present Ethiopian government has recognised the importance and the need for establishing a large number of TVET institutions to promote economic and technological development in the country. Consequently, as indicated in the document, after the introduction of the Education and Training policy in 1994, the number of formal and non-formal TVET provision centres has increased (Edukans Foundation, 2009: 3).

Hence, the government went through reforming the TVET system which aimed to create and further develop a comprehensive, integrated, outcome-based and decentralised TVET system for Ethiopia (MoE, 2008: 2). As indicated by MoE (2008: 7), comprehensive means the TVET system that 'encompasses all sectors (including agriculture, water health, sport among others)'; integrated means that the TVET system 'encompasses all levels – no more distinction between basic, junior and middle levels'; outcome-based means that 'qualifications are not based on training process, but on learning outcome and the competences acquired'; decentralised means that 'decisions are devolved to lower levels in close consultation with regional and local state to increase efficiency and responsiveness' (MoE, 2008: 2).

According to Demessew (2012: 25), a new TVET chapter has been opened in the country since 1994 when the National Education and Training Policy (NETP) became effective and trainees were used to be registered in the technical and vocational training programmes just after the end of Grade 10 general education system. This TVET programme was assumed to prepare and produce middle level skilled manpower in the country. Its quality is, in fact, regulated by the introduction of the system of occupational standard and by the application of competency assessment tools conducted at the end of the TVET training. There have been two types of competency assessment held at school and industry environment. The school assessment made In the training institute only to grant training completion certificate while the formal assessment took place at Centre of Competence (CoC) in the various regional states of the country (Demessew, 2012: 25).The CoC will then issue competency certificate to the trainees who demonstrate the required competence under the occupation assessed in accredited assessment centres located in the regional states of the country.

One of the major longstanding problems observed in curriculum development in the country is the continuous changes that were made to it. From 2008 till 2015, the Ethiopian TVET curriculum has been revised/changed at least four times (Girma et al., 2016: 43). At the beginning, all training materials including curriculum were prepared centrally and used by all institutions with similar inputs and processes. That

was changed shortly by occupational standards which were prepared for '10+1+2+3' TVET programme. Lately, the development of the occupational standards has been re-categorised into five levels i.e. Level - I, Level - II, Level - III, Level - IV and Level - V packages. This has created a feeling of discomfort for both developers and implementers as it is thought as wastage of time and other resources (Edukans Foundation, 2009: 3). Accordingly, the Level - I and Level - II training packages are developed for students who drop out before completing Grade 10. The Level - I and Level - II packages were short term programmes for those who need to acquire specific skills and enter the world of work (Edukans Foundation, 2009: 3).

3.3.2.1 Aims and vision of Ethiopian TVET programme

It is indicated in the TVET mapping conducted by Edukans Foundation (2009: 3) that, the TVET programme aims to provide more TVET opportunities to a wide range of different groups. These include school leavers, school dropouts, people without formal education including illiterates, entrepreneurs and employees, farmers and their families, people from marginalised ethnic groups and other groups (Edukans Foundation, 2009: 6).

In light of this, and realising the need for skilled human power, the government put the following statement as a TVET vision in working documents.

> Technical and Vocational Education and Training (TVET) in Ethiopia seek to create competent and self-reliant citizens to contribute to the economic and social development of the country, thus improving the livelihoods of all Ethiopians and sustainably reducing poverty" (MoE, 2008: 12;MoE, 2007: 8).

It was with this vision that measures were taken to expand the formal and non-formal TVET programmes across regions and Woredas.

3.3.2.2 Training providers and modes of delivery - overview

The TVET delivery side of the reformed Ethiopian TVET-System is characterised by various public and non-public training providers and different modes of delivery (formal, non-formal occupational training approaches and respective delivery concepts

as well as informal occupational learning).This set-up aims at providing adequate occupational training opportunities for all Ethiopians interested in and in need of occupational learning, taking into account different entry prerequisites resulting from various backgrounds of prior-learning and work-experience (MoE, 2007: 6).

As indicated in the TVET mapping conducted by Edukans Foundation (2009: 6) in relation to modes of delivery, TVET in Ethiopia is viewed as an overarching term to describe all modes of formal, non-formal and informal training and learning below higher education provided by all government and non-government providers. According to the Education and Training Policy (ETP)(1991), the formal TVET system of the country requires completion of a tenth-grade education to obtain certificate, diploma and advanced diploma upon completion of the levels 10+1, 10+2 or 10+3 of the TVET programme. However since 2007, this grading system has changed to Level-I, II, III, IV and V systems. Demessew (2012: 26) confirms that the new TVET system in Ethiopia (known as '10+1+2+3') lasted until 2007 after which it was replaced by the kind of training program that based itself on levelling as Level-I, Level-II, Level-III, Level-IV and Level-V. Working people also benefited from the program through evening classes and distance learning. Non-formal TVET has been offered to a wide range of groups across the country.

3.3.3 Ethiopian outcome-based TVET system

In the EOS development manual developed by MoE (2007: 6), the objective of the Ethiopian TVET delivery is to qualify people according to the occupational requirements – the expected outcome – by facilitating a learning process geared at attaining the set of competences (technical, personal, interpersonal, methodological etc.) which are relevant for certain occupations and defined in the respective Ethiopian Occupational Standard.

The TVET system Ethiopia has been following is named outcome-based /competency-based. The outcome-based TVET system which Ethiopia is practising is the system in which the curriculum is developed based on the industry /labour market demand. The 'competency based TVET system' model (as illustrated in Figure 3.4 below) is widely

used for the development of TVET curriculum to be used in the training institutes, and for the development of occupational/skill competency which is administered under the leadership of industry assessors. The outcome-based TVET system is the system in which the curriculum is developed to enable trainees perform the tasks given according to the performance criteria stated under the occupational standard. In the Ethiopia outcome-based TVET system, the goal of TVET providers is to create the necessary skills, knowledge and attitudes of trainees so that they are able to perform according to occupational standards, and hence receive certification (MoE, 2008: 14). Therefore, TVET providers are expected to develop curricula that are based on the National Occupational Standards and are appropriate to the relevant learning process.

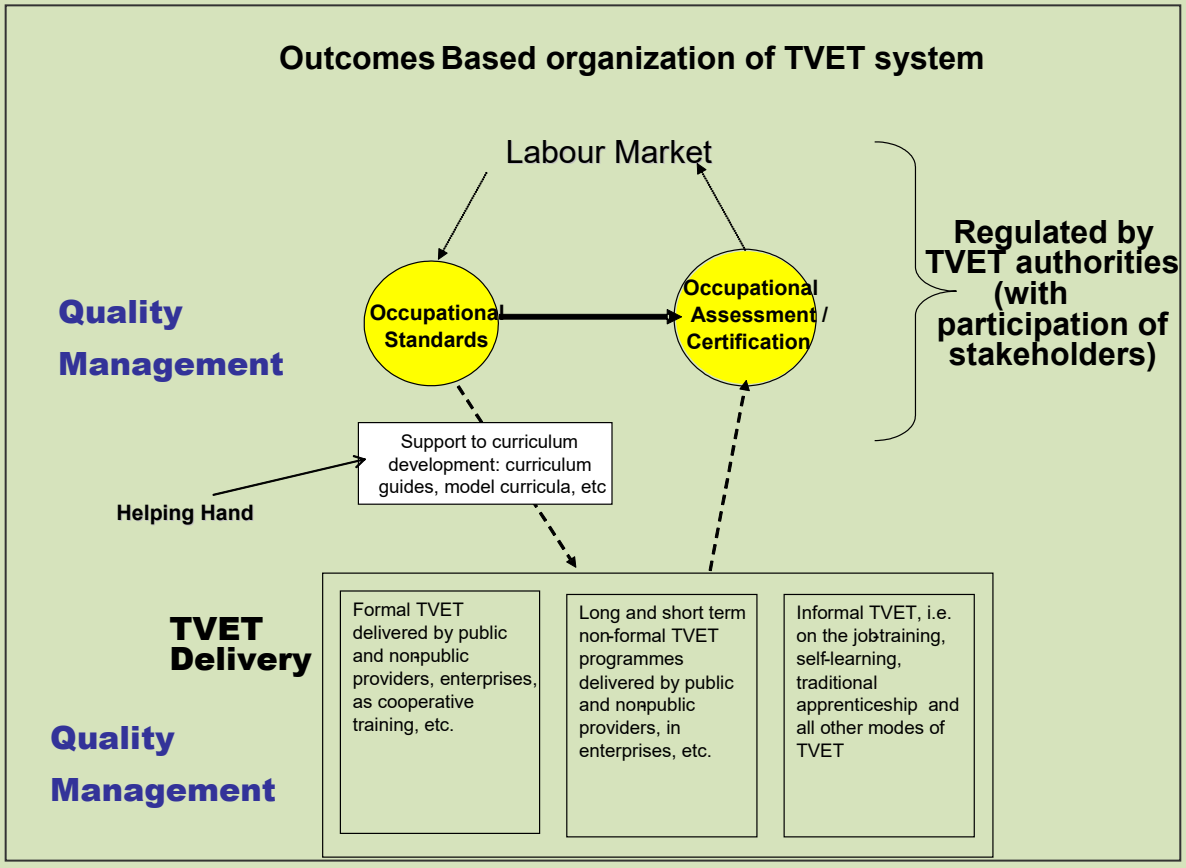


Figure 3.4: An outcome based Ethiopian TVET-System

Source: MoE (2007: 22)

Figure 3.4 above illustrates the Ethiopian outcome-based TVET system. It also depicts the labour market to be the decisive factor for all occupational standards and the consequent curriculum development in the Ethiopian TVET system. Hence, care must be taken when labour market demand is analysed. Occupational assessment is the means to regulate and ensure quality of the outcome of the system. Furthermore, occupational assessment tools are developed from occupational standard.

3.3.4 The Ethiopian Occupational Standard (EOS)

The Ethiopian occupational standard development manual which was developed in 2007 introduced the development of Ethiopian Occupational Standard (EOS), which is used as the input to TVET curriculum design and development in Ethiopia. TVET delivery and occupational assessment is also developed on the basis of the Ethiopian Occupational Standard. The Ethiopian Occupational Standard (EOS) is the national standard which defines the occupational requirements and expected outcome related to a specific occupation without taking TVET delivery into account (MoE, 2007: 5). The Occupational Standard (OS) reflects the actual workplace situation and related (current and future) requirements of the labour market. Demand-oriented TVET uses the Occupational Standard (OS) as the target or expected outcome for TVET delivery. Accordingly, Occupational Standards (OS) are key factors which link and match the world of work with the world of education and training.

Regarding the methodological approach to EOS development, there are a variety of methods that can be used with regard to occupational analysis and specification of occupational requirements. According to the (MoE, 2007: 9), the DACUM and Functional Analysis (FA) methods are mainly selected to develop occupational standard and the reason their selection is that they are frequently used by countries that focus on outcome based TVET-Systems. However, it is indicated in the MoE (2007: 9) EOS manual that both methods have limitations. To overcome such limitations, it is suggested that one method can be combined with the other suitable methods, such as desk study, comparative analysis (e.g. comparison with defined international benchmarks), surveys on economic sectors and occupations, job observation, critical incident technique, etc (MoE, 2008: 47). Since the method is not

an end in itself but a means towards the goal of identifying occupational requirements in a given context, a method should not simply be adopted or taken but also be adapted or customised to reflect the Ethiopian context and specific requirements.

The Federal TVET Agency is responsible for organising, facilitating and endorsing the occupational standards development processes. In order to develop these standards, the Federal TVET Agency is tasked to form expert panels for standard setting and to consult the international occupational standards (MoE, 2007: 19). Identifying the clustering of occupations is conducted through cooperation with the Ministry of Labour and Social Affairs and the Civil Service Agency. Figure 3.5 below illustrates the EOS development process.

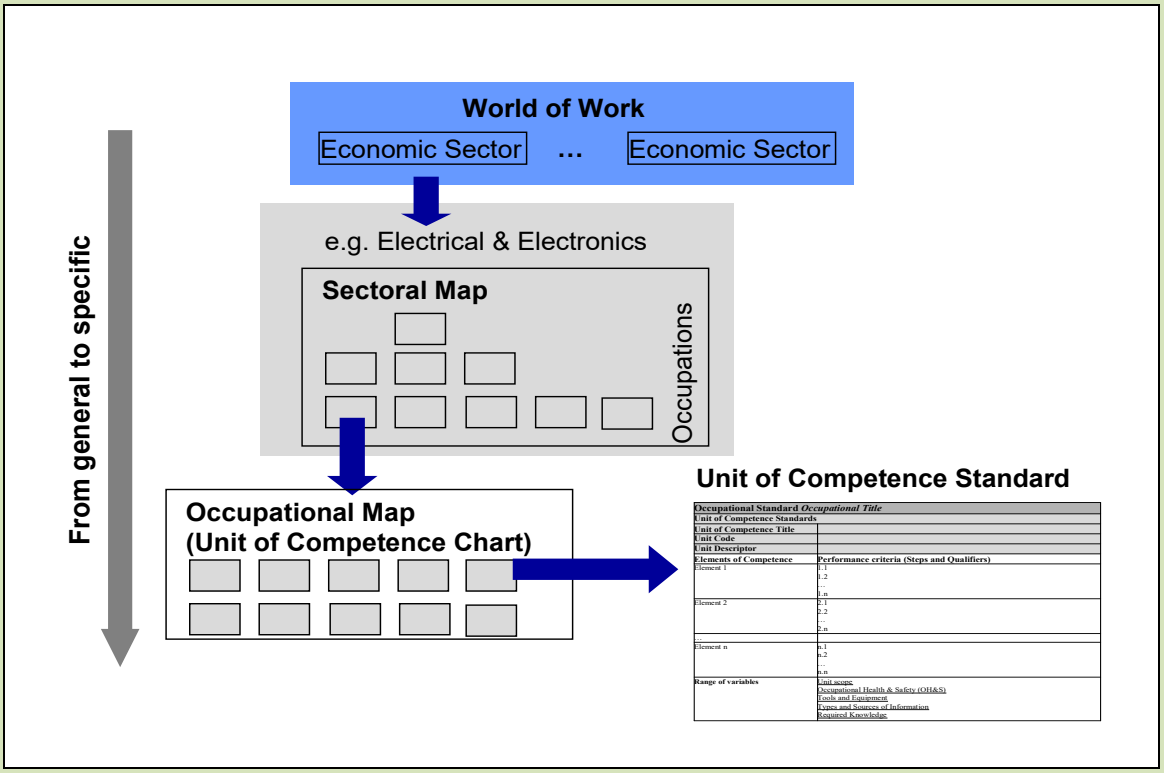


Figure 3.5: Development of EOS

Source: MoE (2007)

As illustrated in Figure 3.5 above, the process of initial EOS-Development can be summarised as follows: occupational standard development starts with a general perspective and gets more specific with each step of the process. It begins with the

analysis of sectors and getting a comprehensive overview of these sectors. One of the selected sectors might be, for instance, 'Construction', 'Health', or 'Agriculture', or 'Manufacturing industry'. Resulting from that, major functions, respective occupations related to the sector are identified and classified. The identified occupations are then analysed and described in further detail and the results documented separately in the given unit of competency standard format as shown above in Figure 3.5.

As depicted in Figure 3.5, the process of EOS-Development comprises three main Stages of EOS development. They are:

- Classification of Occupations;
- Specifying Occupational Requirements and Ethiopian Occupational Standards;
- Finalizing EOS for a specific occupation.

3.3.5 Classification of occupations

Classification of occupations aims at getting a comprehensive overview ("bird's eye view") and covers the analysis of the characteristics of focal economic sectors and the identification and classification of related key occupations (major functions) (MoE, 2007: 28). This process corresponds with stage 1 of the Functional Analysis method as depicted in Figure 3.6 below. Those occupations would then be used as the basis for a detailed occupational analysis and specification of occupational requirements. In order to utilise the limited resources in the most effective way and to optimally support economic and social development goals, prioritisation and concentration on selected focal economic sectors is recommended by the MoE (MoE, 2007: 28).

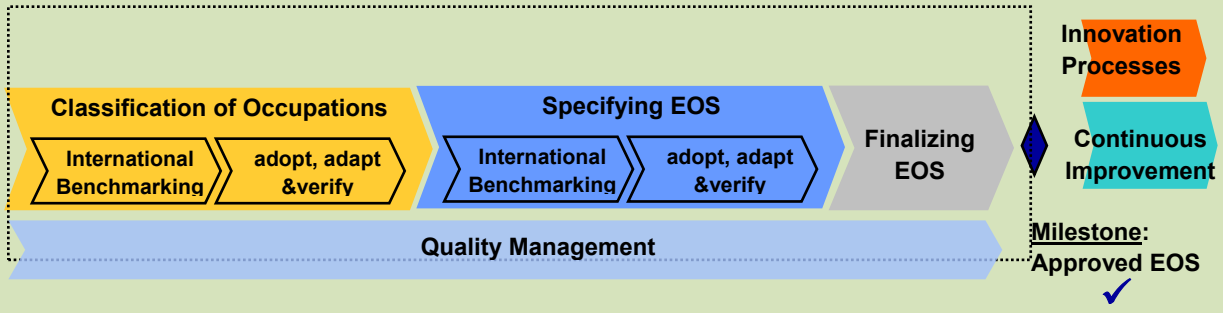


Figure 3.6: Classifications of occupations

Source: MoE (2007)

As illustrated in Figure 3.6 above, the initial process in the Ethiopian occupational standard development is the classification of occupations; the second step is specifying occupational standards and finalising the OS developed. Once the occupational standards are developed, it would be improved continually using technologies and different innovations.

3.3.5.1 Specifying OS

Specifying OS is the process of delineating the OS identified and classified. There are multiple sectors in Ethiopia: construction technology, industrial technology, information technology, textile technology, leather technology, Business, music, sports, among many others (MoE, 2007: 28). Within each sector there are multiple of occupations that stand-alone. For instance, there are three occupations in the construction sectors, namely, 'building construction', 'road construction' and 'surveying and drafting'. There are also three occupations in the industrial technology sector, namely 'metals and manufacturing', 'automotive servicing' and 'electro-technology'. Each occupation has levels I, II, III, IV and level V.

As illustrated in Figure 3.6, there are two main sub-processes that need to be noted with regard to the classification of occupations and specifying OS which are:

- International benchmarking
- Adopt, adapt and verify.

3.3.5.2 International benchmarking

International benchmarking is the taking of other countries' experiences. The experiences are taken from those countries that use the outcome-based TVET system. The countries that Ethiopia is using as benchmarking are the Philippines, Australia, Germany and South Africa (Edukans Foundation, 2009: 3). It is stated in the National TVET Strategy (MoE, 2008: 7) that the reformed Ethiopian TVET system is an outcome-based system, meaning that it uses the needs of the labour market and occupational requirements from the world of work as the benchmark and standard for TVET delivery. The philosophy behind this is that the curriculum should be prepared based on occupational standard developed by the industry.

3.3.5.3 Adopt, adapt and verify

Definitions for the terms adopt, adapt and verify are given in MoE (2007). Accordingly, to ‘adopt’ refers to taking other countries experience preferably the occupational /competency standards. To ‘adapt’ refers to the process of making the occupational /competency standard adopted to correspond, to fit and suit to Ethiopian situation. Verifying is the process of substantiating and proving if the occupational /competency standard adopted and adapted agree with the Ethiopia labour market demand (MoE, 2007: 13).

The Ethiopian government has decided to reform the Ethiopian TVET sector by designing and implementing an outcome-based TVET system based on international best practices. It means that it uses the needs of the labour market and occupational requirements from the world of work as the benchmark or standard for TVET delivery. The requirements from the world of work are analysed and specified to come up with compatible curricula (MoE, 2007: 13).The process of adopting, adapting and verifying international best practices starts with bringing international best practices as a reference. On the basis of the reference, tentative sector classification is adapted taking into account the Ethiopian context (MoE, 2007: 13). Adaptation requires identification and screening of relevant information on the respective sector in the country. Relevant information can be obtained through desk study of relevant documents and reference materials, discussions with sector organisations and exemplary visits to companies operating in a particular sector. Adaptation includes the selection of a single best practice and integrating relevant aspects deriving from local context and conditions. It is critical at this stage to gain agreement and assistance from industry stakeholders. The Federal TVET Authority facilitators and coordinators should lobby, inform and involve key stakeholders from the sector to both explain EOS development and build commitment for the implementation.

The adopt, adapt and verify approach of occupational standard development system that Ethiopia is following as a rule reveals that first, some experiences are taken from particular places and then the adopted system is customised to the real situation of the country. This approach shows that the EOSs are not developed from the scratch,

based on the labour market demand assessed. This in turn poses the question on whether labour market demand is really the foundation for EOS developed in Ethiopia.

3.3.6 Ethiopian TVET curriculum design and development process

Although Ethiopia is officially declaring that it is following the 'outcome-based" TVET system (MoE, 2008: 4; MoE, 2007: 8) since 2000, various outcome-based types were exercised in the name of outcome-based. The Ethiopia National TVET strategy (MOE, 2008: 13) urges that TVET quality and relevance should be enhanced through making the system outcome-based. It is mentioned in the Ethiopian curriculum development manual that each TVET provider should find their own curricular solutions to provide high quality TVET to their specific target group (MoE, 2007: 22). Accordingly, OS were developed for all the trades being provided in formal TVET institutions with the involvement of stakeholders. The Ministry of Education has also facilitated the development of OS for vocational trainings provided by the Ministry of Agriculture, Ministry of Health, Ministry of Culture and Tourism, Ministry of Defence, Road Authority and a few others. It is also explained in the TVET curriculum development manual by MoE (2008: 22) that the Ethiopian TVET system would ensure that all necessary support is given to TVET providers to develop appropriate curricula and develop capacities for high quality TVET delivery. This may be facilitated through developing curriculum development guides, model curricula or training of trainers, provision of institutional supervision and orientation and assistance to TVET providers.

As it is clearly stated in the Ethiopian TVET curriculum development manual (MoE, 2007: 33), the national qualification frameworks and OS are the bases to the curriculum development and therefore, all TVET curricula should be developed accordingly. It is also highly recommended to follow the principle of modularisation when developing TVET curricula. It means combining a set of related learning modules rather than developing in a monolithic curriculum (MoE, 2007: 11).Each module provides a qualification in a specific job. Unlike in pure academic programmes in which one course consists of multiple of major contents as a single entity, in modularised TVET programme, the training courses are developed in a manner that one course is subdivided into multiple course modules and so that each module has

competencies that enable learners to perform specific tasks that each module addresses. Modularisation will therefore enable students to either participate in short training programmes or longer training by combining a whole series of modules, enabling a student to move from completely unskilled to skilled worker.

In the Ethiopian outcome-based TVET system, the main responsibility of developing adequate curricula based on Ethiopian Occupational Standards (EOS) is given to the individual TVET providers. TVET providers need to accept and actively play their new role and responsibility with regard to curriculum development. This requires systematic capacity building. Regional and Federal TVET authorities have the responsibility to offer facilitation and capacity-building services and can be approached for support (MoE, 2007: 9).

The role of Regional TVET authorities with regards to curriculum development is in principle very similar to that of the Federal TVET-Authority in that both of them can develop OS on facilitation and capacity building services among other tasks and responsibilities. However, the Regional TVET authorities focus primarily on specific regional aspects such as giving support to individual TVET providers in the respective regions whereas the Federal TVET-Authority might focus more on issues like developing strategies and manuals (MoE, 2007: 24). As indicated in the curriculum development manual (MoE, 2007: 10), regional TVET authorities would also have to play a role as intermediaries, e.g. facilitating access to federal support in case it is required. The Regional TVET would be responsible for the registration of curricula developed by the TVET providers and TVET institutions. In addition to that, they are also involved in the functions of quality management as well as registration and accreditation of TVET providers and TVET programmes. With regards to curricula and curriculum development, the role of federal authorities has changed from developing binding curricula as a national standard to a main focus on facilitation – in line with one of its mandates to provide technical support to the regions (MoE, 2007: 10).

It is also mentioned in the curriculum manual (MoE, 2008: 24) that stakeholders should participate in curriculum design and development. According to MoE (2008: 24), the

following organisations and bodies are the major stakeholders of curriculum development.

- Regions / Regional TVET authorities
- TVET institutions (e.g. Institutes and Colleges)
  - Governmental
  - Non-governmental
  - Private
- Curriculum Developers
- Researchers
- Relevant Ministries
- Centres of Excellence (COCs)
- Others.

This implies that diversified organisational bodies and stakeholders would participate in the TVET curriculum development activities. However, the extent to which all stakeholders in general and researchers and relevant ministries in particular really are involved in the curriculum development is not clear and should be investigated.

3.3.7 Relationship between EOS and curriculum elements

The Ethiopian TVET curriculum is the conversion of EOS. Figure 3.7 illustrates in a schematic way the relationship between components of the EOS and components of a curriculum.

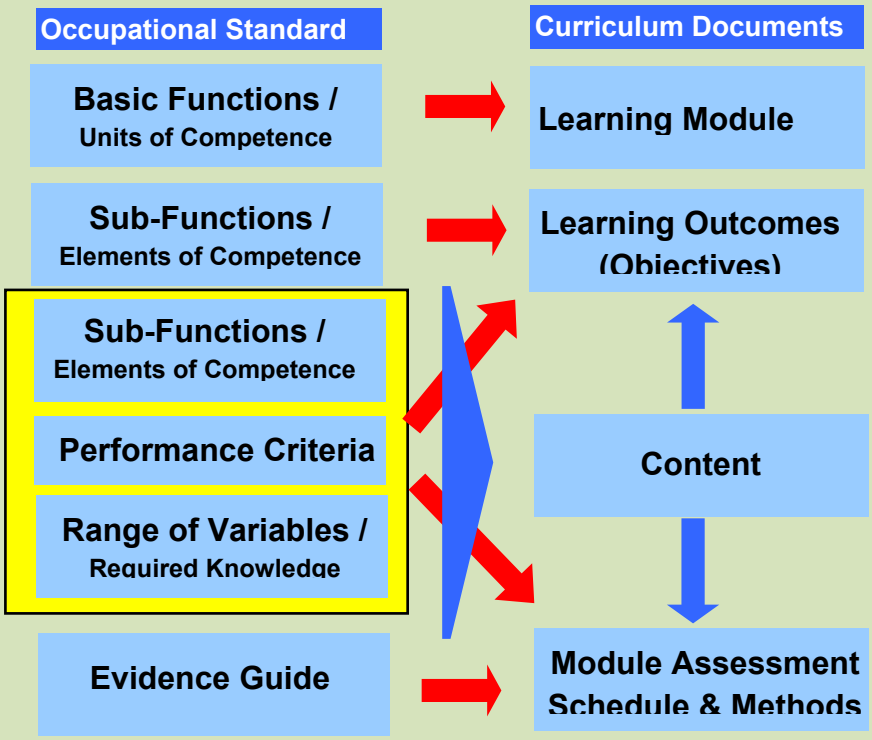


Figure 3.7. Relationship between EOS and curriculum elements

Source: MoE (2007)

Figure 3.7 above illustrates the relationship between EOS and curriculum elements. The figure shows how OS is converted to curriculum elements. For instance, the basic functions of the OS are converted to learning module of the curriculum. At the end of the learning module, the learner shall be able to perform the Unit of Competence and the related elements of Competence (sub-functions) according to the conditions and performance standards formulated in the EOS. Corresponding to that, the Learning Outcomes should be related to the sub-functions. Since the elements of competence only give an indication about the performance, information regarding the assessment criteria, methods and schedules - need to be derived from other elements in the EOS document, particularly from the Performance Criteria and the Evidence Guide put in the competence of the EOS. The content sections defined within the curricula modules also need to be considered not to miss out any knowledge aspects.

3.4 Theoretical framework

Theoretical framework is “a structure that guides research by relying on a formal theory constructed by using an established, coherent explanation of certain phenomena and relationships” (Eisenhart, 1991: 205 in Grant & Osanloo, 2014: 13). There is plethora of educational theories: cognitive theory, behavioural theory, constructivist theory, etc. The researcher had to select an appropriate theoretical framework that provides structure to the entire study so that it would be used in designing the research methods and while discussing the findings of the study.

The general purpose of the study was to assess the practices of TVET curriculum design in Ethiopia. Accordingly, the epistemological belief of the researcher is that the TVET curriculum should address the learners, societal and industrial needs. Tubsree and Bunsong (2013: 35) also argue that what makes TVET curriculum peculiar from the academic one is that TVET curriculum should be individual, society and employer-oriented. Hence, the study should be underpinned by some educational theories that address these needs in light of the TVET curriculum design processes. Furthermore, as the study focuses specifically on outcome-based TVET curriculum design, the theory to be selected should be the one that accords with the outcome/competency-based curriculum design. Hence, of all the existing theories, the researcher has therefore chosen the constructivist theory as the theoretical framework for conducting the study.

The general assumption of constructivism theory

Constructivism theory is a learning theory. As the curriculum is the basic instrument for learning, the theory that is used to shed light on learning strategies that can also be used for the construction of curriculum. Furthermore, constructivism postulates that knowledge is constructed through actions and giving meaning to the reflection of their action (Hoover, 1996: 16). The general assumption of constructivism theory is that learning takes place from experiences, and the meaning is given from the reflection and experiences. Constructivism identifies each individual as a distinctive learner, with unique needs and abilities and therefore different techniques and methodologies are required for teaching them. Because of this, the accountability for learning falls on the learners, not the teacher. They need to incorporate their own needs and experiences

into the equation, taking advantage of the educational environment and moving forward in their own way (Kanselaar, 2002: 8).

Regarding the task of the teacher in a constructivist class, Kalender (2007: 11) states the following.

> In a constructivism class, the teacher is little more than a facilitator, providing individuals with the framework by which they can enable themselves to learn. They encourage individuals to work together, asking questions to solve various problems as they might arise. They encourage students to become “experts” on a particular topic, using their knowledge to educate their peers.

Hence, in a constructivist’s theory, the learners actively participate in the learning and to realise it cooperative learning is promoted.

Congruity between constructivism theory and the TVET approach

TVET is a qualifying education path that provides individuals with occupation-specific knowledge and yields practical results (Werner & et al., 2001: 1). According to constructivists, knowledge is constructed in action and by reflection in a situation. To the constructivist, learning occurs only when the learner discovers the knowledge through the spirit of experimentation and doing (Kalender, 2012: 12). That means, from the constructivists perspectives, for learning to occur, the learners should practice. Hence, the TVET system should focus on practical activities.

Technical and vocational education has a social function (Tubsree and Bunsong (2013: 38). According to constructivists, training institutes should teach learners about various social problems making them aware of both good and bad practices, and motivate them to change or reconstruct the social practices in order to create a more equitable and just society (Belbase, 2011: 16). TVET is an educational offering aimed at creating citizens relating to occupations in the various sectors of economic social life (UNESCO, 2002: 7). TVET should focus more on fulfilling the learners’ and societal needs (Zhao & Rauner, 2014: 89).Hence, one of the principal goals of the constructivist approach in education is to help students become responsible decision

makers. Helping students construct moral understandings of right and wrong and cooperate with each other is a necessary and important part of constructivist education (Kanselaar, 2002: 8). Hence, TVET should encourage group work and collaboration of learners because after they complete their training, they are expected to work together in the world of work. Therefore, the TVET curriculum designed should enhance group work and collaboration among students.

TVET is task-oriented learning in which students work through the complete work process and construct the meaning of learning and their social identity in the enterprise (Zhao & Raune, 2014: 28). From the social constructivist viewpoint, it is important to consider the background and culture of the learner throughout the learning process. This background also helps to shape the knowledge and truth that the learner creates, discovers and attains in the learning process (Wertsch, 1997). For the learners to construct meaning, they must actively strive to make sense of new experiences and in so doing must relate it to what is already known or believed about a topic (Kivinen & Ristele, 2003: 22). In TVET perspective, TVET should not be just a means of transferring knowledge from a trainer to trainee; rather it should create and build on new knowledge based on the previous ones to address the ongoing economic and technological changes requiring new knowledge and skills (Fretwell et al., 2001: 8).

The researcher adopted constructivist theory as a theoretical framework for this study. The following are the major underlying assumptions of constructivism theory presented by Belbase (2011) and Doolittle and Camp (1999) upon which the study was guided.

According to Belbase (2011: 16), the following are the major assumptions of constructivism theory:

- students build up their own meanings based on what they already know;
- different students may give different interpretations to the same thing;
- there are many ways through which students can study;
- studying is a social activity; and
- studying is dynamic and context depended.

In connection to the assumptions listed above by Belbase (2011), Doolittle and Camp (1999) presented the following five major suggestions as the essence of constructivist pedagogy pertinent to vocational learning:

- Content and skills should be understood within the framework of the learner's prior knowledge. This means when TVET curriculum is developed to develop appropriate contents that conform with abilities of the learners, their prior learning level and the courses they have taken need to be assessed.
- Content and skills should be made relevant to the learner. That means that learning should be an active process, whereby students learn best, where curriculum should facilitate the construction of new ideas and building new schemas based upon current and past knowledge.
- Teachers should provide for and encourage multiple perspectives and representations of content. That means the learning contents that are developed in a curriculum need to match education systems and curricula to each socio-culturally distinct group of students.
- Learning should involve social negotiation and mediation. That means the curriculum designed need to promote close working relationships between students and instructors.

Learning should take place in authentic and real-world environments. The idea behind this theory holds to basic constructivism in that an instructor's main task is to translate information to be learned into a format suited for students' state of understanding. Hence, the theoretical assumptions and suggestions presented above help the researcher to evaluate the practices of TVET curriculum design and development in Ethiopia. The researcher believes that the constructivism theory is relevant to the research problems. The following are the implications of the assumptions and suggestions presented by Belbase (2011) and Doolittle and Camp (1999) in relation to the TVET curriculum design.

Students build up their own meanings based on what they already know

All learning begins within an individual's prior knowledge regardless of constructivist affiliation (Pintrich & Schunk, 1996: 40). In constructivists' view also, the curriculum

should not begin from the vacuum. According to Belbase, (2011: 16), students build up their own meanings based on what they already know. Accordingly, Doolittle and Camp (1999), contents and skills should be understood within the framework of the learner's prior knowledge. When the assumption presented by Belbase (2011) and the suggestions articulated by Doolittle and camp (1999) are analysed from curriculum design and development perspectives, what students have acquired already needs to be known before new curriculum is constructed. Hence, the curriculum designers should begin by analysing the courses the students have taken previously. In other words, all the academic courses they have already taken prior to their joining TVET should be considered. Then, the curriculum contents that would be designed for the students need to be something that adds on knowledge, skills and value to their lives. Therefore, this assumption triggers that TVET curriculum needs to consider the previous learners' academic background. In other words, the constructivists' TVET curriculum should be flexible and adaptable to address the target groups.

Different students may give different interpretations to the same thing

This assumption presented by Belbase (2011: 16) indicates that different students may give different interpretations to the same thing denoting that the curriculum to be implemented needs to be the one that can address individual differences in giving meaning to things. This implies that education needs to be learner-focused than being teacher-focused. In the same vein, Doolittle and Camp (1999: 9) also suggest that contents and skills should be made relevant to the learner. This relevance is likely to lead to an increase in motivation (Pintrich & Schunk, 1996: 16). Therefore, the curriculum designed should help learners to develop the knowledge based on their gift and inclination. Developing contents and skills that are relevant to the learner enhances creativity and innovation. Furthermore, it allows children to pursue the training discipline they think it is favourable and fit to them. In this case, in constructivists' view, a TVET curriculum that is beneficial to TVET learners should be developed.

There are many ways through which students can study

“In social and radical constructivism there is no privileged ‘truth,’ only perceptual understandings that may prove to be more or less viable” (Kyarizi, 2016: 10). As stated by Camp, (1983: 19), a student's understanding and adaptability is increased when he or she is able to examine an experience from multiple perspectives. Camp (2000: 19) further asserts that these perspectives provide the student with a greater opportunity to develop a more viable model of their experiences and social interactions. Doolittle and Camp (2000: 10) also suggest that teachers should provide for and encourage multiple perspectives and representations of content. Furthermore, Doolittle and Camp (1999) also points out that teachers should serve primarily as guides and facilitators of learning, not instructor. These principles of constructivists’ theory implicates that the training delivery methods in the TVET curriculum needs to be conducted using different training methods, say such as role play, demonstration, drama, group work, project work. In the case of TVET curriculum, constructivism theory postulates that the TVET curriculum should be designed so that it caters for different training delivery approach for learning to occur.

Studying is a social activity

This assumption of constructivists’ view denotes that learning should be cooperative so that one can learn from one another. That means the aim of education should not only to help individuals but also to support the society at large. It also indicates that learning should involve different stakeholders such as school, students, community, politicians and so on. From constructivists’ perspective, the TVET curriculum should be developed in collaboration with trainers and stakeholders. Hence, learning should involve social negotiation and mediation (Doolittle & Camp, 1999). This means when a student is actively involved as an employee/trainee in a cooperative education workplace, the student can acquire knowledge and the skills necessary to perform the job efficiently and effectively from experiences in the workstation. Hence, what students are taught needs to be aligned with real societal needs. The TVET learning should not be confined to individual interest; trainees should get the chance to investigate the societies’ real lives through apprenticeship if really knowledge needs to

be constructed. Therefore, on the basis of this assumption, the TVET curriculum should be designed by involving stakeholders.

Studying is dynamic and context dependent

This assumption implies learning is continuous and lifelong. It also denotes that learning should be flexible depending on situations. To this end, Doolittle and Camp (1999: 11) suggest that as knowledge construction is enhanced when the experience is authentic, learning should take place in authentic and real-world environments. This means authentic experiences, not a contrived world, are essential in TVET delivery. Hence, the TVET curricula need to address the timely labour market demands and accorded with the fast-changing technologies and societal demand. Furthermore, in order to respond to the changing occupational requirements and to accommodate the different demand of the various target groups, the TVET system should allow and encourage flexibility and dynamic development of the TVET delivery.

Hence, from the theoretical assumptions and principles of the constructivist theory articulated above, it can be concluded that the theory enables the researcher to address questions such as what the contents should address, what the teachers should do, what learners should do and the way learning should take place in order to address the issues during TVET curriculum design and development processes. Furthermore, the study was structured from a constructivists' point of view and interpreted through constructivist lenses to accommodate various responses from TVET curriculum development officials of Ethiopian TVET authorities, trainers, HoDs and principals of selected TVET colleges on the practices of TVET curriculum design and development in Ethiopia.

3.5 Chapter summary

The chapter presented the general and Ethiopian TVET systems and approaches. It could be deduced from the literature that there is no uniform and a single naming of vocational education programmes worldwide. It varies from country-to-country, from authors-to-authors, from literature-to-literature and even from organisations-to-organisations. It presented that there are various naming and definitions of TVET used

by different authors and organisations based on the principles they follow and the purpose of the organisations. It could be noted that unless taken from other sources, the nomenclature ‘Technical, Vocational Education & Training (TVET)’ is what is used in this study. This is primarily because though nothing is said why it was chosen, Ethiopia has been using the term ‘TVET’ for many years to name vocational education.

It was also deduced that vocational education is distinct from academic education in a number of ways. Accordingly, there are various TVET systems that have been exercised worldwide. What makes TVET curriculum different from the general academic programmes is that the main target of academic programme is not to enable learners perform specific tasks. In TVET unlike academic programmes, the trainees are expected to perform tasks according to the performance criteria to deliver competitive and quality product or service for the employers. It could be noted that TVET systems around the world can be classified into four distinct systems: school-based, a dual apprenticeship system combining school training with a firm-based approach, informal-based and outcome-based.

The purposes of the TVET explained by different authors were described as such that TVET is important to produce a skilled and productive labour force that can fulfil the economic and social development of the country. It is also pointed out that the competency-based vocational education is an education system which emphases the specifications, learning and demonstration of those competencies (knowledge, skills, behaviour) which are of prime importance for a given task, activity or career.

The issues of TVET curriculum inputs and what makes TVET curriculum different from the general academic programmes were also raised in this chapter. It is indicated that those TVET curriculum inputs for the Ethiopian outcome-based TVET curriculum design are job analysis, DACUM and functional analysis. The major differences existing among TVET curricula is its design and development practices. The objectives of the TVET programmes, the guiding principles and philosophies followed, who should develop the curriculum are among many others that affect the quality of outcome-based TVET curriculum. Finally, the general inputs for TVET curriculum

development methods that are experienced worldwide and in Ethiopia were discussed. Different types of TVET systems and approaches in general and the issues of the outcome-based TVET system in particular were discussed widely. The distinctions between TVET curriculum design and curriculum development that are explicated by different scholars were presented. The TVET curriculum design and development methods suggested by different authors and organisations are also discussed. Finally, the philosophical bases for TVET curriculum design in general and for the outcomes-based TVET curriculum design in particular along with some models are presented.

The existing challenges and considerations in TVET curriculum design were reviewed. Accordingly, it is presented that the issue of TVET curriculum should be developed based on the available resources or to be developed based on the standard set remains debatable. Finally, the theoretical framework based on constructivists' theory was presented in the chapter. The researcher has selected constructivist theory as an appropriate theoretical framework that provides structure to the entire study so that it would be used in designing the research methods while discussing the findings of the study.

CHAPTER FOUR: RESEARCH DESIGN AND METHODOLOGY

This chapter describes the research design and methodology of the study. In this chapter the research design, approach, paradigm, sources of data are presented. Furthermore, the site, fields of training and participants' selection methods are presented under title samples and sampling techniques. Methods of data gathering tools selection, data gathering procedures followed, organisations and administrations of data gathered as well as methods of data analysis and interpretation are also specified in the chapter. Finally, issues regarding research trustworthiness, validity and reliability as well as ethical consideration are discussed in the chapter.

4.1 Research design, methodology and approach

A research design is the researcher's detailed plan of the way in which the research is to be done (McMillan & Schumacher, 2014: 22); it is a strategy that is drawn up for organising the research and making it practicable (Cohen et al., 2018: 173); it is the direction that a researcher gives to the procedures to be followed in a research project (Creswell, 2014: 12). According to McMillan and Schumacher (2014: 22), a research design is the plan and the structure of the investigation that describes the conditions and procedures for collecting and analysing data. A research design includes specific details of how the research is conducted, how data are collected, what instruments are used and what means are used to analyse the data that were collected (Cohen et al., 2018: 173).

There are different kinds of research designs. For example, as described in Cohen et al. (2018: 177), experimental, survey, ethnographic, action research, case study, longitudinal, cross-section, causal, correlational research designs are the major ones that are widely used in research undertakings. Furthermore, McMillan and Schumacher (2014: 28) identify and classify research designs as four major categories: quantitative, qualitative, mixed research and analytic designs. These major categories are also further classified into different designs. According to Creswell (2014: 12), quantitative research design is classified into experimental and non-

experimental designs. Qualitative research design can also be categorised into narrative, phenomenology, grounded theory, ethnographies, and case study (Creswell, 2014: 41; McMillan & Schumacher, 2014: 29).

The main objective of this study was to assess the practices of TVET curriculum design and development in Ethiopia. The intent of the study was to describe and interpret the experiences of participants in light of TVET curriculum design and development practices in order to understand the meaning the participants' ascribed to the TVET curriculum design and development process in Ethiopia. Put simply, the purpose of the research was to explore and understand the meanings TVET curriculum development officials, TVET college principals, heads of departments and trainers from sampled TVET colleges attribute to the existing curriculum design and development practices in Ethiopia. Hence, the study followed qualitative research approach. Creswell (2014: 245) asserts that the aim of qualitative study is to describe and explain the patterns related to the phenomena and it presents what events, beliefs, attitudes, and/or policies impact on the phenomenon. According to McMillan and Schumacher (2014: 29), qualitative research can be classified as ethnographic, phenomenological, case study, grounded theory, and critical studies. This study is undertaken based on a phenomenology research methodology.

A phenomenological study approach was preferred because the purpose of the study was to describe lived experiences of participants about the TVET curriculum design and development practices in Ethiopia. Phenomenological research is a qualitative strategy in which the researcher identifies the essence of human experiences about a phenomenon as described by participants in a study (Creswell, 2014: 32). It is a theoretical point of view that advocates the study of direct experience taken at face value; and one which sees behaviour as determined by the phenomena of experience (Cohen et al., 2018: 22). Hence, the study employed qualitative research design in phenomenological approach as it investigated what practitioners and stakeholders of TVET programme in general and those concerned with TVET curriculum design and development in particular ascribed to the practices of TVET curriculum design in Ethiopia.

Qualitative designs can vary significantly, depending on the theoretical framework, philosophy, assumptions about the nature of knowledge, and field of training (McMillan & Schumacher, 2014: 344). The assumption of this study was that the practitioners best know and explain the issues under investigation. Hence, the study has explored and described the participants' perceptions and experiences, and the way they make sense of their duties (Creswell, 2014: 256; McMillan & Schumacher, 2014: 345).

4.2 Research paradigm

Qualitative research begins with assumptions, a worldview, the possible use of a theoretical lens, and the study of research problems inquiring into the meaning individuals or groups ascribe to a social or human problem (McMillan & Schumacher, 2014: 344). Paradigms are ways of looking at the world, different assumptions about what the world is like and how we can understand or know about it (Cohen et al., 2018: 8). There are different types of research paradigms. These are post-positivism, constructivism, transformative, pragmatism, and interpretivism (Creswell, 2014: 36). According to McMillan and Schumacher (2014:37), the post-positivist assumptions have represented the traditional form of research, and these assumptions hold true more for quantitative research than qualitative research. Others hold a different worldview. Constructivism or social constructivism (often combined with interpretivism) is such a perspective, and it is typically seen as an approach to qualitative research (Creswell 2014: 37). A transformative worldview holds that research inquiry needs to be intertwined with politics and a political change agenda to confront social oppression at whatever levels it occurs (Mertens, 2010: 57). Therefore, in transformative worldview, the research contains an action agenda for reform that may change the lives of the participants, the institutions in which individuals work or live, and the researcher's life (Cohen et al., 2018: 8).

The research design for this study is within the paradigm of interpretive constructivism paradigm because the data collected are from individuals' perceptions that are based on their experiences inquiring into the meaning individuals or groups ascribe to a TVET curriculum design practices. Interpretive constructivism paradigm is based on the belief that reality is constructed by individuals and societies based on their

experiences and interactions with one another and their interpretations of the world in which they live (Creswell, 2014: 37). Hence, the researcher believes that individuals in the world of work of curriculum development understand their work more than others. As the way individuals experience and value things vary, workers have different viewpoints about a specific phenomenon. According to Creswell (2014: 37), the meanings are varied and multiple, leading the researcher to look for the complexity of views rather than narrowing meanings into a few categories or ideas. The central endeavour in the context of the interpretive paradigm is to understand the subjective world of human experience. This study, therefore, was undertaken within the interpretive paradigm because the purpose of the study was to understand the lived experience of the curriculum designers and developers and rely as much as possible to understand the curriculum design and development processes in Ethiopia. Currently, the holding teaching model or learning theory that fits for competence based approach is the constructivist theory (Kanyonga et. al, 2019: 3). Hence, the study was structured from a constructivists' point of view and interpreted through constructivist lenses to accommodate various responses from TVET curriculum development officials of Ethiopian TVET authorities, trainers, HoDs and principals of selected TVET colleges on the practices of TVET curriculum design in Ethiopia.

4.3 Sources of data

In qualitative study, data are collected directly from the sources, and they focus on participants' understanding, descriptions, labels, and meanings (Creswell, 2014: 255; McMillan & Schumacher, 2014: 345). The sources of information used by qualitative researchers include individuals, groups, documents, reports, and sites (McMillan & Schumacher, 2014: 349). The general objective of the study was to assess the existing practices and major factors affecting the designing and implementation of TVET curriculum and explore issues and considerations to be taken into account when designing and implement in TVET curricula in Ethiopia. Therefore, primary and secondary data sources that could give information in relation to curriculum design practices and processes in Ethiopia were used in the study.

The Federal TVET Agency of Ethiopia and the Regional TVET Agencies were the primary data sources for this study because curriculum frameworks and model curricula were developed at federal and regional TVET agencies levels. Therefore, the TVET curriculum development officials and experts working at the Federal TVET Agency and the Regional TVET Agencies were responsible to curriculum design and development activities as they manage and oversee the curriculum design and development processes. Furthermore, information was obtained from TVET colleges because as stipulated in the Ethiopian TVET curriculum development manual (MoE, 2007: 8), TVET curriculum should be developed at TVET institutes levels. Hence, TVET college deans, department heads and trainers were identified as key informants for the study. The deans of TVET colleges and department heads were selected to provide viable information because as specified in the Ethiopian TVET curriculum development manual (MoE, 2007: 8), curriculum is designed at the training institute levels and the deans and department heads participate in coordinating the TVET curriculum design and development programmes. It is also indicated in the TVET curriculum development manual (2007: 9) that TVET curriculum is developed by trainers under the support of TVET institutes. Therefore, trainers were selected to providing information.

Secondary data sources were also used in the study. Accordingly, working and policy documents such as TVET strategies, manuals, legislation, curriculum frameworks and guides, as well as Education Sector Development Programmes and other written documents and related literature to TVET curriculum design and development that were available at federal, regional and TVET college levels were reviewed and analysed. Other countries experiences visa-a-vis TVET curriculum design and development were also reviewed and used as sources of information.

4.4 Samples and sampling techniques

In a simple sense, sampling refers to the method used to select a given number of people or things from a population (Mertens, 2010: 309). The purpose of this study was to assess the practices of TVET curriculum design and development in Ethiopia. Hence, the study was delimited to the information to be gathered from curriculum

development officials found at federal and regional TVET agencies levels and from trainers, HoD and deans of TVET providers. Therefore, the samples and sampling techniques used in the study in general and the methods employed in site selection, field of study/training selection and participants' selection in specific are presented in detail.

4.4.1 Population of the study

A research population is generally a large collection of individuals or objects that is the main focus of a scientific query (Mertens, 2010: 309). It is the universe of events from which the sample is drawn. A population is any complete group –for example, of people, behaviour, things, university students-that share some common set of characteristics. Ethiopia has four so called Big Regional States, four Emerging Regional States, one national capital city administration of the country and two special autonomous city administrations. The four big regional states are: Amhara Regional State (ARS), Oromia Regional State (ONS), South Nations, Nationalities and Peoples Regional State (SNNPRS) and Tigray Regional State (TRS). The four emerging regions are Somali, Gambella, Benishangul and Afar Regional States. The two special autonomous cities administrations are Diredawa and Harar. In every regional state, there are different numbers of governmental and privately owned TVET colleges. There are various vocational fields of study under different sectors in Ethiopia, namely, industrial technology, construction technology, information technology, textile technology, leather technology, business, music, sports, among others (MoE, 2007: 28; Demessew, 2012: 15). In every regional state, there is at least one TVET college which has a department of building construction works in which training is provided in the field of building construction works. Each TVET college is led by a principal known as a dean. There is one HoD and two or more trainers in the department of the building construction works. Furthermore, there are at least two TVET curriculum development experts/officials at the Federal TVET Agency and also two TVET curriculum development experts/officials at every Regional TVET Agency.

The population of the study comprise all trainers, HoDs and colleges principals/deans of TVET colleges that provide training in the fields of building construction works in

Ethiopia. Furthermore, the TVET curriculum development experts/officials at Federal and Regional state levels are part of the population of the study.

4.4.2 Site selection

The criteria for study site selection are related to the research problem and design (McMillan & Schumacher, 2014: 350). The aim of the study was to assess the TVET curriculum design and development practices in Ethiopia. Of all regional states of Ethiopia, only two big regional states and Addis Ababa City Administration (the capital city of Ethiopia) were chosen for the study using convenience and purposive sampling methods. Convenience sampling involves choosing the nearest individuals to serve as respondents (Cohen & et. al., 2018: 218). According to Johnson and Christensen (2012: 230), researchers use convenience sampling method when they include in their sample people who are available or volunteer or can be easily recruited and are willing to participate in the research study. In addition, convenience sampling involves choosing those accessible at the time, he/she simply chooses the sample from those to whom she/he has easy access (Cohen et al., 2018: 218). In the same manner, as its name suggests, purposive sampling was also used to select regions for a specific purpose. In purposive sampling, often a researcher handpicks the cases to be included in the sample on the basis of their judgment of their typicality or possession of the particular characteristics being sought (Cohen et al., 2018: 218). Johnson and Christensen (2012: 231) explain that in purposive sampling (sometimes called judgmental sampling), the researcher specifies the characteristics of a population of interest and then tries to locate individuals who have those characteristics. McMillan and Schumacher (2014: 350) also advise researchers to select sites where specific events are expected to occur. Hence, the SNNPRS, ONS and Addis Ababa City Administration were selected for the study using purposive and convenient sampling techniques. These regions were selected purposively because they are the biggest regions of Ethiopia. Therefore, it was believed that most experienced participants are found in these regions. Furthermore, it was convenient for the researcher to go to these regions and collect data.

Regarding training providers' selection, the sampling frame from which samples were drawn were all government-run TVET colleges found in Ethiopia. Accordingly, one TVET college from South Nations, Nationalities and Peoples Regional State, one TVET college from Oromia Regional State and one TVET college from Addis Ababa City Administration, i.e. a total of three TVET Colleges were taken as sample representatives for the study. These TVET colleges were selected using purposive and convenience sampling methods because they were comparatively well-equipped and standardised TVET institutes and were found in the biggest national regional states.

Johnson and Christensen (2012: 230) aver that when convenience samples are used, it is especially important that researchers describe the characteristics of the people participating in their research studies. Therefore, the characteristics of the sites and TVET colleges selected for the study are depicted in Table 4.1.

No.	National regional states	TVET institutes
1	Addis Ababa City Administration	General Wingate TVET College
2	South Nations, Nationalities and Peoples Regional State	Awassa TVET College
3	Oromia National Regional State	Adama TVET College

Table 4.1. The sites and TVET colleges selected for the study

As depicted in Table 4.1, the sampled TVET providers are: General Wingate TVET College (from Addis Ababa City Administration), Awassa TVET College (from SNNPRS) and Adama TVET College (from Oromia Regional State). These TVET colleges were selected using purposive and convenience sampling techniques because they are renown and leading TVET colleges from the respective regional states in which the field of building construction are offered. Furthermore, these TVET colleges were also selected using convenience sampling technique because they are found in the capital cities of the regions and are renowned TVET institutes of the

selected regions. Hence, the information that was obtained from these institutes was expected to give clear picture of the TVET curriculum design and development practices in the Ethiopia.

Ambo TVET College was used as a site where the pilot study was conducted. Accordingly, preliminary data were collected and analysed and checked for validity before the real data collection commenced. One college dean, one department head and two trainers from building construction works department participated in the pilot study and then validity and reliability of the tools were checked where some of the questions were revisited based on the existing real situations.

4.4.3 Fields of training/study selection

There are various vocational fields of study under different sectors in Ethiopia, namely, industrial technology, construction technology, information technology, textile technology, leather technology, business, music, sports, among others (MoE, 2007: 28; Demessew, 2012: 15). This study focused mainly in Building Construction Works fields of studies. This is because firstly it is impossible to include all available TVET fields of training in the study. Secondly, building construction technology sector is one of those sectors which much focus are given to by the government of Ethiopia and the training fields found in abundance in the country (MoE, 2008: 34).Hence, it is the most sensitive training area and thus susceptible for frequent manipulation in the curriculum design. It is assumed that much emphasis is given while designing and developing curriculum for construction fields of training. The key idea behind qualitative research is to learn about the problem or issue from participants and to address the research to obtain that information (Creswell, 2014: 235). Therefore, the study was limited to the practices of curriculum design and development of the building construction fields of study.

4.4.4 Participants' selection

Creswell (2014: 239) explains that the idea behind qualitative research is to purposefully select participants or sites (or documents or visual material) that would best help the researcher understand the problem and the research question. As

depicted in Table 4.2 below, curriculum development experts/officials at federal and regional TVET agencies and trainers, department heads and TVET college deans found in the selected TVET providers were selected using purposive sampling methods. The TVET curriculum development experts at regional and federal TVET agencies were selected because they are responsible to give support to training providers in curriculum development activities. Furthermore, deans of the TVET colleges and department heads were selected because as curriculum is expected to be developed at TVET providers' levels, they are responsible to oversee the curriculum development activities and processes. Trainers were selected because curriculum is developed by trainers under the support of TVET providers. Table 4.2 illustrates the number of participants selected from the sampled representatives.

No.	Sample representatives	participants	Number of participants	
			From each sample representative	From total sample representatives
1	Ethiopian Federal TVET Agency	Curriculum experts/officials	2	2
2	Regional TVET Agencies	Curriculum development experts/officials	1	3
3	TVET Colleges	TVET college deans	1	3
		Department heads	1	3
		Trainers	2	6
	Total			17

Table 4.2: Participants selected for the study

As illustrated in Table 4.2, the number of participants in the study was as follows: curriculum experts/officials/ at Federal TVET Agency were two, curriculum experts /officials/ at the three selected Regional State TVET Agencies were three, TVET colleges deans were three, department heads were three, trainers were six, with 17 participants having participated in the study.

In order to secure its confidentiality, the names of the respondents should not be appearing in the research report and publication. However, as it is important to indicate the personal characteristics of the respondents by their levels of education, years of experience and gender in an aggregate form. Accordingly, the highest level of education of the respondents was master's degree while the lowest level of education of the respondents was bachelor's degree. The educational qualification of all the trainers, HoDs and college deans who participated in the interviews were related to their tasks and responsibilities, i.e. they have obtained at least first degree in one of the constructions and related fields. Nevertheless, the educational qualifications of all the curriculum development officials at national and regional levels have obtained are not related to TVET programme. It can thus be said to be non-relevant to the responsibility they are given to discharge. Regarding their years of experience in TVET, nearly all the trainers, HoDs and college deans have more than five years of experience, but the highest years of direct experience of the curriculum development officials at national and regional levels at their positions was 3 years. There were three female participants involved in the study. The characteristics of the respondents reveal that less attention is given to the educational qualifications and competences for TVET management and administration works and this in turn attributes to the failures of the quality of curriculum designed and developed.

4.5 Data gathering methods and tools selection

According to Mertens (2010: 241), typically, qualitative researchers can use three main methods for collecting data. These are participant observation, interviews and document and records review. Accordingly, two data gathering tools were mainly used in this study. These are interview guides and document reviewed. Johnson and Christensen (2012: 202) point out that the main source of data in phenomenological study is the individuals to be interviewed. According to Johnson and Christensen (2012: 202), these interviews are called qualitative interviews. Qualitative interviews consist of open-ended questions and provide qualitative data. Furthermore, qualitative interviews are also called in-depth interviews because they can be used to obtain in-depth information about participant's thought, beliefs, knowledge, reasoning,

motivations, and feelings about a topic (Johnson & Christensen, 2012: 202). This research used individual in-depth interview as one of the data gathering methods because it enabled the researcher to assess as much as possible the practices of TVET curriculum design and development from the participants' lived experiences about the phenomenon. To understand the meanings that participants give to the experiences typically in phenomenological study, holding in-depth, open-ended and often unstructured interviews with the participants are required so as to seek to grasp the essence of meanings (Cohen et al., 2018: 301).

Johnson and Christensen (2012: 203) suggest that in the interview guide approach, the interviewer would enter the interview session with a plan to explore specific topics and to ask specific open-ended questions by the interviewee. Similarly, the researcher developed unstructured interview guides, and developed open-ended questions and pre-tested the interview procedures. Then, data were collected directly from each participant using unstructured interview methods. The researcher commenced by asking general questions and allowing participants provide answers in their own words so that one may gain more complete information. In doing so, the researcher rephrased the questions to make them clear for respondents and probed further to get more reliable and complete information from participants giving the chance for them to think over the questions through unstructured interview.

The second data gathering method used in the study was document review and content analysis. Content-analysis consists of analysing the contents of documentary materials such as books, magazines, newspapers, and the contents of all other verbal materials which can be either spoken or printed (Kothari, 2004: 110). In the case of this study, the Ethiopian and other countries' experiences in terms of designing TVET curriculum were reviewed. Working and policy documents like TVET strategies, plans, guidelines, manuals, legislation, proclamation, curriculum frameworks, as well as Education Sector Development Programmes, project designs and Education Strategic Plan, inter alia and other written document and related literature to TVET curriculum design and development that were available at federal, regional and TVET institutes levels were reviewed and analysed.

4.6 Data collection methods and procedures

In this study, the data were typically collected in participants' setting, involving emerging questions, and were analysed inductively building from particular to general themes, and the interpretations of the meaning of the data are interpreted accordingly (Creswell, 2014: 32). Qualitative researchers typically use multiple forms of data gathering tools, such as interviews, observations, documents, and audio-visual information rather than rely on a single data source (Creswell 2014: 234). Interview is a method that is compatible with constructivism because constructivism is premised on the assumption that people construct their own understanding and knowledge of the world, through experiencing things and reflecting on those experiences. Therefore, interview helps to explore the way respondents perceive and experience TVET curriculum design and development processes.

The research process for this study was emergent. This means that the initial plan for research cannot be tightly prescribed, and some or all phases of the process may change or shift after the researcher enters the field and begins to collect data (Creswell, 2014: 235). According to Creswell (2014: 235), in emergent data collection method, the questions may change, the forms of data collection may shift, and the individuals studied and the sites visited may be modified. The key idea behind qualitative research is to learn about the problem or issue from participants and to address the research to obtain that information. Therefore, the researcher first reviewed different related literature and strategic documents to understand the background of the problem and to see what has been done pertinent to the problem.

After literature and strategic documents in relation to TVET curriculum design and development were reviewed, the researcher in advance developed data gathering tools. Accordingly, interview guides were developed for each category of participants, i.e., for curriculum development experts, trainers and deans separately and then edited before data gathering processes commenced. Then, the data gathering tools developed were edited. Then, a small pilot version of survey was run before running the actual survey. In both the piloting and actual data gathering activities, interviews were held by the researcher directly with the participants. All the interviews were in-

depth and unstructured and open-ended questions. Similar, if not the same questions were developed for different participants in this study. The responses were recorded using pen-paper by having face-to-face one-to-one interaction lasting not less than one and half hours on average with each participant till views and opinions from the participant were fully elicited. The interviews were held in the participants' workplace or office as per the participants' preference.

4.7 Data organisation and administration methods

The initial plan for qualitative research cannot be tightly prescribed, and some or all phases of the process may change or shift after the researcher enters the field and begins to collect data (Creswell, 2014: 235). Hence, the questions in the selected data gathering tools might be modified before proceeding based on the feedback found from interviews held earlier. Qualitative researchers often end up with a mountain of data that needs to be reduced to some manageable form so that others would be able and willing to read it (Mertens, 2010: 438-439). The data gathered are classified on the basis of common characteristics (Kothari, 2004: 124). As Creswell (2014: 256) suggests, the data in qualitative study are reported in words (primarily in the participant's words) or pictures, rather than in numbers. Qualitative data is usually analysed by subjecting it to some form of coding process (Wilkinson, 2000: 79). More importantly, data gathered need to be edited before analysed. Editing is done to assure that the data are accurate, consistent with other facts gathered, uniformly entered, as completed as possible and have been well arranged to facilitate coding and tabulation (Kothari, 2004: 122). According to Creswell (2014: 234), the researchers review all of the data, make sense of it, and organise it into categories or themes that cut across all of the data sources. Hence, in this study, after data were collected using the designed data gathering tools, data collected through interviews and document review having common core contents were clustered and organised. In other words, those data that had similarity in their subject matter were grouped and administered together. The themes were outlined after the data were gathered, edited, coded, classified and made ready for analysis. This was done to keep the coherence of the study. The themes outlined were generated not before analysis but during

research report writing. Accordingly, the following are major themes that emerged from the data made ready for analysis.

- Theme I. Ethiopian TVET curriculum design approaches and guiding principles;
- Theme II. Module development and content selection;
- Theme III. Ethiopian Occupational Standard Mapping and labour market demand;
- Theme IV. Organization of curriculum components and time allotment;
- Theme V. Curriculum implementation and training delivery;
- Theme VI. Curriculum revision and evaluation; and
- Theme VII. Stakeholders' involvement in curriculum design and development.

4.8 Data analysis and interpretations methods

Citing Atkins and Wallacne (2012), Creswell (2014:138) suggests that after theme-based coding is finalised, the data would be analysed by narrating the evidences/responses in words as it appears in the respondents' response. Hence, after the data were collected using the designed data gathering tools, in this case interviews and document analysis, data having common core contents were clustered and organised. In other words, those data that had similarity in their subject matter were grouped and administered together. According to Bradley (2007: 87), there are different types of data analysis and interpretation methods: based on the similarities of the subject matter or issues (thematic approach), based on the types of data collecting instruments, or based on the types of respondents and based on the basic research questions. The researcher used the data analysis based on the similarities of the themes because similar, if not the same questions were developed for different participants in this study and the information gathered from these different data sources such as from TVET institute deans, trainers, department heads and curriculum development experts are expected to enhance the validity of the findings of the study. It could be noted from coding and classification of data obtained from responses of interviews and literature and documents reviewed that every basic research question is addressed in all the seven themes enumerated in Chapter 5. This

is because from the very nature of TVET curriculum design and development in Ethiopian, there is no one-size-fits-all solution in isolation for one problem.

Creswell (2014: 246) draws the attention of researchers to look at qualitative data analysis' need to follow steps from the specific to the general and as involving multiple levels of analysis. In this study, as the research process in qualitative study is emergent, data analysis was an ongoing process and did not occur only at the end of the study as is typical in most quantitative studies (Mertens, 2010: 423). Hence, in this study, data analysis began earlier before completing data gathering activities.

This study followed phenomenological research approach. Phenomenological research is based on the view that our knowledge of the world is rooted on our immediate experiences, and the task of the researcher is to describe, understand, interpret and explain these experiences (Cohen et. al., 2018: 300). Hence, the analysis, interpretations and conclusions of the research were made inductively, with constant reference to the data. In other words, data gathered from different respondents were synthesised. Data analysis in qualitative research proceeds concurrently with other parts of developing the qualitative study, namely, the data collection and the write-up of findings (Creswell, 2014: 245). According to Creswell (2014: 245), while interviews are going on, for example, researchers may be analysing an interview collected earlier, writing memos that may ultimately be included as a narrative in the final report, and organising the structure of the final report. This process is unlike in quantitative research in which the investigator collects the data, then analyses the information, and finally writes the report (Creswell, 2014: 245). Hence, in this study also, the data collection and analysis ran in parallel and data analysis was commenced immediately after the first interview was held.

Because text and image data were so dense and rich, not all of the information can be used in a qualitative study. Therefore, in the analysis of the data, researchers need to "winnow" the data, i.e. focused on some of the data and disregarding other parts of it (Creswell, 2014: 245). Accordingly, multiple questions were presented to participants

during the data collection. But, the researcher examined and sifted the data that were highly related to topics under investigation.

Qualitative data is usually analysed by subjecting it to some form of coding process (Wilkinson, 2000:79). Miles and Huberman (1984) in Creswell (2014: 260) address the importance of creating a data display and suggest that narrative text has been the most frequent form of display for qualitative data. According to Creswell (2014: 235), in the entire qualitative research process, the researcher keeps a focus on learning the meaning that the participants hold about the problem or issue, not the meaning that the researchers bring to the research or that authors express in the literature. Accordingly, after the theme-based coding were finalised, the data were analysed by narrating the responses in words as they appear in the respondents' response (Atkins & Wallacne, 2012:22; Creswell, 2014:138). In general, data that were obtained through interviews and document analysis were analysed manually by categorising the data into themes or meanings. Therefore, after the data were classified on the basis of common characteristics, the information gathered from the trainers, deans, department heads of one TVET college was intertwined with the information gathered from another colleges found in the same regional state as well as with those of other regional states. In the same manner, the information gathered from curriculum experts and officials from one regional state was interwoven with those information gathered from others regional states. Whenever considerable deviation occurred, the researcher investigated which information was discrepant and why it could be so. Accordingly, information that was obtained from interviewees were harmonised and stranded with information found from documents review. In so doing, the information gathered through different tools were triangulated and substantiated. In other words, the information gained through interview from the respondents was analysed along with the TVET strategy, working documents and any other related literature reviewed thematically.

4.9 Trustworthiness

It is noted that qualitative approaches bring about subjectivity of inquiry. Therefore, the investigation biases may not allow the researcher to produce authentic information.

Qualitative researchers can establish the trustworthiness of their research by addressing the credibility, transferability, dependability and confirmability of their studies and findings (Gay et al., 2011:392).

Credibility is the level of agreement between the researcher's data and the interpretation and the multiple realities that exist in the minds of the respondents (Ary et al., 2006: 492). It is the researcher's ability to consider all of the complexities that present themselves in a study and to deal with patterns that are not easily explained and replacement for quantitative concept of internal validity (Gay et al., 2011: 392). To ensure credibility, Creswell (2014: 251) urges that the researcher can triangulate different data sources of information by examining evidence from the sources and using it to build a coherent justification for themes. Another system to ensure validity in qualitative study is to use tape recorders, photographs and videotapes and use of participant-recorded perceptions in diaries or anecdotal records for corroboration (McMillan & Schumacher, 2014: 354).

Transferability is the quality that makes it possible to derive accruable meaning of information on interpretation available in specific contexts. It is the researcher's belief that everything is context-bound and replacement for quantitative concept of external validity (Gay et al., 2011: 392). Accordingly, transferability of the data was ensured by offering rich and detailed descriptions of the context so that potential users could make the necessary comparisons and judgments about similarity (Ary et al., 2006: 492). Dependability is the stability of information sought and interpretation derived in different situations on specific issues. It is the stability of the data and replacement for quantitative concept of reliability (Gay et al., 2011: 392). Confirmability is the possibility of studying the collected objective /systematic information and getting the same or similar conclusions by different researchers. It is the neutrality or objectivity of the data collected and replacement for quantitative concept of objectivity (Gay et al., 2011: 392). Dependability and confirmability of the data were ensured through the use of an audit trail which the researcher built by keeping records of sampled schools, contextual descriptions, data collection methods, tape-recordings, and other descriptive material that could be reviewed by other people (Ary, et al., 2006: 498).

These research materials are kept safely so that they could be produced in case of need to support the credibility and trustworthiness of the study.

One way of validating interview measure is to compare the interview measure with another measure (Cohen et al., 2018: 271). In this study, the researcher allowed triangulation in data collection and data analysis. Similar, if not the same questions were developed for different participants in this study and the information gathered from these different data sources such as from TVET institute deans, trainers, department heads and curriculum development experts are expected to enhance the validity of the findings of the study. Furthermore, the information gathered from the trainers, deans, department heads of one training institute were triangulated with the information gathered from other training institutes found in the same regional state as well as with other national regional states. In the same manner, the information gathered from curriculum experts and officials from one regional state were triangulated with the information gathered from those of the other regional states. Besides, the information gained through interview from the respondents were checked against the policy, strategies and working documents of TVET programme and vice versa to ensure the validity and reliability of the information obtained. Whenever considerable deviation occurred, the researcher investigated which information was discrepant and why it could be so.

A practical way of achieving greater validity in interview is to minimise bias as much as possible (Cohen et al., 2018: 271). The researcher collected the data by himself. This helped the interview participants to understand the questions in the same way to ensure the agreement between the researcher and participants on the description of composition of events and especially on the meanings of these events (McMillan & Schumacher, 2014: 354). Another means of checking validity and reliability of the instrument is using pilot testing. The credibility of interviews can be enhanced by careful piloting (Cohen et al., 2018: 273). Hence, preliminary data were gathered from Ambo TVET College as a pilot testing. Based on the pilot test results, obscure words and confusing concepts were rephrased and the necessary modifications were made.

4.10 Ethical considerations

Educational researchers must consider the effects of the research on participants; they have a responsibility to participants to act in such a way as to preserve their dignity as human beings (Cohen et al., 2018: 112). Ethics concerns that which is good and bad, right and wrong (Cohen et al., 2018: 111). Ethics are the principles and guidelines that help us uphold the things we value (Johnson & Christensen, 2012: 99). According to McMillan and Schumacher (2014: 362), a credible research design involves not only selecting informants and effective research strategies but also adhering to research ethics. In view of that, the researcher ensured participants protection in three major ways, namely: informed consent, voluntary participation, and ensuring the confidentiality and anonymity of the participants. According to Cohen et al. (2018: 111), informed consent, confidentiality and anonymity are major issues in considering ethics in educational research. Informed consent has been defined by Diener and Crandall (1978) as those procedures for individuals to choose whether or not to participate in the research, once they have been told what it is about and what it requires, i.e. all those factors which might influence their decision (Cohen et al., 2018: 122).

Mertens (2010: 342) points out that confidentiality and anonymity are used in the ethical review for the protection of research participants need additional clarification. Maintaining participants' anonymity and obtaining their informed consent before conducting the study is important (Johnson & Christensen, 2012: 99). According to Mertens (2010: 342), confidentiality means that the privacy of individuals are protected in that the data they provide are handled and reported in a manner that they cannot be associated with them personally and anonymity means that no uniquely identifying information is attached to the data, and therefore no one, not even the researcher, can trace the data back to the individual providing them. Accordingly, confidentiality was ensured specifically while data were analysed in that it could not be known who said what by giving a code number and a pseudonym to the responses and the results were reported in aggregate form by referring them to as the trainers, deans, HoDs,

curriculum development experts/officials in the data analysis. As face-to-face–one-to-one interview was held, no one could get who said what except the researcher.

The researcher believed that there is less risk regarding the confidentiality because the central idea of the study was to explore the TVET curriculum design and development practices in Ethiopia. Moreover, the participants in the study were adequately briefed and their consents were sought before they were included in the study. More importantly, they were also debriefed after the interviews held to ensure that their views and experiences were correctly captured.

Research participants must give informed consent before they can participate in a study (Johnson & Christensen, 2012: 107). Hence, the researcher applied for ethical clearance from the College of Education at the University of South Africa (UNISA), from where he was granted permission to conduct the research. In order to secure the necessary data from the respondents and organisations, permission from the respective organisations and the respondents were secured through formal letter of request sent to them. Hence, the researcher developed a letter of permission to obtain permission from the appropriate authorities to ask permission to conduct the research in their organisation. Letters of request permission were sent to the Federal TVET Agency, to selected Regional TVET agencies and TVET institutes to ask for permission to conduct the research. Furthermore, letters of consent were sent to all the selected participants from federal and regional agencies, institute deans, trainers and department heads to request their consent of participation in the interviews.

The place of confidentiality and anonymity is of fundamental significance in qualitative research (Mertens, 2010: 346). The participants were informed with a letter requesting consent that their participation in the study is voluntary and that they may decide to withdraw from the study at any time. They were also informed that all information they provided would be kept confidential and their names would not be appear in the research report and publication. After consent was reached, the researcher held an introductory meeting to share the purpose, discuss confidentiality issues, and obtain assurance that the recruited person was willing to participate in the study. Then, time for each interview was scheduled at the respondent’s convenience. Hence, dialogue

was held between the researcher and participants on interview times and places. In order to ensure the anonymity of the participant, the researcher avoided location threats by conducting interviews privately in a place suggested by the participants (Mertens, 2010: 346). Accordingly, collected data were kept in secured researcher's notebook so that it did not fall into the hands of other researchers/individuals who might misappropriate it. This was done till the data were analysed by the researchers. In order to secure its confidentiality, the respondents' names did not appear in the research report and in some cases, anonymous names were used with respondents' permission.

4.11 Chapter summary

This chapter discussed the research design and methodology used in the study. Issues in relation to research design including specific details of how the research was conducted, how data were collected, what data gathering tools were used and what means to analyse the data that had been collected described specifically. Accordingly, qualitative research design within phenomenological approach was followed in this study. The phenomenological study approach was preferred because the purpose of the study was to describe the lived experiences of participants about TVET curriculum design and development practices in Ethiopia. The research design for this study was within the paradigm of interpretive/constructivism because the data were collected from individuals' perceptions which are based on their experiences. The study was structured from a constructivists' point of view and interpreted through constructivist lenses to accommodate various responses from TVET curriculum development officials of Ethiopian TVET authorities, trainers, HoDs and principals of selected TVET colleges on the practices of TVET curriculum design in Ethiopia.

Primary and secondary data sources were used in the study. The TVET colleges, the Federal TVET Agency of Ethiopia and the Regional TVET Agencies were the primary data sources for this study. Secondary data sources were also used in the study. Accordingly, working and policy documents such as TVET strategies, manuals, legislation, curriculum frameworks and guides, as well as Education Sector Development Programmes and other written documents and related literature to TVET

curriculum design and development that were available at federal, regional and TVET college levels were reviewed and analysed. Other countries experiences visa-a-vis TVET curriculum design and development were also reviewed and used as sources of information. Ambo TVET College was used as a site where the pilot study was conducted. Hence, interviews were conducted with the participants that were selected purposively and conveniently from the Federal TVET Agency the sampled regional TVET Agencies, and sampled TVET colleges.

The number of participants in the study was indicated as follows: curriculum experts/officials/ at Federal TVET Agency were two, curriculum experts /officials/ at the three selected Regional State TVET Agencies were three, TVET colleges deans were three, department heads were three, trainers were six, with 17 participants having participated in the study. Regarding data organisation and administration, after data were collected using the designed data gathering tools, data collected through interviews and document review having common core contents were clustered and organised. In other words, those data that had similarity in their subject matter were grouped and administered together. The themes were outlined after the data were gathered, edited, coded, classified and made ready for analysis.

Regarding data analysis, interpretations and conclusions of the research were made inductively, with constant reference to the data. In other words, data gathered from different respondents were synthesised. Accordingly, information obtained from interviewees were harmonised and merged with information found from documents review.

The trustworthiness issues were ensured through various methods. Methods of triangulation of data gathered from multiple data sources and participants were primarily used. Various methods were employed to address the ethical issues of the study. Informed consent, voluntary participation, confidentiality and anonymity issues were considered in the study. Permission from selected organisations and participants were obtained to undertake study. Despite no apparent risk on the participants, confidentiality was also secured specifically while data were analysed in that it would not be known who said what.

CHAPTER FIVE: DATA PRESENTATION AND ANALYSIS

The objective of the study was to assess the practice of TVET curriculum design and development processes in Ethiopia. This chapter presents analysis of the data gathered through interviews and document review. The interviews were conducted with curriculum development officials of the Federal TVET Agency and sampled Regional TVET Agencies as well as the principals, HoDs and trainers from the sampled TVET colleges that were providing training in the fields of building construction works. The interview participants were two TVET curriculum development officials from Federal TVET Agency, three TVET curriculum development officials from the three sampled regional TVET Agencies, three TVET college principals from the three sampled TVET colleges, three HoDs of building construction work fields from the three sampled TVET colleges, and three trainers of building construction work fields from the three sampled TVET colleges. The documents reviewed were the National TVET strategy and working documents, namely, National Technical and Vocational Education and Training (TVET) Strategy, 2008; Training, Teaching and Learning Materials (TTLM) Development Manual, 2007; TVET Curriculum Development Manual, 2007; EOS Development Manual, 2009 and TVET Curriculum Development Manual, 2012. Besides, EOS and curriculum developed specifically for the fields of building construction works by the federal and regional TVET authorities and colleges were reviewed, compared and analysed. For its simplicity, in this study, unless otherwise stated specifically, “TVET curriculum development official/s” simply represents TVET curriculum development officials from both Federal TVET Agency and regional TVET Agencies that were sampled for the study. Likewise, unless otherwise stated specifically, “Training providers” refers to trainers, HoDs and college – principals that participated in the study.

The study focused specifically on building construction training fields. This is because firstly, as there are numbers of occupations that are being offered under TVET programme in Ethiopia, it is by no means possible to deal with issues of all the fields available. Secondly, much focus is given to the construction fields as there is huge demand for skilled construction workers in present Ethiopia. Building construction

fields are the most widely offered training programme in TVET colleges in the country. The data collection was carried out through the selected data gathering tools to extract the necessary data to address the issues of the study. The data gathered through document analysis and interviews were outlined consecutively in a way that the issues were presented in a coherent and precise manner. Hence, first the data gathered from documents review and then the data gathered through interviews are presented throughout the chapter. Generally, findings from the document analysis and interviews were categorised into themes and analysed in an orderly manner.

This chapter has seven major sections by where each section consists of subsections. The sections were outlined based on the themes that have similarities of the subject matter or issues. The themes were outlined after the data were gathered and edited, coded, classified and made ready for analysis. Accordingly, section one presents the Ethiopian TVET curriculum design and development approaches and guiding principles. The second section outlines the occupational mapping and labour market demand. The third section discusses the TVET curriculum module development and content selection. The fourth section is entitled organisation of curriculum components. The fifth section presents issues in light of curriculum implementation and training delivery. The sixth section of the chapter presents issues in reference to curriculum revision and evaluation. The last section is entitled, stakeholders' involvement in curriculum design and development.

5.1. Ethiopian TVET Curriculum design approaches and guiding principles

This section presents three issues. The first one is about the objectives of TVET as it relates to the Ethiopian TVET curriculum design approaches and guiding principles. The second one specifically presents the curriculum design principles and then about international best practice and benchmarking. In so doing, the data obtained from document review and through interviews regarding the issues under investigation are presented consecutively; then, the data presented are assembled together and analysed in detail. Hence, the questions which were raised for the participants and what participants responded are presented and analysed along with information

obtained through document analysis. The following were the questions raised regarding the Ethiopian TVET curriculum design approaches and guiding principles:

- Why does Ethiopia practise/use the outcome-based TVET system?
- Which other countries' experiences have been taken as a benchmark and standard to design and develop Ethiopian TVET curriculum?
- What are the reasons for preference of those countries approaches/models in designing the Ethiopian TVET curriculum?

The data gathered through document analysis and gleaned from interviewees are presented and analysed consecutively as follows.

5.1.1 The Ethiopian National TVET strategy and working documents

Although most of the TVET curriculum approaches were not so stable since 2005, Ethiopia has passed through three major TVET curriculum design approaches with many distinguished features. These were the 'Syllabus' TVET curriculum design approach, which is often named as conventional /traditional approach, and the rest of the two approaches are named the 'outcome-based' TVET curriculum design approaches. Of the two outcome-based curriculum design approaches, the first phase was referred to as the '10+1+2+3' curriculum design approach. In the '10+1+2+3' TVET programme approach/system, a 10+1 TVET programme trainees can enter TVET programme after completing Grade 10 and have to pursue their training for one year; and one who joined a 10+2 TVET programme has to pursue a two-year courses and the one who joined a 10+3 TVET programme has to spend for three years. Despite little being known about its exact period because the time of its vanishing was so gradual and non-uniformly throughout the country, this system is estimated to have lasted from 2002 to 2010 (Shaorshadze & Krishnan, 2013: 16).

The second phase of the outcome-based TVET approach, which used levelling (level-I, II, III, IV and V) grading system instead of the 10+1+2+3 grading system, has different features in it and has lasted from 2007 till today. This approach has passed through various processes. There was no agreement on whether a single and similar grading system to be followed for all occupations and training fields or to have a

multiple and different grading systems for different occupations and training fields depending on the labour market demands. The first feature of the second outcome-based TVET system was a single levelled approach. In this TVET approach, one occupation has only one single level. For instance, for the occupational field named 'Carpentry', it can be determined as level - III, i.e. once the occupation is levelled (say, level - III), there is no other levels such as level - I, II, IV or V. In other words, for the carpentry field once already determined as level - III, there is no carpentry field with level - I, II, level - IV or level V. The second feature of the outcome-based TVET system was a multi-levelled approach (2008-2010). In this TVET approach, one occupation may have various levels (from level - I to level - V). For instance, in the Plumbing occupation, there were Plumbing level - I, Plumbing level - II, Plumbing level - III, Plumbing level - IV and Plumbing level V. During these periods, the '10+1+2+3' system continued to be implemented, specifically in private TVET institutes (Shaorshadze & Krishnan, 2013: 16).

Eventually, after different outcome-based curriculum design approaches such as DACUM, OTS were exercised, finally the outcome-based curriculum design approach named the 'structural/occupational mapping' approach has been in place since 2010 till today in Ethiopia. In this approach, there are five consecutive occupational levels (Level - I- level - V). Event though, there were different outcome-based curriculum design approaches exercised, the National TVET strategy currently being used as guide in Ethiopia is the one which was developed since 2008 by the Ministry of Education. Furthermore, the Ministry of Education of Ethiopia prepared different working documents for implementing the TVET programme. The following are the major National TVET strategy and working documents regarding TVET curriculum design and development that were developed by Ministry of Education since 2007:

- National Technical & Vocational Education & Training (TVET) Strategy(2008).
- Ethiopia Occupational Standards (EOS) Development Manual (2009)
- Ethiopia Occupational Standard (EOS) Development Manual (2014) (2ndrevision)
- National TVET Curriculum Development Manual (2007)
- National TVET Curriculum Development Manual, (2012) (2nd revision)
- Training, Teaching and Learning Materials (TTLM) Development Manual (2007)

- Training, Teaching and Learning Materials (TTLM) Development Manual (2012) (2nd revision).

These National TVET Strategy and working documents delineated above were not the only policy documents used in the Ethiopian TVET system but, these seven working documents are the documents that are directly related to TVET curriculum design and development. As could be noted from the above-listed seven documents, since 2007, Ethiopia has developed one National TVET Strategy, two Curriculum Development Manuals, two occupational standard development manuals and two training, teaching and learning materials (TTLM) development manuals.

5.1.2 The objectives of the TVET programme

The Ethiopian TVET programme has its own purpose for which it is formulated. In this section, the objectives of the TVET programme as discussed in National TVET Strategy and other working documents are presented. According to the MoE (2008: 21), the goal of the TVET system was to create a competent and adaptable workforce to be the backbone of economic and social development and to enable an increasing number of citizens to find gainful employment and self-employment in the different economic sectors of the country. In the same vein, the MoE (2012: 4) posits that the objective of TVET delivery was to qualify people according to the occupational requirements by facilitating a learning process geared toward attaining the set of competences defined in the respective EOS. This principle infers that all TVET programmes have to be in line with and respond to the skill needs and qualification requirements in the economy, i.e. industries (labour market). This implies that TVET delivery would critically be based and focused on enhancing the competitiveness of all economic sectors through a competent workforce and towards improving people's employability (wage and self-employment) to attain national development targets.

In this regard, it is indicated in the national TVET strategy (MoE, 2008: 8) that TVET is expected to play a key role by building the required motivated and competent workforce. The strategy further stated that the objective of the TVET is to put a substantial focus on building a culture of entrepreneurship and preparing people for self-employment and support job creation in the economy, in particular in the emerging

regions. It is also stated that the major objective of TVET programme is to provide employers, employees, trainees and job seekers with common understanding of what is required for a particular employment in the labour market in Ethiopia. In terms of the purpose of TVET curriculum, it is stated in the Ethiopian Occupational Standard Development Manual (MoE, 2012: 1) that an outcome-based curriculum helps to facilitate the learning process in a way that trainees can acquire the set of competences required at the workplace as defined in the EOS.

Generally, it can be deduced from the National TVET Strategy and other working documents that the profound reform of the Ethiopian TVET system was aimed at creating a TVET system which is wage and self-employment-oriented, demand driven and appropriate to the development needs of the Ethiopian economy.

5.1.3 The necessity of outcome-based TVET system

While describing why Ethiopia has preferred outcome-based system, one of the TVET curriculum development officials of Federal TVET Agency said:

> In outcome-based TVET system, after successful completion of each module, it is expected from every trainee to be assessed and be competent enough in the competencies he/she has covered at each module contents before he/she can progress to the next learning module. This helps them to critically know and gain knowledge in each module. Unlike in the old TVET system, which was input and process-based, in which a trainee was expected to wait for a year to pass to next grade/level, in the outcome-based TVET system, it helps a student be promoted to next level as soon as he/she becomes competent (passed competency assessment) in the courses he has already pursued.

From the TVET curriculum development official's explanation, it can be deduced that outcome-based TVET system ensures quality of training and helps every trainee move at his/her pace. It means that it addresses and considers the fast, slow and medium trainee in spite of the fact that addressing all the trainees' pace can be demanding as it might be difficult for the trainer to manage individual trainees' pace in learning.

5.1.4 International benchmarking

It is stated in the National TVET Strategy (MoE, 2008: 7) that the reformed Ethiopian TVET system is an outcome-based system, meaning that it uses the needs of the labour market and occupational requirements from the world of work as the benchmark and standard for TVET delivery. The philosophy behind this is that the curriculum should be prepared based on occupational standard that are developed by the industry.

It is also stated in the National TVET strategy that the Ethiopian government has decided to reform the Ethiopian TVET system based on international best practices (MoE, 2008: 12).While developing OS, it is indicated in the Curriculum Development Manual (MoE, 2007: 4) that the requirements from the world of work are analysed and specified – considering international benchmarking – as EOS.

International benchmarking is the taking and adopting of other countries' experiences. The experiences were taken from those countries that use the outcome-based TVET system. The countries that Ethiopia was using as benchmarks were Germany, the Philippines, Australia, and South Africa (Edukans Foundation, 2009: 3). Regarding taking international benchmarking, one of the senior TVET curriculum development officials at Federal Authority said:

> There is no particular country from which the system is espoused. For instance, in OS development, the competence standards were taken from Australia for construction training fields while the competences from the Philippines were taken for house-holding occupations and training fields. There are also competences that are taken from South Africa.

From the TVET curriculum development official's responses, it could be noted that competences that build OSs are taken from different countries. That means the competences that are available and thought to match and appropriate are taken by OS developers.

In line with the subject under discussion, the TVET curriculum development official pointed out that the majority of competencies concerning construction fields were taken from Australia because they are suitable for adoption while the majority of competencies regarding 'house-holding' occupations were taken from the Philippines because they could be simply accessed via the Philippines expatriates who were working in Ethiopia.

The following is also stated in the National TVET Strategy (MoE, 2008: 46) as to what would be done in the future regarding TVET system adoption and benchmarking:

> The Federal TVET Authority will be organised in the light of international experiences where autonomous organizations have been established to manage national TVET systems, for example, the Philippines, Jordan, South Korea, Brazil, Tanzania, Mauritius, Botswana, Zambia and others.

Though there is no reason mentioned in the strategy why experiences from these countries were sought, it might be due to these countries pursuing outcome/competency-based TVET system. However, the TVET curriculum development officials at Federal TVET Authority confirmed that there was no official agreement with these countries. It was noted that there was no evidence of the type of experiences that were taken and who (persons) and which organisations participated in adopting the experiences other than espousing competencies that have been taken from Australia.

One of the TVET curriculum development officials at the regional level suggested what need to be considered when other countries' experiences are taken as follows:

> The countries from which competences were taken, following the outcome-based system per se was not enough. But, what matters is Ethiopia's customization of these countries' experiences to Ethiopian real situation and work environment. For instance, in Australia, may be, one might get a job or be self-employed just with being competent in one unit of competence, say 'Carrying out chiselling stone'. But in the Ethiopian case, first, it is less possible

to enable one to be fully competent enough and be self-employed with only few competences as often professed. Secondly, our industry demands those with a bit all rounded competences at lower and middle level, and the specialisation is what needs to be done later after one gets experienced.

According to the perception of the official, the issue of labour market demand needs to be considered when other countries' competencies are taken. In the light of the above discourse, one trainer had raised the following question: "What is the benefit of having fantastic, world class system if it does not fit the country's real needs and does not satisfy demands and cannot be put into practice?"

Regarding taking other countries' experience, it is not clearly indicated in the National TVET strategy and working documents whether there was any country from which curricula are taken as a reference and benchmark. Furthermore, it is not also clearly indicated in the National TVET Strategy and working documents as to why those countries from which experiences on OS development are said to be taken were selected. In fact, the following two phrases, inter alia are written in the TVET Curriculum Development Manual (MoE, 2012: 2):

- Local education and training is benchmarked to international standards; and
- Existing curricula - local or international - might be used as reference material.

It can be noted from the above two bullets that there was an intention to elevate the Ethiopian TVET programme to be on par with the international standards; and to do so relevant curricula developed locally or internationally could be used as references. This denotes that in order to equate the Ethiopian TVET system to international benchmark, other countries' experiences in curriculum design and development could have been considered.

On the question on which countries' experiences were taken into account as benchmarks and models in designing the TVET curricula in Ethiopia, the TVET curriculum development officials at federal level confirmed that it was not the curriculum, but it was the occupational/competency standards, that were adopted from other countries.

Some of the trainers simply explained that they heard the TVET system was adopted from Australia, Germany and the Philippines. However, one of the TVET curriculum development officials of the Federal TVET Agency pointed out the types of alliance and partnership Ethiopia had with Australia, Germany and the Philippines as follows:

> Regarding the support from Germany, the consultants and German expatriates have been providing various supports in TVET system in different activities. There were also German expatriates who have been serving Ethiopia as trainers. Besides, there were some components like in-company training, cooperative training and dual training systems Ethiopia has strived to adopt from Germany. Regarding the Philippines, Ethiopia has adopted their OS /competency standard in some fields like household keeping inter alia. Furthermore, there were TVET expatriates from the Philippines. Regarding Australia, most of the OSs/ competency standards specifically for construction fields were adopted from there. Sometimes, experts used to come from Australia to train the trainers specifically in the assessment tools development methodologies.

This implies that there is formal or non-formal partnership between Ethiopia and other countries in one way or another. However, one of the TVET curriculum development officials of Federal TVET Agency confirmed that there was no any other country from which curriculum design and development approach was taken from. It was noted that there is information gap and no consensus among the participants on what has happened and what is going on because of the non-existence of documented evidences.

5.2 EOS mapping and labour market demand

In this section, two major sub-sections, namely, OS mapping and labour market demand are discussed. The first sub-section presents issues in relation to EOS mapping and qualification levelling. In the second sub-section, issues regarding labour market demand are presented. In the second sub-section, issues related to training needs such as the extent to which trainees' needs are met, the extent to which issues and factors such as societal needs are met when curriculum is discussed.

In this section, the Ethiopian TVET system that took place since 2007, Ethiopian occupational structural mapping and the issues of qualification levelling systems are presented. The EOS mapping and qualification levelling system focuses on the building construction training fields. Building construction work fields are selected because, inter alia, as there are several occupations that are offered under TVET programme in Ethiopia, it is by no means possible to cater for issues of all the occupational fields. Therefore, much of the discussion and analysis are based on Figure 5.1 below (the occupational structural mapping of building construction training field).

Regarding occupational mapping and levelling system followed in the Ethiopian TVET system, the following questions were raised to participants:

- What are your views on the occupational mapping and levelling in the field of building construction works?
- What are your views on the TVET qualification levelling system?
- How were training needs such as trainees' and societal needs considered when TVET curriculum was designed?
- How far does each occupation meet the labour market demand?

In all cases, first what the National TVET strategy and working documents contain are presented and subsequently what respondents indicated in terms of the issues raised.

5.2.1The occupational structural mapping of building construction field

The Ethiopian TVET system comprehensively comprises nearly all field sectors: the industrial, construction, business, home sciences, health, music and entertainment, culture and tourism, sport-sciences, inter alia (MoE, 2009: 19). Each field sector comprises trades and occupations which are levelled as Level - I, Level - II, Level - III, Level - IV and Level -V. Occupational structural maps for each field trade under each field sector is developed nationally. The building construction training fields are some of the fields in which training is being offered in several colleges. Figure 5.1 below illustrates the occupational structural map of the building construction works.

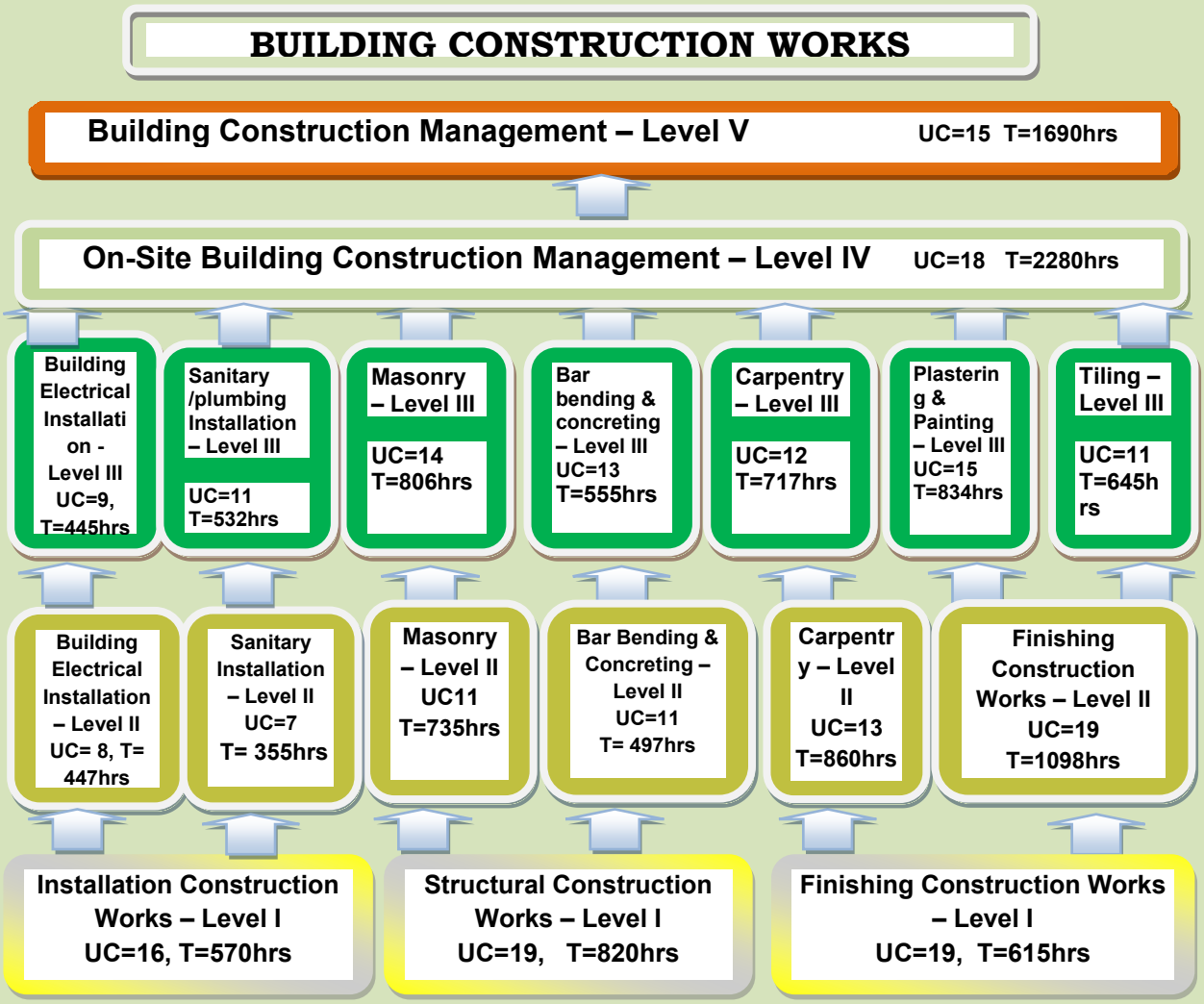


Figure 5.1 Occupational map of building construction works

Source: MoE (2010)

Figure 5.1 above illustrates occupational structural mapping of the building construction works. Occupational map presents types of occupations, hierarchical structure of the qualification levels in the occupations and/or related occupations and the pathways in the sector/sub-sector. As clearly illustrated in Figure 5.1 above, the building construction work trade comprises 18 occupations. That means, there are three occupations under level - I, six occupations under Level - II, there are seven Level - III occupations, one occupation under Level - IV and one occupation under Level - V.

As indicated in Figure 5.1, there are three root-occupations in the building construction works field. The root occupations in the building construction work trade are named ‘Installation construction work’, ‘Structural construction work’ and ‘Finishing construction work’. Each root-field is split into two and so the three root-fields which are found at Level – I are split into six different occupations at Level - II. As illustrated in Figure 5.1 above, there is no uniform structure in the architecture of the occupational map. For instance, installation construction work Level - I is sub-divided into two occupations at Level - II and III; whereas finishing construction work Level – I is subdivided into two occupations at Level - II and into three occupations at Level - III.

From Figure 5.1 above, several units of competence (UC) in an occupation and the time allotted for each curriculum derived from an occupation varies significantly. For instance, the number of units of competency (UCs) of installation construction work, structural construction work and finishing construction work are 16, 19 and 19respectively. Regarding time allotment in the curriculum that are transformed from respective occupation, say, installation construction work, structural construction work and finishing construction work are 570 hours, 820 hours and 615 hours respectively. The time allotment ranges among the different occupations are so significantly large that, if we compare the time allotted for each occupation at Level - II, for instance, the time allotted for ‘On-site building construction management Level - IV’ to be 2288 hours while the time allotted for ‘Sanitary installation work Level - II’ to be only 355 hours. In light of discrepancies, the training providers raised their doubt if really curriculum developers allotted the training duration and time properly.

5.2.2 Training needs and labour market demand

The first and foremost activity to be undertaken before designing TVET curriculum is assessing training needs. In the Ethiopian TVET system documents, the most repeatedly raised terms with regard to training needs are the ‘labour market demand’. It is indicated in the Curriculum Development Manual that curricula need to reflect the specific context and conditions of occupational learning (MoE, 2007: 11). As indicated in the Curriculum Manual (MoE, 2007: 11), the following inter alia respective relevant aspects have to be considered regarding target groups and mode of delivery:

- Disparate target groups and their specific characteristics;
- Selected concept and mode of delivery (e.g. formal, non-formal, informal TVET programmes; cooperative types of TVET delivery etc.); and
- Regional / local conditions as covered in the range of variables of the EOS.

What can be deduced from the above statements is that the Ethiopian TVET system accommodates different target groups, addresses formal, non-formal and informal TVET programmes, cooperative types of training delivery, and considers regional and local conditions when training programmes are developed.

As indicated in the Ethiopian TVET working documents above, it is the labour market demands that were considered. For instance, it is stated in the National TVET Strategy (MoE, 2008: 21) that “The National Occupational Standards define the outcome of all training and learning expected by the labour market”.

Regarding the extent to which training needs such as trainees’ and societal needs are considered, some of the trainers indicated that since most of the occupations are so fragmented that it was difficult to declare that the Ethiopian TVET curriculum addressed the trainee’s needs, nor the labour market demand. In connection with this, some TVET college principals indicated that majority of the TVET trainees/candidates were not assigned to the specific fields they wanted to pursue. This was partly because majority of students compete to get assigned to a particular field; for instance, from all construction fields, it could be known from the responses of the respondents that most students prefer joining the masonry department because it is relatively a demanded occupation in the world of work. To this end, as the capacity of the department is limited to welcome few numbers of students to the department, the rest of candidates are obliged to be assigned to the rest of the training fields.

Regarding how far training needs such as trainees’ and societal needs are considered when TVET curriculum is developed, one of the TVET curriculum development officials confessed as follows:

> In principle, when the outcome-based TVET curriculum is designed, it is the industry’s needs that are taken primarily as a base, not the trainees’ needs.

> Therefore, the curriculum to be designed needs to be the one that is believed to enable the trainees, at the successful completion of specific course, competent enough to perform the tasks indicated in the units of competences from which the curriculum is derived.

The above statement confirms that the Ethiopian TVET system should fulfil the industry's labour market demand, not trainees' needs. In this regard, some of the TVET curriculum development officials strongly contended that as the trainees pursue their training in order to be employed, and the society aspires for their children to get work after their successful training completion, just fulfilling the labour market demand in a way, means meeting the trainees' and the societal training needs. One of the curriculum development officials argued further that it was not the trainees' training needs that should be primarily considered in the case of TVET programme but the appropriate system is catering for the industry's labour market demand.

The training providers also supported the idea that the TVET programme should fulfil the industry's labour market needs of the country on the whole and of the regions in which work take place in particular. Some of the trainers believed that if really the curriculum addresses the labour market demand, it means, it addresses the trainees and the societal needs as well as the social, political, economic, technological and environmental factors of the country. Nevertheless, the trainers indicated that they did not believe the curriculum they were using met the then Ethiopian labour market demand.

In most of the training providers' opinion, there is no equal demand for all occupations in the world of work. One of the HoDs stated the following as to what is preferred by the market:

> In the building construction work fields, for instance, the structural construction (combination of concrete and bar-bending) work is preferable to finishing and installation' construction works. Even from within structural construction works, the bar-bending work is preferable to concrete work.

Another trainer-respondent said the following on his part:

> Plumbing /sanitary installation/ work has less demand than building electrical installation work in the labour market. The field 'Finishing construction work' is the least preferred occupation/field as it can be learnt informally and is also susceptible to be performed by the mason and tile workers. The field 'finishing construction work' could have rather been integrated with masonry or structural construction work.

The above responses illustrate that some fields have less demand when they stand separately but have more demand when they are combined with others. The responses also indicate that some occupations had demand just because of the presence of one or two occupations it is clustered with.

One of the HoDs further explicated the following on this issue under discourse:

> From an occupation named "Bar bending and concrete work Level - II", it is only because of the presence of bar-bending, not the concrete work that the occupation has got demand in the market. Similarly, an occupational field named "Sanitary work Level - II" which is a combination of building electrician and plumbing at Level - II, has more demand just because of the presence of plumbing. In other words, it is plumbing not building electrical installation worker that is needed in the market.

Despite differences in responses of the respondents, in a nutshell, they imply that as the industry does not employ two or three workers with different so called occupations at one work-site, two or three occupations at Level - II, for instances 'bar-bending', 'concrete' and 'masonry jobs should be merged.

5.2.3 Selection of units of competences and qualification levelling process

There is correlation between levelling and labour market demand in that a well-structured occupational map can address the labour market demand. Therefore, the predominant issue that needs discussion in the Ethiopian TVET system in general and

in the process of curriculum design and development in particular needs to be the issue of occupational mapping/occupational structure.

5.2.3.1 Occupational mapping

Regarding the general structural occupational mapping and curricular-architecture of building construction fields, there are diversified opinions among respondents. Most of the respondents were not comfortable with the existing occupational mapping (Figure 5.1) architected for building construction works. In this regard, one of the HoDs suggested the following:

> In order to design occupational mapping appropriately, the TVET Qualification Framework should have been revisited in a way to accommodate the labour market demand. It would be enough if the maximum level was pegged at level - III as there are majority of competences unnecessarily repeated within and across the occupations and thus resulting in to increase levels.

This means the HoD is in doubt of the appropriateness of the labour market demand and was not comfortable with the qualification levels and the going up to Level V.

There were no uniform responses from participants as to which occupations should stand alone and which occupations need to be combined with one another. One of the trainers suggested the following regarding the occupational mapping:

> There should be one occupation as a single entity comprising fundamentals of installation, structural and finishing construction works without further division at level - I. There should not be exit level at this point (Level - I) for the trainees so that they can go on to Level - II, then occupations would be further divided to three occupations at level - II and would go on without being further subdivided at least till Level - IV.

In spite of the fact that the trainer appears not be comfortable with the existing mapping, it is the industry that has the mandate to adjust OS. However, from the training providers' responses, it could be deduced that there is misalignment between the labour market demand and training needs.

One of the TVET curriculum development officials also remarked as the following:

> Combining building electrical installation work and plumbing/sanitary was not fair. Both of them should be separated and go on up till the highest level by themselves. Rather the concrete, bar-bending and masonry works could be clustered and named ‘structural construction’ and should go on till upper level; and let construction carpentry, tiling, plastering and painting could be combined together and named ‘finishing construction work’ and then go on till upper level.

On the other hand, one trainer accepted the idea of the building construction works being divided in three main fields at Level - I, but he did not concur on the further split of occupations after level - I.

The trainer put forward his view like this:

> The Level - II, III, IV and V should continue having the naming at Level - I, i.e. installation construction work –Level - I up to Level - V, structural construction work – Level - I up to Level - V, and finishing construction work –Level - I up to Level -V.

Still some trainers further suggested that there should not have been exit at ‘Level - I’ or ‘level - II’, and therefore, one has to advance learning till at least Level - III intermittently without interruption. One of the trainers from a particular TVET college preferred concrete and masonry works to be combined beginning from Level - I, while another trainer-respondent from another college preferred masonry and concrete works to be combined starting from Level - II. There were also respondents from the trainers who suggested that concrete, masonry and bar-bending should be combined; and carpentry, tiling, plastering and painting works to be combined and form one occupation at Level - II.

From the different views expressed by the respondents above, it could be noted that there are different opinions as to what the occupational mapping should look like. Most of the trainers were not comfortable with the current occupational mapping and unanimously all of them agreed upon that it should be the respective industry that

should decide labour market demand and design occupational mapping. On the contrary, there were respondents specifically from the curriculum development officials who were against all the alternatives mentioned. For instance, one of the curriculum development officials from Federal TVET Agency strongly argued that the existing occupational mapping has no problem and therefore, there is no need to search for alternatives. The different viewpoints, above show the need for the revisiting of the occupational mapping though there are different opinions regarding what structure occupational mapping should look like.

5.2.3.2 Qualification levelling

Regarding the selection of units of competences and levelling processes, as indicated in the OS Development Manual (MoE, 2014: 5), units of competences are developed by industry. Subsequently, each unit of competencies are categorised into the five certificate levels based on the ETQF descriptors as reflected in the Table 5.1 below. Accordingly, some units of competence are levelled as Level - I or Level - II or Level - III and so forth. The criteria for deciding which unit of competence needs to be incorporated and in which of the five levels it should be included are based on the ETQF descriptors. The National TVET Qualification Framework (MoE, 2014)describes the five levels of Ethiopian TVET Qualifications. It devises the level descriptors, i.e. define the scope and composition of qualifications and the level of responsibility a qualified person can assume in the workplace as depicted in Table 5.1 below.

Ethiopian National Qualifications Framework (ENQF)

Level	Knowledge	Skills	Competence
5	Demonstrates considerable depth of knowledge in one or more area(s); and ability to collect, collate, analyse and synthesise a wide range of relevant technical information	Demonstrates ability to select and apply considerable depth of knowledge, tools and technical and communication skills in variable contexts and formulate appropriate responses to unpredictable and complex problems	Manages resources, processes and routine and non-routine activities in vocational and professional settings and works with substantial accountability for personal and group outcomes in contexts that are subject to change
4	Demonstrates a broad knowledge base with substantial depth in some areas, ability to analyse information, apply key principles, theoretical concepts and abstract thinking	Applies a broad range of technical and/or scholastic skills, use appropriate tools, methods and technologies to determine solutions to both predictable and unfamiliar problems, in variable contexts	Works independently under broad guiding principles in unfamiliar contexts, within established parameters, exercising autonomy for planning, supervising and evaluating the work of others and group outcomes
3	Demonstrates a broad knowledge base in a specific area, incorporating technical concepts, and ability to analyse information and make informed judgements	Applies a range of cognitive, technical and communication skills, using appropriate tools to solve a limited range of predictable and unpredictable problems	Shows ability for self-direction, requiring supervision in known and moderately changing contexts, within established parameters, and individual and shared responsibility for group outcomes
2	Demonstrates basic operational, factual and procedural knowledge in specific fields and ability to use and interpret relevant information	Demonstrates ability to undertake defined activities using a moderate range of practical, cognitive and communication skills and tools to apply known solutions to solve familiar problems	Works on routine tasks in predictable and structured contexts under moderate supervision, demonstrating limited judgement and some responsibility for quality and quantity of output.
1	Demonstrates a narrow range of basic operational knowledge and cognitive skills for everyday life, further learning and initial work	Can carry out processes that are familiar and limited in range, demonstrating basic technical and communication skills using basic tools	Completes directed tasks that are repetitive and predictable in highly structured and stable contexts within narrow parameters and under close supervision

Table 5.1 Ethiopian National Qualification Framework

Source: EOS Development Manual (MoE, 2014)

From Table 5.1 above, knowledge, skills and competence descriptors are criteria for levelling competences. As indicated in EOS development manual (MoE, 2009: 9), the scope of responsibility of Level - I and II completers in the work place is at production level, and for Level - III as a technical, Levels IV and V are Middle Management and Technical Management respectively. Furthermore, Table 5.1 above depicts also some initial indication of the expected competence at different qualification levels.

When the issue of occupational mapping is raised, it is inevitable to discuss the issue of occupational levelling as they are integral in occupational standard development. Most of the training providers explained that the issue of levelling is controversial. No one is clearly sure if really the Ethiopian TVET curriculum needs to be up to Level V. In fact, the TVET curriculum development officials ascribe it to the Ethiopian TVET Qualification Framework (ETQF) as it has been laid down in that way by the industry.

Some of the trainers guessed as such that most of the competences in EOS are adopted from the Australian occupational /competence standards, as in the Australian qualification framework the competences are levelled up to level V, thus, Ethiopia might have adopted the levelling system from Australia.

Regarding occupational levelling, one of the curriculum development officials from the Federal TVET Agency put it as follows:

> All competencies labelled under Level - I, II, III, IV and V are believed to enable the competent candidate to get employed and/or create his/her own work as long as that the training is provided properly.

However, from the document analysis made earlier, not all the outcome based curriculum should have begun from Level - I. It depends on the OS developed. If the OSs for particular occupation begin from Level - I, for instance, the curriculum to be developed also must commence from level one, and if its OS begins from Level - II, the curriculum also needs to begin from Level - II, and so forth. For instance, all occupational standards developed for the health sector begin from level - III. According to one of the curriculum development officials, the health sector/industry strongly argued and confessed that the health industry /labour market/ does not demand and require Level - I and Level - II. Therefore, it is the industry sector that demands the minimum occupational qualification level required for that particular industry /sector.

Some of the respondents from the training providers explained that they had no problem with the levelling system but there is difficulty with the classification and the structure of occupations on the whole. In connection with this, one of the TVET curriculum development officials strongly pointed out that exiting at Level - I and Level - II was necessary if the industry demands so. In line with this topic, the official stated that:

> The industry has laid down Level - I and Level - II. This is not without reason. It is because the competences that are laid down at level - I and II are employable and thus required by the industry. For instance, in the case of construction, Level - I or II graduate at finishing construction work, installation construction

> work, structural construction work can form a kind of group or small enterprise and can be organised to create their own businesses.

Regarding levelling, according to some of the TVET curriculum development officials, not all occupations need to start from Level - I, but there were some occupations that must start from Level - I. For instance, as they said, textile and leather garment fields can start from Level - I as majority of the activities are confined to these levels. However, some of the trainers doubted the necessity of exiting at Level - I and II for building construction work. They affirmed that, that was why most TVET colleges did not have Level - I and II exits training programme presently.

Regarding Level - I and Level - II exit, one of the college principals expressed the following:

> It is so difficult for Level - I and II TVET graduates in building construction fields to get jobs. Because those who have acquired skills prior to learning and in informal learning outshine them. The industry hires Level - I and II graduates as labourers. Besides, employers prefer the advanced qualification levels such as Level - III and level - IV. Therefore, it is wastage to have trainees graduated at Level - I and Level - II.

Another concern that the respondents did not agree upon and are confused with was the issues of Level - IV and V. Regarding Level - IV in Figure 5.1, and the combination of all occupations together to form one occupation (Level-IV), one of the HoDs questioned the idea in the following way:

> I wonder how those trainees, who have been trained in different fields at level - III can be gathered together and be provided with the same courses named “On-site building construction management” at level - IV.

From the concern above expressed by the HoD, it could be noted that the training providers are confused with the occupational levelling at Level - IV. It could be corroborated from the documents reviewed that the trainees who have been trained in different occupations such as building electrical installation work, sanitary installation work, masonry work, bar-bending work, carpentry work, plastering and painting work,

tiling work till Level - III are obliged to join “On-site building construction management-Level - IV” together.

5.3 Module development and content selection

In this section, the issues of data gathered regarding TVET modularization, Occupational standard into curriculum conversion and courses and contents selection are discussed.

5.3.1 The benefits of modularisation

As stated in the TVET Curriculum Development Manual (MoE, 2007: 12), it was highly recommendable to follow the principle of modularisation when developing the TVET curricula. This means structuring the TVET programme into a set of related Learning modules instead of designing the TVET programme in a monolithic way (MoE, 2007: 12). It is indicated in the National TVET Strategy and working documents about the meaning and necessity of TVET modularisation for Ethiopia. Modular learning provides opportunity for right mix of on and off the job (MoE, 2012: 2). It is also indicated in the strategy that the modularisation of curricula would allow for flexible entry and exit into TVET programme (MoE, 2008: 34).

Regarding the benefits of TVET modularisation, all the respondents agreed on the necessity of TVET modularisation. One of the TVET curriculum development officials agreed upon the necessity of TVET modularisation and said:

> Unlike the old system, which was non-modular in which the student was obliged to wait for a year to proceed to next grade/level, in the outcome-based TVET system it helps one at the end of the module and easily exit or proceed to the next module and thus measure and ensure quality.

One of the TVET curriculum officials explained that when one talks about outcome-based TVET system, it is inevitable to raise the issue of modularization.

Nearly all the respondents agreed on the necessity of modularisation. In this regard, witnessing to the importance of modularisation specifically, one of the TVET college principals said:

> Modularisation helps the trainee to go at his/her own pace. Meaning it helps to address and consider the fast-trainee, slow trainee and medium trainee. In fact addressing and taking the trainee's pace into consideration is demanding as it is difficult for the trainer to manage the slow, medium and fast trainees pace learning.

Furthermore, what the TVET curriculum officials at federal and regional levels and training providers articulated on the necessity of modularisation in the Ethiopian TVET system are summarized as follows:

- It allows flexible entry and exit within different programmes.
- Trainees, who drop out of a level - I programme after accomplishing some modules but without completing all modules, can re-enter the level - I training programme at a later stage to finalise the remaining modules and obtain the full qualification.
- It enables a trainee to completely understand and be competent enough to perform the tasks as per the standard laid down.
- It gives focus and emphases for every competence.
- It ensures training quality.
- It allows one to engage 70% in practice and 30% in theory (more practical).

From all the responses given on whether modularization is vital or not, most of the respondents unanimously agreed on the importance of course modularization. Nevertheless, some of the trainers and college principals were not comfortable on the way the TVET curriculum is modularized. They explained that the modules are not well organized and sequenced.

5.3.2 Occupational standard into curriculum conversion

It is indicated in the National TVET Strategy (MoE, 2008: 21) that identified competences needed in the labour market would become the final benchmark of teaching, training and learning, and that all institutions, rules and regulations of the TVET system would be (re-)defined so that they support citizens to become

competent. Regarding transforming the occupational standard into curriculum, a unit of competence can be converted to one or two learning modules and then one or two modules can be converted to one or multiple of learning outcomes. As stipulated in the Curriculum Development Manual (MoE, 2012: 5), it should not be assumed that one unit of competence would necessarily lead to one learning module. It is indicated in the Curriculum Development Manual (MoE, 2012: 5) that the number of learning modules would depend on the breadth and depth of the unit of competence. But in reality, from an analysis of the model curriculum developed for building construction work, the one-to-one conversion approach was practised. In other words, one unit of competence is converted to one learning module. The TVET curriculum development officials confirmed that this was done for simplicity. However, according to them, the room is open to address the curriculum developers' suggestions, if inquired officially.

Regarding OS into curriculum conversion, one of the training providers stated the following:

> The quality of OS developed has direct impact on the quality of the curriculum to be developed. That is, the more perfectly the OS is developed, the more the likelihood that the curriculum will have quality. This is because the Ethiopian outcome-based TVET curriculum is derived from the OS. In short, curriculum is the conversion of OS.

From are view of occupational standards and model curriculum developed by MoE (2010) in the Ethiopian TVET system and the components, it was found out that the OS are nearly directly converted to curriculum as such:

- Curriculum components/contents are the direct copy of the competencies in the OS and one unit of competence is transformed to one training module.
- Nearly one element is directly converted to one major content, and one performance criteria is converted into one or two contents

Figure 5.2 below shows one of the units of competence "finishing construction work", namely, "carry out measurements and simple calculations" is converted to training module "finishing construction work", namely "carrying out measurements and simple calculations".

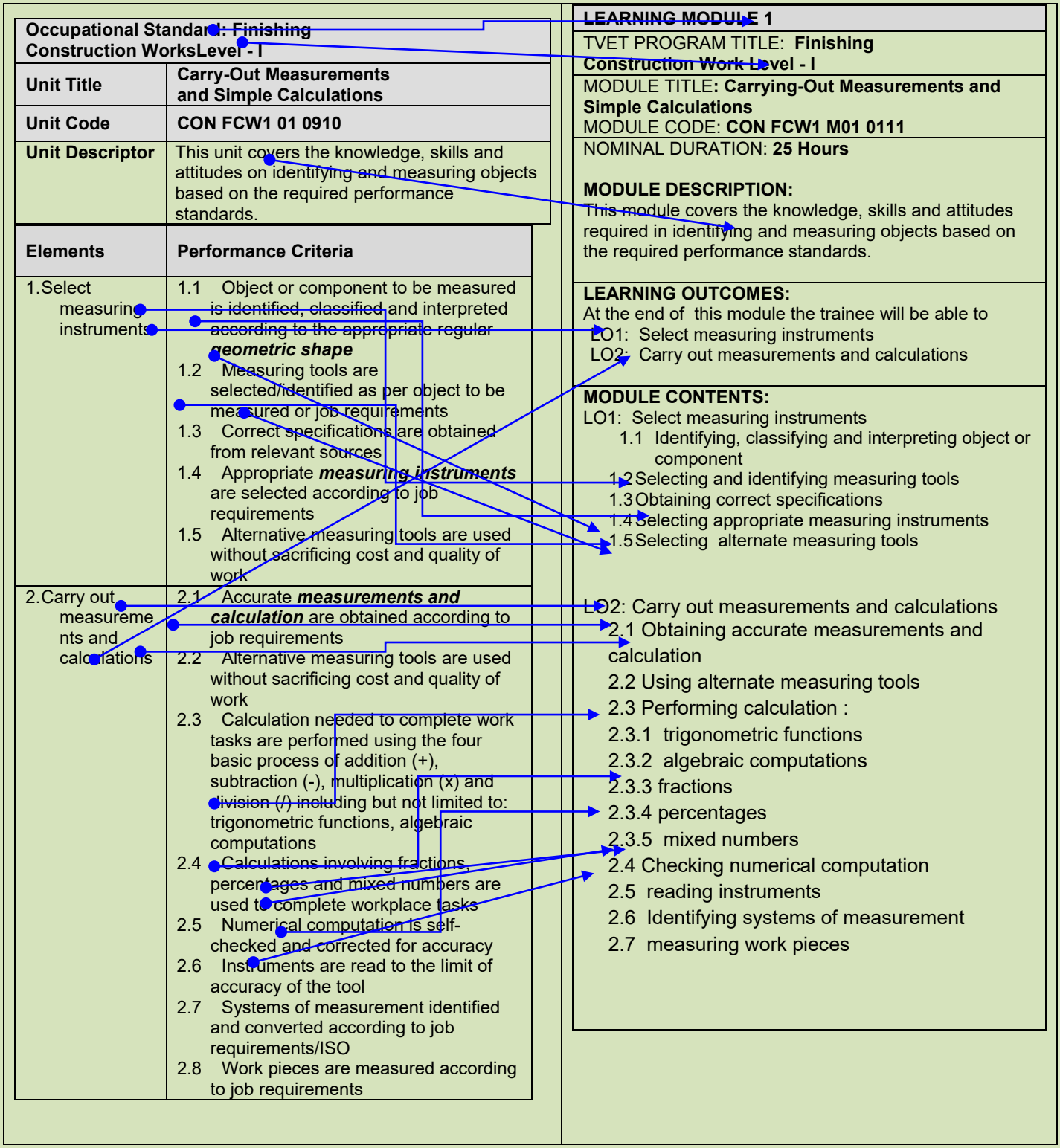


Figure 5.2 Sample of OS to curriculum conversion

Source: EOS and model curriculum for building construction (MoE, 2010)

Figure 5.2 above shows the methods of converting OS with its commentaries into curriculum. The figure shows one of the competencies of occupational standard named 'Finishing construction work', labelled at Level - I of building construction field. The arrows show which components of the competence are linked to which components of the curriculum. Table 5.2 below further depicts the transformation of OS/competence components into curriculum components and the relationship between a unit of competence and module of finishing construction work that are depicted in Figure 5.2.

No.	OS/competence components	Curriculum components derived from competence
1	OS name: Finishing construction work	TVET programme title: Finishing construction work
2	Unit title: Carry-out measurements and simple calculations	Module title: carrying-out measurements and simple calculations
3	Unit descriptor:	Module descriptors:
4	Elements	Learning outcomes Module contents
5	Performance criteria	Module contents Sub-contents

Table 5.2 Transformation of OS/competence components into curriculum components

From Table 5.2, the following features can be deduced:

- Curriculum components/contents are the direct copy of the competencies in the OS as one unit of competence is transformed to one training module.
- Nearly one element is directly converted to one major content, and one performance criteria is converted to one or two contents.

Furthermore, the elements and their respective performance criteria of the unit of competence were simply taken without adding any value from the trainers. For

instance, the following is stated in one of the OS developed for the building construction field:

1.1. “Object or component to be measured is identified, classified and interpreted according to the appropriate regular”.

When the above-mentioned performance criterion is changed to module contents, it is stated in the following way:

1.1. “Identifying, classifying and interpreting object or component”

The only thing manipulated by the curriculum developers is that the performance criterion which is written in passive speech is changed to active speech when converted to learning module content. So, if that is the case, as the following question can be raised: ‘What is the importance of curriculum and why do trainers not use the OS instead of curriculum?’

In the TVET Curriculum Development Manual, it is written in this way: “The number of modules should be based on the breadth and depth of each unit of competence (MoE, 2012: 5).When curriculum is constructed, a one-to-one approach is followed. That is, one unit of competence is converted to one module course. Most of the respondents in general and the trainers in particular were not comfortable with the direct conversion of competence to learning modules. They said that it is not correct to directly copy the curriculum from OS. Systematic learning materials could have been developed based on OS.

Regarding occupational standard development, the TVET curriculum development officials expressed that it is people from the world of work who should develop the competencies and level them. What is done by the curriculum developers is only changing the competencies to curriculum. In fact, according to some of the TVET curriculum development officials from regional and federal authorities, the generic /common competencies are selected centrally by federal authorities.

5.3.3 Courses and contents selection

There are courses and contents that repeatedly appear within and across training modules and levels. For instance, the modules named “planning and organising work activities”, “preparing job estimate and costing”, “preparing specifications for construction work” commonly exist in the occupations named “building electrical installation worker Level - III”:, the “sanitary installation worker Level - III”, and the “masonry worker Level - III”, with similar contents.

Figure 5.3 below depicts the similarities of contents between different training modules in an occupation named “installation construction work Level - I”. As can be observed from the Figure 5.3, there are learning modules which have learning outcomes with the title ‘plan and prepare’ and ‘clean-up work area’ redundantly in the same level, such as Level - II. Therefore, the trainer is expected to provide these contents repeatedly in similar fashion in Level - II. It was noted that the learning outcome ‘plan and prepare’, for instance, is found not only in Level - I, it is also found in Level - II, Level - III, Level - IV and Level V in abundance with same performance criteria. This shows that there is no vertical content organisation among the different levels. Some of the respondents remarked that the learning outcomes and modules having similarities could have been blended together and developed as a single entity or a learning package. For instance, one trainer suggested if the learning outcome ‘prepare and plan’ and ‘clean-up work area’ found in Level - I can be gathered and forms a module or sub-module otherwise. The same can be done for the rest of learning outcomes and contents in a particular level.

LEARNING MODULE 5	LEARNING MODULE 6
TVET PROGRAM TITLE: **Installation Construction Works (Level - I)**	TVET PROGRAM TITLE: **Installation Construction Works (Level - I)**
MODULE TITLE: **Preparing Surfaces for Construction Work** MODULE CODE: **CON ICW1 M05 0111**	MODULE TITLE: **Setting-out Profile Set-up for Building Works** MODULE CODE: **CON ICW1 M06 0111**
NOMINAL DURATION: **25 Hours**	NOMINAL DURATION: **45 Hours**
MODULE DESCRIPTION: The module aims to provide the learners with the required knowledge and skill to work effectively to prepare surface for masonry, concrete, tilling and plastering works.	**MODULE DESCRIPTION:** The module specifies the competence required identifying site boundaries and survey indicators, establishing, measuring and setting up of profiled set outs for buildings and structural components of building work. The unit includes the positioning of a building and associated structures on a site.
LEARNING OUT COMES: LO1. Plan and prepare . . LO7. Clean up work area	**LEARNING OUT COMES** LO1. Plan and prepare . . LO7. Clean up work area
MODULE CONTENTS: **LO1.Plan and prepare** 1.1. Plan/working drawing interpretation 1.2. Identifying and applying necessary requirements 1.2.1 Safety requirements 1.2.2 Regulatory requirements 1.2.3 Environmental protection . . **LO7: Clean up work area** 7.1 Materials disposal 7.2 Maintaining tools and equipment 7.3 Performing good housekeeping	**MODULE CONTENTS:** **LO1.Plan and prepare** 1.1 Plan/working drawing interpretation 1.2 Identifying and applying necessary requirements 1.2.1 Safety requirements 1.2.2 Regulatory requirements 1.23 Environmental protection . . **LO7: Clean up work area** 7.1 Materials disposal 7.2 Maintaining tools and equipment 7.3 Performing good housekeeping
LEARNING STRATEGIES:	**LEARNING STRATEGIES:**
ASSESSMENT METHODS:	**ASSESSMENT METHODS**:
ASSESSMENT CRITERIA: **LO1. Plan and prepare** 1.1 Work instructions, including plans, specifications, quality requirements and operational details are obtained, confirmed and applied 1.2 Occupational Health & Safety (OH&S) are followed in accordance with safety plans and policies **LO7. Clean up Work area** 7.1 Work area is cleared and materials disposed of, reused or recycled in accordance with legislation/regulations/ codes of practice and job specification 7.2 Plant, tools and equipment are cleaned, checked, maintained and stored in accordance with manufacturers' recommendations and standard work practices	**ASSESSMENT CRITERIA:** **LO1. Plan and prepare** 1.1 Work instructions, including plans, specifications, quality requirements and operational details are obtained, confirmed and applied 1.2 Occupational Health & Safety (OH&S) are followed in accordance with safety plans and policies **LO7. Clean up Work area** 7.1 Work area is cleared and materials disposed of, reused or recycled in accordance with legislation/regulations/ codes of practice and job specification 7.2 Plant, tools and equipment are cleaned, checked, maintained and stored in accordance with manufacturers' recommendations and standard work practices

Figure 5.3.Similarities of contents between different training modules in an occupation named "Installation Construction Work-level - I"
Source: EOS, developed by MoE (2010)

As one of the trainers asserted, the case of some UCs being redundant in OS is not a problem as such. In this regard, one of the trainers reflected his opinion as follows:

> As units of competencies show the skills, knowledge and competences that one as a worker should possess in order to perform specific task, some competences might emerge again and again in an OS. But in the case of the curriculum, the same learning outcome and contents and sub-contents that are derived from the repeated units of competences should not have appeared repeatedly in curriculum.

This shows that some training providers were not comfortable with the content selection methods. They revealed that there were modules and contents which were redundant in both core and generic courses. They mentioned that the learning contents named “plan and prepare” and “clean up” are shown within the same levels and across different levels.

One trainer revealed that the same contents are developed for different fields. The trainer mentioned the content named “Carrying out measurement and simple calculations” as an example and observed that:

> It is unknown up to what one should teach ‘carrying out measurement and calculation’. In other words, its scope and depth of the content is not known. Besides, simple calculation for each field should not necessarily be the same. Moreover, simple calculation for each level, such as Level - I, Level - II, Level - III and so forth should have been designed. But in the present curriculum it is the same. It is not known what simple calculation means in the curriculum. For instance, for concrete, it means ratio, percentage and so forth, for electrical it might be algebraic, for bar-bending, it might be geometry. But, no one is aware of what to teach. Therefore, there are times trainers either overlook it or do whatever they feel appropriate.

Regarding the content selection, as is shown in Figure 5.2 above, it could be noted from the model curriculum developed for the field –building construction works developed by MoE (2010) that the contents of the “carryout measurements and simple calculations’ developed for occupations named ‘building installation work’, ‘building

structural work' and 'building finishing work' are the same. Besides, some of the training providers expressed that there were contents which are worthwhile but were not incorporated in the curriculum. As they said, the content named 'glazing', for instance, was worth training in 'building structural work', but it was not included in the model curriculum.

5.4 Organisation of curriculum components and time allotment

In this section, two major sub-topics are discussed. The first sub-section presented about module sequence, breadth and width, and the second sub-section deals with the time allotment.

In this section, the responses provided for the following question are presented:

- How comfortable are you with the curriculum sequence, scope (breadth and width) of the TVET curriculum designed in Ethiopia?
- What are your views on the time allocation in the TVET curriculum?
- How far does the existing curriculum contents portray what to do and how to address contents during in-company /cooperative learning/?

In all cases, first what the National TVET Strategy and working documents have discussed are presented and subsequently what respondents indicated regarding the issues are analysed as follows.

5.4.1 Module content sequence, breadth and width

Regarding module sequence, the following are indicated in the TVET Curriculum Development Manual (MoE, 2012: 7):

- The sequencing of modules should reinforce learning experiences, by building on competences previously acquired.
- As trainees progress through the programme, there may be points at which they could leave with recognised outcomes leading to possible employment opportunities or re-enter the programme at a later stage to continue their training.

It is also indicated in the TVET Curriculum Development Manual (MoE, 2007: 19) that deciding on an intelligent sequencing is the responsibility of the TVET provider. As reflected in TVET Curriculum Development Manual (MoE, 2007:19), typical considerations with regard to sequencing are outlined as the following:

- *"from simple to complex"*
- *"from known to unknown"*
- *"from near to far"*
- *"from concrete to abstract"*
- *"from rule to exception"*
- *"from easy to difficult"*
- *"from general to specific" (deductive)*
- *"from specific to general" (inductive)*
- *"principles of the related work process" etc.*

Therefore, the depth and breadth of the lessons taken by trainees at specific grade and prior to joining TVET programme need to cater for the skills and knowledge the trainees are expected to acquire. It is stated in the TVET Curriculum Development Manual that: "The number of modules should be based on the breadth and depth of each unit of competence" (MoE, 2012: 7). In this regard, Table 5.3 below depicts an example of the TVET programme structure, sequence and time allotted for one of the building construction work field.

Table 5.3: Example of the TVET-Program structure, sequence and time allotted

Unit of Competence title	Module Title	Learning Outcomes	Total hrs	In-institute (hrs) (30%)	In-company (hrs) (70%)
Carry Out Measurements and Simple Calculations	Carrying Out Measurements and Simple Calculations	• Select measuring instruments • Carry out measurements and Calculations	25	7.5	17.5
Perform Bench Work	Perform Bench work	• Layout and mark dimensions/ features on work piece • Cut, chip and file flat, rectangular or round blocks	50	15	35
Prepare Surfaces for Construction Work	Preparing Surfaces for Construction Work	• Plan and prepare • Place screeds • Clean up work area	25	7.5	17.5
Set out Profile Set-up for Building Work	Setting out Profile Set-up for Building Works	• Plan and prepare • Identify and indicate site boundaries • Set out first line for building alignment • Clean up	45	13.5	31.5

Source: Model curriculum for building construction works (MoE, 2010)

As could be noted from Table 5.3 above, each unit of competence concurs with its module title it is derived from. Furthermore, it can be seen from the table that from the total time allotted for each module, 70% and 30% times are allotted to practice and theory respectively.

According to one of the TVET curriculum development officials' opinion, as units of competences are levelled and sequenced based on the complexity of the tasks, and therefore the curriculum is developed accordingly from OS, it addresses the issue of scope. However, some of the training providers observed that the issue of curriculum content scope was not considered in TVET curriculum.

Though the sequences of module are in accordance with the unit of competence as could be noticed from TVET programme structure (Table 5.3) above, some of the trainers explained that it was the curriculum developers who decided the sequence of learning modules. In this regard, some of the trainers indicated that they do not necessarily follow the sequence as indicated in the OS and curriculum during training delivery. They explained that they can rather plan and lay down the order of modules as they feel suits them and the college situation. Most of the trainers confirmed that they often train generic (common) courses last and the core (major) courses first.

One of the trainers elaborated it in the following way:

> If we take the course-module named "installation construction-level - I", for instance, besides 10 core (major) courses, there are 6 generic (common) courses, titled, applying quality standards, working with others, receiving-responding to workplace communication, demonstrating work values, developing entrepreneur, and understanding applying 3S. We are obliged to offer training for these generic courses though we are not the right people to do so. We often train the generic courses at the last and the core (major) courses first because we hate offering these generic courses as we are not competent enough to provide them and thus consider these courses as if they were less important.

However, some of the trainers revealed that they first deliver training on the generic courses and the major courses later. Most of the trainers expressed that it is the same trainers that provide training on both generic and major courses. All of the HoDs confirmed that there are no special trainers in the training institutes who are trained to offer training for generic courses.

It could be noted from the trainer's expression above that it is the self-contained that the same trainer that offers both core and generic courses which is really difficult for one trainer to get prepared and offer both core/major and generic/common courses. This indicates that there should have been a special trainer who should offer training for generic courses as these courses naturally comprise more managerial and life-skills contents.

5.4.2Training duration and time allotment

According to the responses from the TVET curriculum development officials, in principle, training duration and time were allocated based on the depth and breadth of the contents, which is determined by curriculum developers. The total sum of allocated times of all learning outcomes makes up the total sum of learning modules, and the total times of learning modules make up the total sum up for an occupation. It is the curriculum developers (during curriculum development workshop) who allot times for each course. As a module course taken from one of the building construction training area depicted in Table 5.3 above, there is no specific time allocated in the curriculum for in-company training. As could be noted from some of the trainers' responses, it is the trainer who identifies which content should be covered at institute (theory) and which content given in-company (practice on actual job practice) in consultation with the industry supervisor or trainer at the time of signing memorandum of understanding (MoU) for in-company training. According to the response of one of the HoDs, the trainer himself/herself identifies and classifies those contents in which practicing cannot be held in-institute and those contents which need to be offered in company. As stated by some trainers and also confirmed by some of the curriculum development officials at regional states level, it is the trainers who allot time for theory and practice. Nevertheless, some training colleges simply accepted and used the time allotted by the regional TVET authorities. However, it emerged from the model TVET curriculum developed by Federal TVET Authority that there is no time allotted for theory and practice. To this end, the federal TVET curriculum development officials described that the outcome-based TVET system Ethiopia is pursuing is so flexible and hence as

there is variation in resource availability among the training institutes, the time allotment is left for TVET providers..

There is no uniform understanding about theory and practice and/or in-institute and in-company training. It could be noted by the researcher that the contents of the curriculum adopted by some regions are divided into theory and practice while the contents are divided into ‘in-school/institute’ and ‘cooperative/in-company’ by some other regions. Regarding its implementation, most of the trainers concluded that the ‘30/70’ (30% theory and 70% practice) time allotment was not in effect as reflected in the curriculum they are using.

Regarding the ‘30/70’ issues, one of the trainers expressed his view as follows:

> Most trainees waste their time in the name of practice and in-company training by wandering here and there outside the college campus. But the reality is that they do not practise as required. In my opinion, it is rather good if ‘70/30’(70% practice and 30% theory) is converted to the other way round ‘30/70’(30% practice and 70% theory) taking the real situation of our country into account.

From the statement above, it can be explained that the trainer comes to this conclusion not because he believes in the time for theory to outweigh that of the practice. But, he said so to depict that the time allotted to practical training was not put into effect. Therefore, it can be deduced that the trainees’ times that would have been utilised wisely were wasted. This may lead to students staying at a particular grade level for a long time with minimum competence acquisition.

Though the time allotted was not precisely exact but nominal, according to trainers’ observation, in some learning outcome, excess time was allotted while insufficient time was allotted for training for some learning outcomes. For instance, some trainers confirmed that the time allotted for generic module course named “work with others” was too far insufficient. The trainers revealed that they have allotted less time for generic (common) courses because they have insufficient knowledge about the subject matter.

On cooperative training, some of the respondents stated that they have allotted 70% for cooperative training and 30% theory as the curriculum demands. One of the trainers confirmed that the time allotments were not appropriate so they are sometimes obliged to adjust it accordingly. Regarding the issues '30/70', one of the trainers pointed out that:

> Regarding theory and practical training, time is allotted into 70% in-company and 30% theory in the curriculum. Even though it is said by officials that in-company training should be given priority to those courses that training materials and equipment are not available in the college workshop/laboratory/, in reality it was not being implemented in that way.

Generally, from the respondents' opinions, it could be deduced that there is doubt on the '30/70' implementation and that there was a discrepancy between what is planned and what takes place on the ground.

5.5 Curriculum implementation and training delivery

In this section three major factors are presented. The first sub-section deals with mode of training delivery, the second one discusses on reference materials and the last one about trainers' capacity and empowerment methods. The following were some of the questions raised to respondents:

- What isthe relationship between curriculum implementation and instruction in the TVET curriculum design in Ethiopia?
- How will you describe the availability of study and reference materials in the TVET institutes in Ethiopia?

Accordingly, the responses obtained from the participants are presented and discussed in this section. First, what the National TVET Strategy and working documents have documented are presented and subsequently what respondents indicated regarding the issues follows.

5.5.1 Mode of training delivery

It is indicated in the TVET Curriculum Development Manual (MoE, 2007: 17) that the:

> Concept and mode of delivery deal with the issue of proper methodological and organisational approach to the occupational learning process. Based on relevant frame conditions – like target group etc. – a basic decision has to be taken with regard to the general approach to TVET delivery. Two basic types of TVET programmes can be differentiated, namely, formal and non-formal.

It is indicated in the TVET Curriculum Development Manual that selection and definition of an adequate mode of delivery is an important design parameter of TVET programmes (MoE, 2007: 17). Regarding the relation between curriculum implementation and training delivery, the following points are noted in the TVET Curriculum Guide (MoE, 2007: 12):

- There is a comprehensive understanding with regard to curricula taking into account relevant aspects of facilitating the learning process (learning outcomes, contents, concept of delivery, etc.)
- Curricula should reflect the need of trainee-focused and trainee-activating TVET delivery.

As indicated in the TVET Curriculum Development Manual (MoE, 2007: 18), organizational concepts of occupational training and learning comprise:

- fully TVET institution based;
- fully company based; and
- co-operative types of occupational training, conducted in co-operation between the TVET-Provider and companies, and comprising learning phases in the TVET-Institutions and other learning phases within the company (e.g. apprenticeship training according to the “Dual Training” Approach as implemented in Germany).

As indicated in TVET curriculum development manual (MoE, 2007: 18), venues of training can be the TVET institutes and/or in-company. The didactical-methodological approaches suitable for adequately addressing skills, knowledge and behaviour are

executed as learning strategies and scheduling can be time-based versus flexible approaches according to availability of target groups.

5.5.2 The impact of curriculum design on training delivery

Regarding the issues on curriculum implementation and instruction, one of the HoDs noted the following:

> Though model curriculum has been given to TVET providers to use as a base during session plan development and training delivery, since it is known that there is discomfort in contents of the curriculum, the trainers do not feel comfortable to include all. Trainers often offer training as they want and they can add contents they think to be inclusive in the curriculum and also leave contents they feel less worthy from the curriculum.

The statement by the HoD above suggests that the OS and curriculum were not comfortable for trainers to use and made them feel that they waste trainees' time for they were doing as they wanted. The occupational standard and model curriculum developed by MoE (2010) for building construction works indicates that it is now about a decade since the OS and the model curriculum of building construction works that training providers have been using were developed, without getting revised. In fact, some of the trainers and HoDs explained that some of the trainers have strived to manipulate the model curriculum. It appears what the OSs the training providers were referring to (MoE, 2010), is the one that were developed a decade ago by MoE.

From the model curriculum of building construction works developed by the Federal TVET Authority, all modules contents of this curriculum are written in the form of learning outcomes not in the form of learning contents; and all module contents in this curriculum are copies of leaning outcomes. Regarding the learning outcomes and content selection on training delivery, one trainer expressed the following view:

> As we know, learning outcomes are different from contents of the modules. Learning outcome is knowledge, skill and attitude that the trainees are expected to acquire while content refers to topics that trainees are expected to learn. So,

> all model contents of this curriculum should have to be written in the form of course content.

This implies that the idea of what the learners should be able to do or the knowledge, skills and attitude the learners should acquire in order to perform a particular job and what the learners should learn /be taught do not match.

Regarding training presentation, one of the HoDs and some trainers pointed out that majority of TVET trainers were using the 'Amharic' language for training though the materials developed were in English language. While expressing this issue, one of the HoDs said:

> The trainers first translate the materials developed from English to Amharic language before they present to the class. This is because most of the TVET trainers, even those who are seniors fail to present training in English. It is said totally that TVET is being given in Amharic specifically in most of the Addis Ababa TVET colleges as if it were officially allowed. That is really very embarrassing and shameful.

One of the TVET colleges' principals explained that Level - I& II training are offered by the "C" level trainers and these "C" level TVET trainers are very poor in English as they themselves were not taught English.

Concerning the training materials preparation, one of the TVET colleges principals expressed that each trainer was supposed to prepare his/her own reference materials that befit the subject matter they offer for trainees. But one of the trainers revealed that in most cases, this was not the case. According to him, some trainers use the same material another trainer has prepared irrespective of the subject matter he/she is training.

Regarding the training materials preparation, one of the trainers revealed that:

> On the training delivery side, all the Level - I trainees take the course named "Bench work" for instance. Say, in our cases, all trainers in the three building construction fields, i.e., building installation work, building structural work and

> building finishing work, are assigned to take the course in the Department of Sanitary Construction by one instructor who is a graduate in sanitary construction. If, say, “Gear formation” is the training content he/she is offering for sanitary work department students, the same content is offered to the building electrical installation work, building structural work and building finishing work, the concrete work without modification.

The statements above illustrate that trainers do not even adapt the contents towards the courses they present. This might be because the contents developed in the curriculum might be the same; or trainers are not able to prepare their own training materials.

One of the reasons why most of the trainers were using reference materials which were not designated for their specific field might be because they were not able to customise the materials they have obtained from somewhere. However, there could have been bench work reference materials designed for masonry, for electric installation worker, for bar-bending, and so forth in isolation, or there should be a course that comprehensively incorporates all bench work contents for all fields.

As indicated in the Curriculum Development Manual (MoE, 2007: 9), and asserted by HoDs, the TVET training delivery style is self-contained, meaning that one trainer offers training of all units of competencies, i.e. the major (core), common (generic) and so forth. It is one trainer who provides theory and practice for all, say, 17 competences or learning outcomes in a curriculum developed for one level. One of the trainers empathetically explained that it is difficult for one trainer to acquire all these competences and offer training.

5.5.3 Reference materials and training delivery

The Federal TVET Authority has developed Training, Teaching and Learning Materials (TTLM) manual which is intended to create a common understanding of TTLM development process including scope, contents and format and to lay a foundation to anyone who has a stake and serve as a reference guide and providing user-friendly help and advice to those who want to develop a TTLM (MoE, 2012: 1). According to

the TTLM development manual (MoE, 2007: 5), TTLMs are all types of materials suitable or specifically designed and developed to support occupational learning processes – and therefore– helping to achieve the desired learning outcomes (LO). The TTLMs are trainer-made printed instructional aid that supplement the trainer's oral and visual instructions (MoE, 2012: 2). Developing TTLM is the mandate of training providers (MoE, 2012: 9).

Reference materials are very important in order to implement curriculum and deliver training. Some of the training providers strongly complained about the extreme scarcity of reference materials for TVET on the whole. One of the TVET college principals expressed that the scarcity of training reference is so severe in most fields/occupations and therefore majority of trainers were using whatever they obtain from the Internet. Indeed, some trainers explained that they were using their previous notes and reference materials they had been using during their degree study.

One of the trainers expressed the severity of the reference materials scarcity as follows:

> As there is no any appropriate reference material and text books in the college, trainers use whatever they obtain from the Internet. Furthermore, majority of existing contents and learning outcomes in the TVET curriculum cannot be found on the internet. Even if you get it, it does not fit the Ethiopian context. On the contrary, there are number of contents which are worth training but cannot be found on the Internet. Therefore, the trainer is obliged to skip it over and pass to the other contents available on the Internet.

The quality of the reference materials that are found from the Internet depend on the on a number of factors and cannot be guaranteed. Besides, the skills of trainers to browse and the competence and educational level of the trainers also matter in the development of training materials. Therefore, some trainers might use very simple training and straightforward materials while others might present complex training materials. As a result of this, the quality of training delivery is mostly compromised.

5.6 Curriculum revision and evaluation

In this section, the issues of curriculum revision and evaluation are discussed. Furthermore, issues on the extent to which the TVET curricula are validated by trainers after its development are presented.

The revision results show strengths and weaknesses of the curriculum, and its improvement includes the enhancement of the identified strengths and the elimination of the discovered weaknesses (Ellis, 2013: 48). It is indicated in the TVET curriculum manual (MoE, 2007: 12) that if the programme is to retain its credibility, the continued support of key stakeholders would be guaranteed by considering the outputs of the following mechanisms listed below:

- Evaluating trace study of graduates and their employers;
- Reviewing programme and module assessment strategies for validity, reliability, flexibility and fairness;
- Seeking feedback from trainees on the training delivery;
- Checking progress of trainees who have proceeded through agreed arrangements (pathways, articulation, credit transfer etc.) to other training programmes at the same or higher levels; and
- Evaluating the relevance of module contents through industry visits and consultation with industry personnel.

The following questions were put to respondents:

- What is your opinion on the curriculum revision?
- How often is the TVET curriculum you are using revised?
- How do you validate and authenticate the curriculum after draft?

As indicated in the TVET Curriculum Development Manual (MoE, 2007:12), curriculum needs to be revised periodically. The TVET Curriculum Development Manual further stipulates the following:

> Since occupations and their specific characteristics change over the time and Ethiopian Occupational Standards (EOS) will be reviewed and adapted accordingly within the process of EOS-revision, curricula needs also to be

> revised in order to continuously reflect “up to date” occupational requirements (MoE, 2007: 12).

However, from the document analysis made on the OS of the building construction works currently being used in most of the training institutes and also from the information gathered from the respondents, it was noted that there is no OS getting revised. In other words, the OS the training providers were using presently is the one that was developed ten years back by the MoE. Some of the training providers revealed that because the OS is not revised so far, TVET institutes were deviating from following the OS and the curriculum derived from it and providing training as they wish. In other words, the TVET institutes and their trainers were deciding what they think istrivial and include what they think is important.

Regarding the issues of revision, one of the TVET curriculum development officials revealed that there was no predetermined plan for revision and that revision took place when demand arose. The demand might be the change of labour market demand and industry’s labour. One of the indicators that there is no systematic and pre-planned revision system is that most of the curricula that are currently in use were developed a decade back, with no revision.

Regarding the validation and authentication of the curriculum after draft design, one of the TVET curriculum development officials from the Federal TVET Agency confirmed that:

> There was validation workshop for OS development of the building construction works but there was no validation workshop for the curriculum. The reason for the absence of the validation of the curriculum was that the need for revision at federal level did not arise as TVET curriculum developed was just a model and the TVET institutes had the right to revise and customize the curriculum to their real environmental situation.

From the expression of the official, it can be deduced that OS is developed centrally while the curriculum can be developed regionally. Hence, it could be inferred that the

regions are waiting for the federal to revise the curriculum per se or order and permission from the federal to allow the regions to revise the curriculum and the federal on its part expect the curriculum to be revised by the regions and as a result of this ascription, the curriculum is left unrevised.

Fretwell et al. (2001: 2) assert that a country should decide to start with pilot activities at the local level in high priority occupations and sectors, and then move to a national level. Regarding whether the curriculum developed was piloted or not, most of the trainers explained that they know nothing about that. However, one of the curriculum development officials at federal level ascertained that :

> It is only EOSs that are oftentimes validated by industry and the TVET curricula have never been piloted. However, as the training providers have the mandate to adapt the model curriculum to their real situation, there might not be piloting the curriculum.

However, while emphasising the importance of piloting the curriculum, Tubsree and Bunsong (2013: 39) stated the following:

> Since the development and implementation of competency-based qualifications (involving standards, levels, skills recognition and institutional arrangements) are very costly in terms of training infrastructure and staff capacity, piloting of the competency-based training approach in a few economic and employment growth areas is recommended, rather than a wholesale training reform strategy.

Regarding the OS and curriculum revision, one of the TVET curriculum development officials argued that revision of OS has been undertaken as follows:

> On the revision side, whenever OS and competences are manipulated it is inevitable from our side to manipulate or revise curriculum and its contents. For example, the naming ‘plumbing’ is converted to ‘sanitary construction’ and some of its components changed, we also revised the curriculum accordingly. Furthermore, we develop curriculum when generic competences are added.

> For example, when the competence named Kaizen and other related competences were developed; we developed the curriculum for them accordingly.

What can be noted from the responses above is that one cannot conclude that the OS and curriculum are totally stagnant as there was rather a kind of revision specifically in OS. But as could be noted from the so called curricula revised, it is simply a kind of batching not radical change as expected. It could be noted from the OS and curricula the TVET providers were using that the revision of OS is done so seldom that almost no any revision for OS of building construction work has been undertaken for the last decade. Regarding OS and TVET curriculum revision, one of the TVET curriculum development officials said:

> While developing assessment tools or while conducting assessment, the industry might face problem to use the existing OSs developed. Under that circumstance, the industry might report the problem to federal TVET Agency, and subsequently the TVET Agency requests the industry to revisit it. Or on the other hand, the trainers might report to the federal TVET Authority that the curriculum they were using had limitations which are attributed to OS developed by the industry. Then, the TVET authority, in turn gathers the industry (most often experts from the industry) and makes them revise it.

The explanation of the TVET curriculum development reveals that there was no formal way of giving feedback to Federal TVET Agency to revise curriculum. One of the TVET colleges principals explained that implementers should have the right and get the opportunity to give feedback on the problems they are encountered during curriculum implementation, and the TVET Authorities should lay a clear system to get feedback from the implementers. There is neither clear feedback mechanism through which the implementers ask for clarification, nor give comments on the curriculum they were using.

5.7 Stakeholders' involvement in curriculum design and development

In this section, different issues regarding stakeholders' involvement in OS and curriculum development are discussed. The first section outlines about the responsibility of federal, regional and TVET colleges in OS and curriculum development. Subsequently, the rest of the subsections present discussion about who have developed OS and TVET curriculum, where should TVET curriculum be developed, who should be engaged in OS development, who should participate in curriculum development and finally about the challenges in curriculum design and development.

In this regard, the following questions were raised to participants:

- Who developed OS and the TVET curriculum that are being used in TVET colleges in Ethiopia?
- Where should OS and TVET curriculum be developed?

Accordingly, the perspectives of the National TVET strategy and working documents related to the issue and the responses obtained from participants are presented.

5.7.1 Responsibility of TVET authorities and colleges in OS and curriculum development

In the Ethiopian TVET system, when the curriculum development is raised, it is inevitable to discuss about issues related to OS development process. This is the case because the Ethiopian TVET curricula are the merely reflection of OS. Any strengths and limitations that are exhibited in curriculum designed and development are attributed to the OS design and development.

In other words, OS and curriculum have similar structural maps as such:

- One occupational standard is transformed to one curriculum. i.e., occupational standard – Level - I is converted to curriculum – Level - I. for instance, the OS entitled "Installation construction work –Level - I" is transformed to curriculum named "installation construction work –Level - I".

- Units of competence and modules go one-to-one. Put differently, the number of units of competence in a particular occupational standard is equal to the number of modules of the curriculum derived from the same OS. For instance, as illustrated in Figure 5.1, the number of UCs for the OS of Installation construction work –Level - I" is 16 and the number of modules of curriculum of Installation construction work –Level - I is 16.

Therefore, it is necessary to examine the roles and responsibilities of federal, regional and TVET institutes in OS and curriculum development, who have developed OSs and curriculum, who should develop them and how they are developed.

The following is indicated in the Curriculum Development Manual (MoE, 2007: 8):

> The curriculum development process in the Ethiopian outcome-based TVET system will be actively supported and facilitated by the Federal TVET Agency – in line with one of its mandates to provide technical support to the regions. The main responsibility of developing adequate curricula will be given to the individual TVET – providers.

However, it is noted from the review of the TVET curriculum of the building construction works that the training providers are currently using that, the TVET institutes have not developed their own curricula and instead use the model curriculum developed by Federal Ministry of Education. In this regard, some of the trainers stated that they lack the capacity of developing curricula unless supported by regional and federal TVET authorities. This requires systematic capacity building programmes and regional and federal TVET authorities have the responsibility to offer facilitation and capacity-building services and can be approached for support.

With regard to curricula and curriculum development, the role of the federal authorities has changed from developing binding curricula as a national standard to a main focus on facilitation – in line with one of its mandates to provide technical support to the regions (MoE, 2007: 10). According to one of the federal TVET curriculum development officials, model curriculum would be developed by a group of experts from different regional TVET authorities based on the EOS developed. Succinctly, as

could be noted from the TVET working documents, the Federal TVET Authority should not be responsible to develop curriculum. However, it was noted from the review of curriculum developed being used currently by some training institutes that it is the Federal TVET Authority that has developed the TVET curricula.

Regarding the responsibility of TVET institutes to curriculum development, the following is stated in the TVET Curriculum Development Manual (MoE, 2012: 1):

> In the reformed National Ethiopian TVET system, the main responsibility of developing adequate curricula that are developed based on Ethiopian Occupational Standards (EOS) is given to the individual TVET providers. TVET providers need to accept and actively discharge responsibility with regard to curriculum development.

However, from the TVET curricula the TVET providers were using, it emerged that the TVET providers could not discharge the responsibility given to them to develop curricula for their respective institutions. Rather the training providers preferred to stick to using the model curriculum developed by the Federal TVET Authority.

5.7.2 Who have developed OS and TVET curricula?

According to the principles of the National TVET Strategy, OS should be developed by industry (MoE, 2008: 15). However, according to the responses obtained from TVET curriculum development officials, OS development is facilitated under the auspices of the Federal TVET authority. The TVET curriculum development officials agreed that it is the industry that is developing OSs and that the Federal TVET Authority only plays the facilitation roles. They further expressed that TVET trainers from different TVET colleges in the country are invited and gathered somewhere and do develop curricula, based on the OS already developed by industry. However, one federal TVET curriculum development official strongly argued that it was the training institute that should develop curriculum. The official suggested that it was only the model curricula that need to be developed by the Federal TVET Authority. The responses of the regional TVET curriculum development officials and training providers did not deny that the model curricula which are developed centrally were sent to TVET colleges.

But some of the training providers stated that they customised it to their regional work environment contexts. They asserted that at least the learning contents and the time allotted were manipulated according to real situation to the regions and the environment in which the curriculum is implemented.

According to one of the TVET curriculum development officials, model curricula were developed at federal level nearly for all the OSs already developed. In this regard, some of the regional TVET curriculum development officials argued that they had never developed by themselves nor manipulated the OS developed by Federal TVET Authority. In other words, they were using the model curriculum as it is. On the contrary, some other regional TVET curriculum development officials stated that they customised the model curriculum sent to them from Federal TVET Authority to their regional real situation. Still some respondents stated that they have customised the curriculum developed at federal level to the TVET institute's real situation. Regarding OS, some regional curriculum development officials revealed that they could not develop OS by themselves but requested the federal authorities to develop it in the field they wanted.

In fact, as pointed out by the federal TVET curriculum development officials, it is known that the relevant and respective ministries participated in OS development, not in curriculum development. According to the responses of one of the federal TVET development officials, the TVET curricula were developed by trainers under the auspices of Federal TVET Agency. The official further explained that the building construction works field trainers from different training institutes were made to participate in the curriculum development workshops. In this regard, one of the TVET curriculum development officials explained that the number of trainers who participate in curriculum development of "building construction works" vary from 5 to 7. He further stated that the curriculum was developed through workshops under the auspices of Federal TVET Authority.

Regarding the OS development process, there are contradictory actions between what is reflected in the working documents and what is implemented. As put in the National TVET strategy (MoE, 2008: 15), OS should be fully developed by industry.

Nevertheless, according to the responses from the trainers and HoDs, in reality, OS was developed by the industry under the auspices of the TVET authority. If that is true, there is no way for the OS to be free from being manipulated by the TVET Authorities. Regarding who should participate in TVET curriculum development process, the federal TVET development officials confirmed that the curriculum is developed by involving trainers. This shows that there is congruence between what is reflected in the Ethiopian TVET curriculum development manual and what was carried out in the real curriculum development activities. However, despite the Federal TVET Authority's assertions that only model curricula are developed at federal level, it is this model curricula that is being used in most of the training institutes. This shows that most of the training institutes are using the curriculum that are not developed at their institute but the model curricula which are developed centrally and were sent to them.

5.7.3 Where should TVET curriculum be developed?

There is debate on where the TVET curriculum needs to be developed among the respondents. Some respondents suggested that the curriculum needs to be developed at regional level. Few of the respondents, however, remarked that the curriculum needs to be developed at college level and still others contended that it was preferable if curriculum was developed at federal level. One of the TVET curriculum development officials said the following as to where the Ethiopian TVET curricula should be developed:

> The mandate of curriculum development is granted to TVET institutes, though it is being developed at federal level, so far. This is done because, practically, there is lack of capacity on the part of the regions and TVET institutes to develop their own curriculum. In my opinion, I think, in Ethiopia's present context, the TVET curricula need to be developed centrally at federal level and then be adapted to their real situation by regional TVET authorities.

One of the trainers also articulated the following as major reasons for their preference for the curriculum to be developed at federal level:

> As curriculum is developed from OS, and OS in turn is developed at federal level, and TVET institutes do not have mandate to manipulate them, say cannot change and move from the competencies put in Level - III to level - II and so forth, there is no need to give the curriculum development authority to TVET institutes. Nearly all regions and the TVET colleges have no capacity and capability to develop curriculum. In other words, they are not empowered in human and other resources.

Another trainer who favours the TVET curriculum to be developed at federal level articulated his reasons for his preference as follows:

> Even though there is slight variation in labour market demand among regions, the types of competence required to perform specific tasks are similar across the country. As there is no standardised industry at regional and local level, OS and curriculum need to be developed at federal level because if curriculum is developed at federal level instead of at institute level, quality and equity can be ensured. As we are making curriculum to the international standard, it needs to be done federally.

No respondent did agree on the issue that the curriculum be developed at institute level. Some of the respondents said that OS must be developed at federal level, but curriculum should be developed at regional level. They suggested that the capacity of regions rather need to be developed so that they are empowered to be able to develop the curriculum that suits their real regional situation.

On the issue of where the curriculum needs to be developed, the following is articulated by McKimm (2003: 8) that:

> Centralised curricula tend to be more structured and orderly and it is easier to ensure uniformity and a standard approach to teaching and learning. A centralised curriculum may allow better access to a wide pool of expertise but be less sensitive to local needs. Decentralised curricula tend to be more appropriate to students' local needs and often ensure better ownership of the course by teachers. Decentralisation can allow for a variety of approaches to

design and delivery and enable comparisons of the strengths and weaknesses of each.

Even though both the centralized and decentralized curriculum development approaches have their strengths and limitations, it is vital to analyse which one is better in TVET programmes. Generally speaking, there is no similar view from the respondents on who should develop and where to develop TVET curriculum. Most of the respondents did not agree on the TVET institutes developing the curriculum from scratch. Even though it is stated in the National TVET strategy document (MoE, 2008: 35) that it is the TVET providers that should develop curricula, some of the respondents argued that TVET curricula should be developed nationally /centrally. But as they have said, the initiative could be taken from regions or even TVET institutes. One of the TVET curriculum development officials suggested that the model curriculum needs to be developed at federal level to give framework for the regions and TVET institutes. Most of the respondents agreed that the curricula that are developed at federal level should be adapted to the real work environmental and institutional situation.

5.7.4 Who should be engaged in OS development?

As clearly indicated in the Occupational standard development manual (MoE, 2012: 18), it is the industry that develops OS. Trainers are not allowed to develop OS. Regarding who should participate in curriculum development, the following statement is written in the National TVET Strategy: “Competences will be described in the National Occupational Standards to be developed by people knowledgeable on and experienced in the world of work” (MoE, 2008:21).

In connection with the OS development, most of the trainers and HoDs explained that they were not sure if the industry has owned the OS development process. One of the HoDs remarked that:

> TVET authority should take itself out of OS development activities and industry should take its mandate to develop OS fully. Otherwise, in circumstance where the industry has not taken full responsibility, and the TVET authorities have not

> given the mandate of OS development to industry and if the OS is used only as input for curriculum development, the trainers should participate in OS development.

One trainer participant said that he was not worried if the OS is developed by industry or not. What matters, according to him/her, is whether it really reflects the country's labour market demand or not.

The National TVET strategy reviewed and the responses from most of the trainers and HoDs urged that the OS need to reflect the labour market demand and thus be developed by the respective industry under the auspices and responsibilities of the industry itself.

5.7.5 Who should be engaged in curriculum development?

Regarding who should participate in TVET curriculum development, most of the respondents argued that if the curriculum is the direct derivative of OS, and since OS is undertaken by industry, a person who participates in OS development should also participate in curriculum development as well.

One of the regional TVET curriculum development officials stated the following about the development of OS:

> When curriculum is developed, most the curriculum developers do not understand the contexts in which OS was developed and thus reluctant to accept the OS. That is why we say at least one person from those who have developed OS should participate in curriculum development. Therefore, in order to fill the perception gap during curriculum design and development and compromise the trade-off between the contexts in which OS developed, it would be proper if one or two people who have participated in OS development would join the curriculum developers.

Similarly, one of the TVET college principals stated that:

It would be proper if both industry's representative and trainers are involved in the curriculum development activities. This reduces the criticism that arises from trainers that they do not accept the curriculum developed. Similarly, since the EOSs are being used for TVET consumption, it would be better if trainers are involved as external stakeholders in OS development.

The views presented above are not in line with the TVET curriculum development manual of the Federal TVET Authority (MoE, 2007: 25) in that the TVET providers should develop curricula. However, it would be a good idea for trainers and training providers to participate in the OS development programmes as this helps trainers understand and provide their experience on how and to what contexts OS is developed. Moreover, it facilitates seamless transfer and conversion of OS into curriculum. Regarding who should develop OS and curriculum, the Ethiopian National TVET working documents indicate that OSs should be developed by industry and curriculum should be developed by training providers. The issue is how far the industries own the EOS and utilise them in the world of work arena. Another issue is how far the training providers really understand and therefore accept the EOS developed.

5.8 Chapter summary

This chapter presented data derived from documents reviewed from the National TVET Strategy and working documents and information gleaned from TVET trainers, Federal and Regional TVET curriculum. It was noted that the data collection was conducted through the selected data gathering tools to extract the necessary data to address the issues of the study. The data gathered through document analysis and interviews were outlined consecutively in a way that the issues were presented in a coherent and precise manner. Hence, first the data gathered from documents review and then the data gathered through interviews are presented throughout the chapter. Generally, findings from the document analysis were presented first. The sections were outlined based on the themes that have similarities of the subject matter or issues. The themes were outlined after the data were gathered and edited, coded, classified and made ready for analysis.

Several issues raised in the chapter. The chapter discussed the National TVET Strategy and working documents and the comments and ideas that the respondents stated accordingly. The chapter started by presenting the Ethiopian TVET system the

approaches, concepts and perspectives of outcome-based system that aimed to create competent and qualified citizen who can perform specific jobs that are needed in the labour market. It also addressed that international benchmarking during curriculum design and development is vitally important in order to equate the programme to the standard. The chapter also presented that if the labour market demand is met,it meant that the training and societal training needs are met from outcome based TVET perspective. It was noted that the OS is input for TVET curriculum therefore occupational mapping plays a pivotal role and influences the quality of curriculum design and development in outcome based TVET system. It could also be understood from the discussion presented in the chapter that as Ethiopian TVET curriculum is the mirror reflection of its OS that it is conceived from, so are the training contents the reflection of competences and elements of the occupational standards. Therefore, the occupational mapping and levelling system designed deter the Ethiopian TVET programme from meeting the labour market demand of the country. Moreover, it emerged from documents and interview analysed that modularisation is vitally important in the outcome-based TVET system. It could also be noted that there is unfair course time allocation though it is controversial on what is to be done with theory and practice, what in-school training and in-company and cooperative training are, and though it is professed loudly, it was not being implemented as such. It was noted that the issue of curriculum content sequence, breadth and width are also controversial. It also presented that there was a great variation between curriculum designed and implementation, which is mainly attributed to the non-viability of curriculum design and lack of training reference materials. The chapter also revealed that the curricula have not been revised for more than a decade just because OSs are not revised, which led trainers to manipulate and customize the curriculum to their needs during training delivery. Finally, the chapter also discussed who have been involved in OS, curriculum and reference materials design and development activities as well as who should really do what so that a workable TVET curriculum can be produced.

CHAPTER SIX: FINDINGS AND DISCUSSION

In this chapter, the findings of the study are discussed. The discussions are presented based on the findings of the data presented and analysed in Chapter 5 along with the literature reviewed in Chapter 2 and 3 as well as other information related to the findings of the study. In this chapter data gathered through documents and interview along with the literature reviewed are discussed together.

Curriculum can be regarded as the backbone of educational systems. Whenever one talks about curriculum in one way or another, it is inevitable to talk about other educational issues, systems and programmes, such as the educational institutions, the teaching learning process, teachers, students, management, and training materials, among others (Schnellert, 1993: 14). To support this idea, Engelshoven (2014: 5) points out that curriculum is the central part of educational programme. UNESCO specifically mentioned that curriculum design and development has long been regarded as a core-component of TVET programme (UNEVOC, 1993: 3).

The findings of the study revealed that the design and development of TVET curriculum is not an easy task and therefore susceptible to discourse on the methods, processes and approaches to be followed. UNEVOC (1993: 5) urges that it should be known what developing countries need to know, who should take up the initiatives, as TVET curriculum is more subjected to political decisions therefore oftentimes rare to be changed or modified even if the need arises, once implemented without prior accord of politicians. According to Fretwell et al. (2001: 2), developing countries face a number of challenges, as compared to developed countries in designing national occupational and training standards, and related assessment systems. Zhao and Raune (2014: 78) also assured that curriculum design is a complex but systematic process. In reference to this reality, Finch and Crunkilton (1999: 29) note, “Unfortunately, fewer vocational curriculum designs have been produced in TVET than would be hoped in developing countries”. The findings of the study also revealed that

the issues of the TVET curriculum design and development processes and approaches are debatable.

It is stated in the National TVET Strategy (MoE, 2008: 7) that the reformed Ethiopian TVET system is an outcome-based system, meaning that it uses the needs of the labour market and occupational requirements from the world of work as the benchmark and standard for TVET delivery. From the findings of the study, it could also be noted that Ethiopia's preference of outcome-based TVET system is plausible. In connection with this, Finch and Crunkilton (1999: 3) point out that the vocational and technical curriculum focuses not only on the educational process but also on the tangible results of that process. Fretwell et al. (2001: 5) describe outcome-based vocational education and training as a means of making competent citizens to perform activities common to an occupation, within an acceptable range as occupational competence.

6.1 The objectives of the TVET programme of Ethiopia

The findings of the study revealed that the Ethiopian TVET system comprises a comprehensive, integrated, outcome-based and decentralised TVET system. The Ethiopian TVET system encompasses all sectors industrial, construction, business, home sciences, health, music and entertainment, culture and tourism, sport-sciences, inter alia (MoE, 2009). It also encompasses all levels – no more distinction is made between basic, junior and middle levels, formal, non-formal, informal training programmes in the decentralised system – meaning that 'decisions are devolved to lower levels to increase efficiency and responsiveness' (MoE, 2008: 2). This means there is no demarcation between formal, non-formal and informal learning. According to Shaorshadze & Krishnan(2013: 15), there is no special curriculum for formal and non-formal TVET programmes. However, as forms of education vary in their characteristics and features, it should not necessarily be one approach that would fit in all instances.

It is documented in the Ethiopian National TVET Strategy (MoE, 2008: 21) that, the goal of the Ethiopian TVET system was to create a competent and adaptable

workforce to be the backbone of economic and social development of the country. It is also documented in the TVET Curriculum Development Manual (MoE, 2012: 14) that the objective of TVET delivery was to qualify people according to the occupational requirements by facilitating a learning process geared toward attaining the set of competences defined in the respective EOS. It was also indicated in the National TVET Strategy that TVET programme provides the necessary "relevant and demand-driven education and training that corresponds to the needs of economic and social sectors for employment and self-employment" (MoE, 2008: 9). The EOS development manual (MoE, 2009: 3) on its part states that the major objective of TVET programme is to provide employers, employees, trainees, and job seekers with common understanding of what is required for a particular employment in the labour market in Ethiopia.

From these cumulative objectives of TVET programme, there are some issues that can be debated pertaining to their implementation. For instance, regarding the issues of employment and job creation, the following questions can be raised. 'Can a particular OS address and cater for all labour market demands required by the private or government sector, and competences needed for self-employment in one package?' Another issue that can lead to question from the cumulative objective is the issue of creating common understanding of the stakeholders. 'Can a particular OS or curriculum address the common interest of all stakeholders such as employers, employees, trainees, and job seekers with common understanding of what is required for a particular employment in the labour market in the country?'.

In connection to this argument, Kever (2003: 8) stated that learning is an active process, whereby students learn best by constructing new ideas and building new schemas based upon current and past knowledge. He further urged that educational models that utilize constructivist theory consider these influences and attempt to match education systems and curricula to each socio-culturally distinct group of students (Kever, 2003: 8). Therefore, from the overall findings of the study and discussion held, it could be deduced that the Ethiopian TVET System needs to be the one that enables

one to design the curriculum that could more or less fulfil and address the requirements of all trades, including blue and white collar work-related-jobs

6.2 Guiding Principles and philosophies of the National TVET System of Ethiopia

In pursuing the objectives stated in the National TVET Strategy of Ethiopia (MoE, 2008: 15), the following principles are put as guides and to define further development and implementation of the TVET system which is “Demand-orientation, quality and relevance, equal access and equal opportunities, pathways, flexibility, gender sensitivity, contributing to the fight against HIV/AIDS and contributing to environmental protection.”Besides, the following statement is reflected in the National TVET Strategy (MoE, 2008: 14):

> The TVET system will provide life-long learning opportunities and promote vertical and horizontal mobility and progression between different TVET occupations and different qualification levels, but also between TVET, general and higher education. TVET should always create the possibility of career progression and continuation of learning.

The statement above means that in order to realise this guiding principle of the TVET system to address and ensure life-long learning and link TVET with higher learning, there should be some requirements to be fulfilled. As was noted from the model curriculum reviewed (MoE, 2010) by the researcher that there are some topics that are frequently presented in the curriculum within a level and across levels. These contents within one level could have been integrated together to form one learning module and could be blended together as a single entity.

The following statement is also written in the National TVET Strategy of Ethiopia: “Curricula will have to consider specific requirements of the target groups and specific local labour market requirements” (MoE, 2008: 22). Furthermore, to show that the TVET system would address equal access and equal opportunities of learning, the following statement in the National TVET Strategy of Ethiopia (MoE, 2008: 14) aims “To respond to the changing occupational requirements and to accommodate the

different demand of the various target groups, the TVET system will allow and encourage flexibility and dynamic development of the TVET offers."

The two statements illustrate that the Ethiopian TVET system aims at addressing trainees' interest, which the progressivist philosophers advocate. However, it emerged from the findings of the study that as there is only one OS, and the curriculum is the direct derivative EOS, it can be said therefore that the TVET system does not address the specific requirements of each target group of the trainees. This leads to the conclusion that the Ethiopian TVET system does not follow the Progressivism Philosophy as reflected in the National TVET Strategy.

There is nothing clearly stated about which philosophies and principles of TVET curriculum design and development the Ethiopian TVET System has adopted. Furthermore, what is written in the Ethiopian National TVET Strategy and TVET working documents to be executed are not being practiced. However, as the overall objective of the National TVET Strategy is to create a competent, motivated, adaptable and innovative workforce in Ethiopia (MoE, 2008: 12), the TVET System focuses on present and future trends and issues of the national interest. Hence, it can be said that the Ethiopian TVET system sounds to follow the Progressivism and Reconstructivism philosophies.

Considering the relation of the philosophies to TVET programme in general and vocational curriculum design and development processes in particular, in most cases, all the four philosophies are relevant as they hold contents and contextual ideas that are fundamentally vital in vocational education in Ethiopia. For instance, perennialism helps to educate the rational person and to cultivate the mind, to focus on past and permanent studies; mastery of facts and timeless knowledge. Essentialism promotes the curriculum to include basics and classical subjects such as workplace communication skills and business mathematics. Progressivism helps knowledge and skills to lead to personal and social growth and development and to focus on interesting learning. It also involves application of human problems and affairs and promotes democratic and social living. Reconstructionism on the other hand promotes

education for change and social reform and the improvement and reconstruction of the society. Reconstructionism also promotes skills and subjects needed to identify and eradicate problems in the society and learning to be active and concerned with the contemporary and future society. It also gives emphasis on science and research methods and ensures equality of education.

Today, as the invention and innovation of technologies in the world is rapidly changing, it seems reconstructionism aptly fits the present technical and vocational education systems. This is because reconstructionism promotes societal change for better life. However, reconstructionism becomes a very influential and powerful philosophy, especially when its goals of social reform are combined with other philosophies such as perennialism, progressivism and existentialism. But this does not mean, it should be in equal proportion. The findings of the study shows that in order to make the Ethiopian TVET more competence-based than to be knowledge-based, it is preferable to focus much on progressivism and reconstructionism philosophies.

6.3 International benchmarking

As indicated in the different TVET working documents, the Ethiopian TVET curricula are developed by adopting other countries' standards (like the Philippines and Australia) and then adapting them to the country's real situation. It is also documented that the experiences were taken from those countries that use the outcome-based TVET system. However, it was noted from the findings that it is not the curriculum that is adopted; instead it is only the competencies of OSs that were espoused.

From the document analysed, it is clear that the EOS is the prime input and source of TVET curriculum and the TVET curricula are the direct reproduction of their respective OSs. From the TVET Curriculum Development Manuals and from the model curriculum developed, EOS and curricula developed for 'building construction works' have similar structural mapping, order and sequence, levelling and similar contents. Hence, every curriculum process, the rewards and limitations of the Ethiopian TVET curriculum developed for building construction works are attributed to their respective EOS developed. In this regard, it emerged from the findings of the study that different

competencies were taken from different countries. However, there was no evidence regarding how other countries convert the competencies to training materials or curriculum.

The findings of the study indicate that there is nothing wrong with taking other countries' experiences. Concerning this issue, Edukans Foundation (2009: 3) argues for the necessity of the taking experiences of other countries in that 'it is envisaged that taking existing experiences of other countries could promote the country to the technological and economic development level that other countries have reached as much as possible within the shortest period'. However, it was noted from the document analysed that, in the Ethiopian case, this was done just because some competencies can be accessed via the expatriates working in the country or because they can be easily accessed from internet. Competencies are developed for different purposes. Competencies can be developed for occupational standards and assessment tools development as well (Fretwell et al., 2001: 18). It should not be taken without understanding for what purpose the conceiver-countries use the competences and occupational standards they have developed, and also without analysing if the competencies taken really suit the espouser country's real labour market demands. In fact, it might be not easy as such to develop own competencies from scratch for developing countries. It is stated in UNEVOC (1993: 8) that, 'Due to lack of resources, experience and traditions, there have been certain tendencies in some developing countries simply copying existing curriculum materials from industrialised nations without proper adaptation to the local situation and needs, which has often proved to be inappropriate and expensive'. In fact, in the case of Ethiopia, it is not curricula but the competences that were adopted.

It is stated in the National TVET strategy that the Ethiopian government had decided to reform the Ethiopian TVET sector by designing and implementing an Ethiopian TVET system based on international best practices (MoE, 2008: 12). There are two main sub-processes that are worth noting with regard to classification of occupations and specifying OS as indicated in MoE (2007: 15) which are

- International benchmarking;
- Adopt, adapt and verify.

It was noted from these OS development processes that what had been done during OS design were that firstly the international benchmarking is undertaken and subsequently the OS is developed. One of the philosophies and method of developing TVET curriculum is the 'DACUM' approach. Based on DACUM Handbook by Norton (1997: 28), the processes of developing curriculum using DACUM approach can be summarised as follows:

> First, the OS is developed by the industry (people from the world of the work) then a sort of congruence analysis checks are made comparing the OS developed with international occupational profiles. Then, the standards are verified with relevant organizations such as chambers and professional associations. It is also checked and referenced against the OS developed to the ISCO in order to communicate and compare the contents of an OS internationally to ensure that the qualifications are transparent. This might promote in the long run international and national mobility of the workforce.

The above paragraph illustrates the DACUM process of OS development. It points out that unlike in EOS development process whereby benchmarking is done before OS is developed, in DACUM approach, international benchmarking can be undertaken after OS is developed.

6.4 Labour market demand and training needs

The findings of the study revealed that labour market demand is the primacy of the TVET curriculum. According to Werner& et al. (2012: 14), 'Outcome-based TVET is the vocational education system in which training programmes are designed based on labour market demands'. Yusoof (2013: 18) adds that TVET is important to produce skilled workforce that meets labour market demands. It is also stated in the National TVET Strategy (MoE, 2008: 7) that the reformed Ethiopian TVET System is an outcome-based system, meaning that it uses the needs of the labour market and occupational requirements from the world of work as the benchmark and standard for

TVET delivery. It is stated in the National TVET Strategy (MoE, 2008: 21) that “The National Occupational Standards define the outcome of all training and learning expected by the labour market”. Labour market demand is the specific products or services the end users want to have and the competence required from learners to fulfil these end users’ needs. If labour market demand is so much important, due attention should be given in identifying real labour market demand. It is questionable as to how labour market demand is identified in the Ethiopian TVET System as it is too comprehensive and encompasses all occupations, and all forms of training and education. It is also debatable on how the labour market analysed caters for the far-reaching objectives of the TVET programme that aspire to meet the demands of all stakeholders, employees, employers, trainees, and training providers could be identified.

Another issue worth discussing in relation to labour market demand is the issue of training needs. It is depicted in the Ethiopian National TVET Strategy (MoE, 2008: 24) that each TVET provider may and should develop its own curricula based on the specific needs of its target groups and in compliance with the respective occupational standard. Training needs assessment is the first and foremost activity to be undertaken before designing TVET curriculum. Training needs do not necessarily mean labour market demand nor occupational standard. According to Finch and Crunkilton (1999: 124), training needs assessment result is foundation for curriculum design. It was noted from the findings of the study that most of the respondents indicated that training need is realized if and only if it could meet trainees’ and societal needs. Finch and Crunkilton (1999: 124) note that greater emphasis is placed upon the development of curricula that are relevant in terms of student and community needs and substantive outcomes.

Labour market demand and training needs are two different things. Labour market demand is all about OS that industry needs whereas training need is all about learning curriculum. Regarding what TVET needs to be included in the TVET curriculum, UNEVOC (1999: 17) suggests that unlike academic one in which the goals are not necessarily to address what is to be performed at the end of the lesson, in TVET, the

competencies that are required from the trainees need to be anticipated in advance. What makes TVET curriculum different from the academic one is that TVET curriculum should be individual, society and employer oriented (Tubsree & Bunsong, 2013: 35). In fact, as stated by Mos (2003: 13), the most important constructivist learning objective is to solve problems.

From the findings of the study, it is noted that it is difficult to declare that the Ethiopian TVET curriculum addresses the trainee's needs or the labour market demand of the country. The arguments were justified by respondents that graduates of some occupations could neither get job nor continue their further learning just because of competences in the occupation were scanty, shallow in breadth and even narrow in width so that they cannot stand alone as a single occupation that enable one to be employed

As it emerged from the responses of respondents, there is great variation in labour market demand within the building construction work fields. In connection to this argument, Kyarizi (2016: 5) explains that the constructivist epistemologies especially the radical and social constructivism reject the claims of one form of knowledge being superior to another because according to these perspectives all knowledge is but human construction in social contexts. From the findings which emerged from the study, it was noted that there are three different scenarios. The first scenario is that there are training fields that have demand by the trainees but have less demand by industry. The second scenario is that there are training fields that have demand from both the industry and trainees. There are also training fields that have no demand by both the industry and trainees. These limitations can primarily be attributed to the occupational mapping and levelling system being practiced. It could be investigated that some occupations of the building construction works that have got demand could have gotten it not because they are complete enough, but just because they comprise at least one or more competences in them that are much demanded in the labour market.

In connection with labour market demand and training needs, some of the trainers revealed that there was implicit political game in the name of labour market demand. In this regard, McKernan (2008: 5) points out that 'there are political and cultural reasons for the way curriculum is mandated and implemented at present.' UNEVOC (1993: 5) notices that it should be known what developing countries need to know about who should take up the initiatives, as TVET curriculum is more subjected to political decisions that oftentimes are rare to be changed or modified even if the need arises, once implemented without prior accord of politicians. Ornstein and Hunkins (2014: 154) further remarks that if one neglects the philosophical, social, and political questions, he/she designs a curriculum with limited or confused rationale. In addition, Oliva and Gordon (2013: 161) assert that the curriculum planner must additionally look at the needs of society such as political, social, economic and environmental which have implications for the curriculum from the standpoint of their types. The issue to be discussed here is to what level it is possible to develop a curriculum that fulfils all these requirements. In the case of TVET curriculum design, trainees and societal needs can be fulfilled only if labour market demand is realised. The labour market shows the competencies the employers demand from the employees they recruit. This means the employers need the skills that are required to perform the tasks according to the standard laid down by the employers in specific work or activities.

Majority of the training providers supported the idea that the TVET programme should fulfil the industry's labour market needs of the country as a whole and of the regions in which work is done in particular. However, they were of the view that the TVET curricula developed do not cater for the trainers and societal needs. On the contrary, most of the curriculum development officials argued that the curriculum developed is needs-based. Some of the trainers argued that since most occupations are so fragmented, it was difficult to declare that the Ethiopian TVET curriculum addressed the trainees' needs nor the labour market demand.

It was noted from the findings of the study on the whole that identifying the labour market demand and developing a curriculum that enables trainees to meet that labour market demand is a daunting task. The issue of labour market demand and training

needs are controversial and therefore leads to bias and manipulation. Zhao and Raune (2014: 129) assert that vocational education and training systems everywhere are facing challenges to prepare a sufficient number of people with the right skills to meet labour market demands.

6.5 EOS mapping and qualification levelling

There is correlation between EOS mapping and labour market demand in the Ethiopian TVET system in that the needs of the labour market and occupational requirements from the world of work are used as the benchmark/standard for the TVET-Delivery (MoE, 2008: 15). Similarly, there is correlation between qualification levelling and labour market demand in that the qualification levelling of OS are determined based on the width and breadth of the labour market demand of the country. When the issue of occupational mapping is raised, it is inevitable to raise the issue of occupational standards and qualification levelling as they are integral. According to the findings from the study, the issue of qualification levelling is so controversial that no one is clear about if really the Ethiopian TVET curriculum needs to be up to level V or less or more.

The EOS mapping and qualification levelling system under discussion focuses on building construction work fields. Therefore, most of the discussion and analysis were held based on Figure 5.2 (the occupational structural mapping of building construction work field). As could be noted from the EOS and TVET curriculum developed by MoE (2010), the EOS and the curriculum for building construction works have similar structural mapping. So, in order to discuss TVET curriculum design developed for building construction works, it is vitally important to discuss the issues of occupational mapping of it.

In connection with the issue of occupational mapping, there were no uniform responses from participants as to which occupations should stand alone and which occupations need to be clustered to one another. Overall, there seems sentience, that is, a tendency of inclination towards their fields of specialisation. That means, the respondents have bias towards the courses and training fields they know more.

However, majority of training providers were not comfortable with existing occupational mapping and levelling systems. Some trainers did not agree with the idea that trainers do not have a say in deciding what the occupational mapping looks like.

Concerning the Ethiopia TVET qualification level, it emerged from the document analysis that the decision for which units of competence in which of the five qualification levels need to be incorporated are based on the ETQF descriptors. The National TVET Qualification Framework (NTQF) describes the five levels of Ethiopian TVET system. Most of the trainers were also not comfortable with the further division of the building construction work occupations in to six or seven occupations at Level - I and II as illustrated in Figure 5.1 of analysis part. According to Edukans Foundation (2009: 3), levelling into five levels has created a feeling of discomfort for both developers and implementers as it is thought as wastage of time and other resources.

6.6 Module development and course content selection

The modular approach allows for the meeting of individual needs related to the development of competencies. It is indicated in the UNEVOC (1993: 6), that in the competency-based individualised curriculum development, the subject matter should be divided into modules when TVET curriculum is designed and developed.

It emerged from document review of OS and curriculum developed for ‘building construction works that:

- Curriculum components/contents are the direct copy of the competencies of the OS and one unit of competence is transformed to one training module.
- Nearly one element is directly converted to one major content, and one performance criteria is converted two one or two contents

Most of the training providers were not comfortable with the direct conversion of competence to learning modules. So, if that (the direct conversion of competence to learning modules) is the case, the trainers were raising questions such as: What makes the TVET curriculum modularised? ‘What is the importance of curriculum and why do trainers not use the OS instead of curriculum?’

It was noted that both the strategy and working documents and the responses from the respondents concurred with one another on the necessity of the modularisation of the Ethiopian TVET system. The modular approach has been seen as a promising curriculum development especially when flexible training provision is needed. However, some of the trainers and college principals were not comfortable on the way the TVET curriculum is modularised. They contended that the modules for the building construction works are not well organised and underpin learning experiences by building on competences previously acquired. To this end, Chatterjea (2007: 2) expressed that constructivism says that people construct their own understanding and knowledge of the world through experiencing things and reflecting on those experiences, and thus when we encounter something new. Therefore, we have to reconcile it with our previous ideas and experience, maybe changing what we believe, or maybe discarding the new information as irrelevant. According to Moon (2012: 7), a modular approach is the flexible framework that allows many different pedagogical solutions for implementation.

Regarding course content selection, the issue of the validity and reliability of the content selection remains debatable as to which courses ought to be included in and be excluded out from the curricula (Shaorshadze & Krishnan, 2013: 20). As suggested by UNEVOC (1993: 5), the effectiveness of a vocational education system, dependent on a well-developed curriculum, must be measured by the extent to which it is able to attract the young generation into the occupation of the future and skills which employers need.

Citing UNESCO (1982), Tubsree and Bunsong (2013: 34) state that:

> In a vocational education program, it should be understood that there is also a training component and, in a well-conceived vocational training program, the necessary educational component should also be included. It should be made clear that there is no dichotomy between education and training – both have a role to play in society and are interlinked (UNESCO, 1982).

That means TVET curriculum should be developed in the way that the contents enable it to motivate the interest of learners towards the field. The curriculum contents should also reflect and fulfil the trainees' training needs as well as the employees' expectation from graduate trainees.

Furthermore, in vocational curriculum content selection, the contents that enhance the learners' holistic competence and mental development should enable them to be competent enough in the field to be qualified. Of course, in designing educational curricula, one must ensure that students are capable of comprehending the information. While discussing the importance of portable and transferable skills in content development, Tubsree and Bunsong (2013: 39) stated the following:

> Successful workforce development projects should allow for geographic mobility, as jobs or work opportunities may not be physically close to where learners have acquired skills and knowledge. Additionally, because work changes over time and workers change jobs and occupations over their lifetimes, transferable skills and soft-skills, such as learning how to learn, plan and communicate, are in great demand.

In light of this, Finch and Crunkilton (1999: 12) explicate that curricular focus in vocational and technical education is not limited to the development of knowledge about a particular area. According to them, the vocational and technical curriculum deals directly with helping the student to develop a broad range of knowledge, skills, attitudes, and values, each of which ultimately contributes in some manner to the graduate's employability. However, it is not only employability when we discuss about TVET. The issue of creating own jobs might be dealt with. Indeed, this holds true if self-employment is expected from the students.

In fact, one cannot be a master of all trades in general and from outcome-based TVET system perspectives in particular. Unlike in developed countries, where a single competence, such as a 'carrying out chiselling stone' task probably enables one to be self-employed, this might not necessarily work in the Ethiopian context. In the case of outcome-based system, there might be no problem with the division of competences

as it represents specific task that one person can perform. But, when it is transformed in curriculum, it should not necessarily go one-to-one, that is, one competence necessarily does not be transformed to one learning module.

6.7 Curriculum content design dimensions and sequence

It is indicated in MoE (2012: 7), the sequencing of modules should reinforce learning experiences by building on competences previously acquired. It is further stated in MoE (2012: 7) that as learners' progress through the programme, there may be points at which they could leave with recognised outcomes leading to possible employment opportunities or re-enter the programme at a later stage to continue their training. In the same manner, Ornstein and Hunkins (2014: 158) assert that curriculum design should address relationships among curriculum's components. It should achieve organisational dimensions such as horizontal and vertical organisations, integration, articulation, continuity, scope, balance, and sequence. Hence, based on the findings, the issues of curriculum integration, articulation, continuity, scope, balance and sequence are discussed next.

6.7.1 Content integration

Integration refers to linking all types of knowledge and experiences contained within the curriculum plan (Ornstein & Hunkins, 2014: 160). It emerged from the documents analysed, and corroborated by the respondents that the building construction works curriculum lacks integration. This was justified in that as the findings of the study depicted, there are some topics that are frequently presented in the curriculum within a level and across levels. These contents within one level could have been integrated together to form one learning module and could be blended together as a single entity.

6.7.2 Content articulation

According to UNEVOC (1993: 5), the success of training system is to deliver not only technical training (technical skills) but also to help students learn how to cope with new challenges (coping skills) and prepare them for lifelong learning to provide people with the basic set of skills it takes to transfer from one job or area of work to another.

According to Ornstein and Hunkins (2014: 160), articulation refers to the vertical and horizontal interrelatedness of various aspects of curriculum, that is, to the ways in which curriculum components occurring later in a programme's sequence relate to those occurring earlier. As there are no bridging courses in the building construction works that most TVET institutes are using, it can be deduced that there is no clear and smooth articulation between courses and contents within and across levels.

6.7.3 Content continuity

According to Oliva and Gordon (2013: 67), continuity is the planned repetition of content at successive levels, each time at an increased level of complexity. According to Tyler (1949), continuity refers to the vertical reiteration of major curriculum elements. Ornstein and Hunkins (2014: 160) maintain that according to constructivist approach to learning, one can become a master of something if he/she devotes sufficient time and effort. As could be noted from the building construction works TVET curriculum most TVET institutes are using in Ethiopia, it can be said it is good at addressing continuity except the contents are exaggeratedly recurring within and across different levels.

6.7.4 Content scope

Scope refers to breadth or latitude of the curriculum and it shows what must be provided to learners at levels of education systems (Ornstein & Hunkins, 2014: 158). The findings reveal that the TVET curriculum (building construction works) does not address the scope issues. From the TVET curriculum of building construction works that this study is particularly confined to the breadth and depth of contents were not considered when the curriculum was designed. The justification for this is that there are several contents and sub-contents that are recurring within and across different levels.

6.7.5 Content balance

Keeping the curriculum balanced requires continuous fine-tuning as well as balance in our philosophy and psychology of learning (Ornstein & Hunkins, 2014: 161). Balance

refers to the relative emphasis given to different curriculum components. When designing a curriculum, educators attempt to give appropriate weight to each aspect of the design. In this case, in the world of work, there are some competences or tasks which are more difficult, more frequent and more important. For example, as conspicuously could be noted from the OS developed and the model curriculum developed for building construction works, “Prepare for work’ and “Clean up work area’ are tasks that are performed frequently. These unit standards are shown up frequently in the model TVET curriculum. Besides, the number of units of competence (UC) in an occupation and the time allotted for each curriculum were derived from an occupation. However, as this does not show content balance in the TVET case in Ethiopia, training should not be provided on these contents repeatedly. Training could have been offered once in a way that it addresses all ranges of works once for all.

6.7.6 Content sequence

Regarding content sequence, the MoE (2007: 18) notes that deciding on an intelligent sequencing is the responsibility of the TVET provider. It is also indicated in TVET Curriculum Development Manual (MoE, 2007: 19) that deciding on an intelligent sequencing is the responsibility of the TVET provider and typical considerations such as progressing from simple to complex, from known to unknown, from near to far, from concrete to abstract, etc. need to be emphasised. The trainers explained that it is the curriculum developers that decide the sequence of learning modules. However, as the trainers expressed, the college trainers can also reshuffle them in the way they think appropriate. It was noted that the contents and sub-contents are not in order of succession. In other words, the accumulated experiences of learners were not considered when developing training contents. The reason for organising contents in sequence is to make learning more strategic and organized (Ornstein &Hunkins, 2014: 159). In connection to this discourse, Kever (2003: 9) argues that the main theme inherent in constructivism is that people learn by constructing new ideas and concepts by interpreting them through comparison with previous knowledge.

The main theme inherent in constructivism is that people learn by constructing new ideas and concepts by interpreting them through comparison with previous knowledge

(Mos, 2003: 8). That means what people already know matters to develop new learning contents. The curriculum should be developed from where the learner knows. In the case of the Ethiopian TVET curriculum, it is grade 10th completers that join TVET. Therefore, the background of these TVET entrants should be considered in order to design and develop the curriculum. In other words, there should be ladder linking from what is known to what is going to be known so that people can attribute meaning to new ideas, and this process represents learning. Constructivism also allows teachers to use the knowledge they already have (Jonassen, 2003: 12). As the curriculum of the Ethiopian TVET is the point-to-point direct copy of the unit of competence and there is no room for trainers to include any knowledge. Hence, the units of competences need to be levelled and sequenced based on the complexity of the tasks, and therefore, the TVET curriculum that needs to be developed needs to address all the issues of curriculum content design dimensions and sequence.

6.8 Training time allotment

According to Moon (2012: 18), the appropriate length of time will depend upon several factors such as official policies or regulations that specify the length of time for training, number of hours required to teach the desired knowledge and skills in the curriculum and availability of the trainees to attend the number and length of sessions; resources of the agency doing the training, i.e., budget, staff time, etc. The analysis of the model curriculum document found that there are very significant variations in time allotment within and across the levels. For instance, the time allotted for “installation construction work”, “structural construction work” and “finishing construction work” are 570, 820 and 615 notional hours respectively. The time allotted range across the levels is so significantly large that, if we compare the time allotted for each occupation at level - II, for instance, the time allotted for ‘on-site building construction management-Level - IV’ to be 2288 hours while the time allotted for ‘sanitary installation work-level - II’ to be only 355 hours. The time reduction reveals that less consideration is given to the scope of the curriculum.

According to Perie (2003: 18), the amount of time assigned to the formal subjects varies greatly in training institutions. Though the time allotted could not be so sharp but nominal, according to the trainers' observation, in some learning outcomes, excess time was allotted, while insufficient time was allotted for training for some learning outcomes. They stated the reason for this situation that time for generic courses were reduced by core subject trainers as the trainers themselves have insufficient knowledge about the subject matter, therefore knowingly reduce the time allotment for generic courses on the whole. Perie (2003: 18) asserts that spending large proportion of school time teaching core curriculum may be important not only in terms of school quality, but also in terms of teacher satisfaction.

What makes the TVET curriculum peculiar from the general academic courses is that the main target of academic courses are not to enable learners perform specific tasks. In TVET, unlike in pure academic programme, the learners are expected to perform tasks which the industry demands or should be competent enough to create work (William, 2015: 20). If they are to create work, courses such as entrepreneurship and other courses that contribute to their fulfilment to be competent need to be addressed. Not only should the courses be in the class, there should be practice sessions in the class and in industries as well. The core curriculum at the earliest level is important, as exposure to subjects at first level is related to the courses that students take at the next levels (Perie, 2003: 18).

The present status of time allotment in any given training institution represents a rough approximation to an estimate of the relative importance of the subjects and possibly the relative amount of time it takes to master them (William, 2015: 17). As noted from responses of the interviews, there were no uniform understanding about theory and practice and/or in-institute and in-company training. From the respondents' opinions, it emerged that there is doubt about the "30/70" implementation and that there was discrepancy between what are planned and what take place. As emerged from the curriculum adopted / developed by some regions and some colleges they have divided the contents into theory and practice while others into in-school/institute and cooperative/in-company.

The amount of time spent on theory and practice depends on the total amount of time spent in the training institute (Perie, 2003 19). Perie (2003: 19) maintains that the percentage of the training institute time spent on instruction might differ from various community, school, classroom, and student characteristics. As noted from the respondents' responses, there is no uniform understanding about theory and practice and/or in-institute and in-company training among the training providers. As emerged from their adopted curriculum by some regions and some colleges, they have divided the learning content into theory and practice while others into in-school/institute and cooperative/in-company. Regarding its implementation, most of the respondents concluded that the '30/70' time allotment was not being practiced as indicated in the curriculum. From the trainers' expression, it can be deduced that the trainees' times that could have been utilised wisely are unnecessarily wasted. This may lead students stay at a particular grade level for a long time with minimum competence acquisition. Practical training depending on facilities available and the quantity and quality of time assigned to the training may determine how well one will be trained to acquire the practical skills set out in a curricular. It is therefore imperative for those who frame the structure of TVET curriculum to allot more practical training time to competency based task than that of theory. Theory is important for any successful practical training; it should however not overshadow the practical training.

6.9 Curriculum implementation and revision

Fretwell et al. (2001: 2) aver that when curriculum is implemented, a country should decide to start with pilot activities at the local level in high priority occupations and sectors, and then move to a national approach. According to Moon (2012: 9), pilot testing activity consists of trying out materials in school environment and with students who are similar to those who will eventually use the materials. It is indicated in the UNEVOC (1993: 6) that curriculum developed for vocational training should not only meet the goals and objectives of training but also be implemented effectively.

The curriculum should undergo periodic renewal, and it is necessary to set regular intervals for its revision. The curriculum renewal could be performed through evaluation and improvement (McKernan, 2008: 48).This means the issue of evaluation

and revision of the curricula needs to be considered and the curricula need to be implemented and renewed regularly. It should be ascertained in advance if the curriculum designed would really be viable to be implemented. Finch and Crunkilton (1999: 127) also point out that some TVET curricula are launched and implemented without clear baseline design and seen failing after several efforts have been done to repair. Regarding the validation of the curriculum, some TVET curriculum development officials confirmed that there was validation workshop for OS development but there was no validation workshop for curriculum. As Bhutan (2016: 34) states, the purpose of curriculum validation is to provide expert advice in curriculum design and quality to validate the curriculum toward maintaining the quality, to assist in prioritising the courses for curriculum development and to provide necessary feedback and suggestion to training providers for further improvement if curriculum does not fulfil the requirement.

The evaluation of the curriculum should be distinguished by utility, feasibility, propriety and accuracy (Ellis, 2013: 48). According to Ellis (2013: 48), the need for revision in curriculum is to restructure the curriculum according to the needs, interests or abilities of the learner and to eliminate unnecessary units, teaching methods and contents.

While indicating the importance of curriculum improvement, Tubsree and Bunsong (2013: 39) note that a commitment to continuous improvement encourages TVET programmes to measure and evaluate students and programmes throughout the process to ensure the quality of training and links to the labour market. Regarding the issues of revision, the training providers revealed that there was no predetermined plan for revision and that revision took place when demand arose. It was noted that it has been about a decade since the EOS and the model curriculum that were being used had been developed without revision. According to William (2015: 19), it is the usual practice in most of the developing countries to up-date the curriculum every five to ten years. According to the deans/principals of some of the TVET institutes, because a major review of the primary curriculum did not happen in the last decade, TVET institutes were having problems following the model curriculum and providing training by themselves. Sedere (2015: 20) maintains that curriculum revision is

important in order to introduce latest and update methods of teaching and content, new knowledge and practice and to add or reduce the number of teaching hours of instruction. Stark and Lattuca (2001: 8) state that the revision of the curriculum must be seen as an academic plan which includes both a macro and a micro approach to curriculum development and revision. The first step past recognising the need for change is to assess what currently exists in the curriculum and how it does or does not meet the needs of the ‘customers': the students, their parents, the employer, and the community and nation at large (Orkwis, etal., 1997). The success of curriculum revision, however, can only be realised when educators and administrators are willing and committed to assessing and adapting their education programmes to model the standards.

It emerged from the findings that there was no formal way of giving feedback to the federal TVET authorities on curriculum revision. This implies that curriculum revision took place only if the OS required revision and that the request for OS revision must first arise from industry. But, in the Ethiopian TVET cases, in principle, it is the industry that should request for OS revision when it is noticed that there is something wrong with OS while developing assessment tools and conducting assessment.

6.10 Curriculum materials development

Curriculum materials are recourses that, if used properly can assist an instructor in bringing about an intended desirable behavioural change in individual students (Sedere,2015: 19). As noted from the training providers, the non-existence of curriculum materials in some of the TVET institutes is one of the major problems in training delivery. Fretwell et al. (2001: 2) propose a remedy for these challenges for developing countries to select alternatives appropriate for local conditions which reflect the availability of resources to sustain their systems. However, the issue of the TVET curriculum as to whether it should be developed based on the available resources or to be developed based on the training standard remains debatable. As stated by William (2015: 24), the factors that must be considered when developing curriculum materials include the time available, the financial resources available and the audience for which the materials are intended.

The training providers strongly complained that the scarcity of training reference is so severe in most fields/occupations. Hence, majority of trainers were using whatever they obtain from the Internet. Indeed, some trainers use their previous notes and references they had been using during their degree study. The trainers suggested that reference materials should be developed centrally /federally. To mitigate the problem, model training materials have been developed and disseminated (MoE, 2007: 10). It emerged from the findings of the study that TVET curriculum is no more decentralised although each training institution is accountable for developing its training materials based on the centralized occupational standards.

According to Yusoof (2013: 18), vocational educators who might be involved in materials development could be those instructors who are in the vocational specialty areas for which the material was originally developed. Some of the training providers suggested that reference materials need to be developed at institute level if and only if training providers are in advance empowered to do so. They further suggested that, otherwise, reference materials framework should be prepared at central /federal level and the training providers should adapt materials to their real situations. They suggested the federal TVET authorities can develop reference materials framework in general, and let the training providers' team at the institutes customise the reference materials developed towards their specific situation.

6.11 Stakeholders' involvement in curriculum design and development

In the Ethiopian TVET system, when curriculum development is discussed, it is inevitable to discuss about issues related to OS development process. This was because the Ethiopian TVET curricula are the merely reflection of OS. Any strength and limitations that are exhibited in curriculum design and development are attributed to the OS design and development.

As documented in the National TVET Strategy, the main responsibility of developing adequate curricula is given to the individual TVET providers while the Regional and Federal TVET authorities have the responsibility to offer facilitation and capacity-building services and therefore can be approached for support. As noted from findings of the study, it emerged that the mandate of developing curricula was not given to the

Federal TVET Authority. Instead, the mandate was given to training providers. Accordingly, the model curriculum was developed by a group of experts from different trainers under the auspices of the Federal TVET authorities based on the EOS. However, the findings of the study show that the TVET providers could not properly discharge the responsibility of developing curricula given to them. Instead, most of the training providers preferred to stick to using the model curriculum developed by the Federal TVET Authority. Some regional curriculum development officials argued that they have developed curriculum by themselves at regional level for those OSs which the model curriculum had not been developed. However, as could be noted from the document analysed during data gathering, most of the TVET colleges were using the model curriculum developed by Federal TVET authorities for the fields of building construction works. The major change that was noticed from the curriculum they were using is that the customisation of time allotment to their situation. Consequently, there is controversy surrounding the discharging of responsibility by the Federal TVET authorities and training providers. Either the Federal TVET Authority could not capacitate and empower the training providers for them to be able to develop curriculum by themselves, or the model curriculum developed at the federal level suits the training providers. However, if the curriculum is a simple replication of OS and the OS is developed only at federal level, it is meaningless for training providers to develop curriculum for themselves. As could be noted from the findings, the critical issue for training providers is not who developed OS for training providers. What matters to them is how far the OS already developed is really suitable to develop curriculum from it.

There is a debate on where the TVET curriculum needs to be developed among the respondents. Some respondents suggested that the curriculum needs to be developed at the regional level. Few of the respondents however remarked that the curriculum need to be developed at college level and still others contended that it was preferable if the curriculum was developed at federal level. Some of the respondents argued that TVET curricula should be developed at federal level. But most of them indicated that the initiatives for curriculum development should be taken from regions or even TVET

institutes. A strategic issue which needs to be considered is whether the course design, delivery and management is centralised or decentralised. This is often out of the hands of individuals involved in course development but has impact on all aspects of curriculum development. Regarding who should participate in TVET curriculum development, most of the respondents argued that if the curriculum is the direct derivative of OS, and since OS is undertaken by industry, a person who participates in OS development should also participate in curriculum development as well. However, the respondents did not agree on the direct derivation of OS to curriculum.

Regarding who should develop EOS, the respondents unanimously agreed that it is the industry that should. Industry means in a sense, includes people from the world of work, trade associations, private and government employers, organisations working on social and labour affairs (Engelshoven, 2014: 15). Regarding who should participate in occupational and competency standards, Fretwell et al. (2001: 2) stated that:

> Stakeholders, including employers, professional associations, labour and education and training institution representatives need to be involved in occupation/competence standards development process using job/task analysis method.

Regarding whether or not the trainers should participate in EOS development activities, some of the training pointed out that since the EOS is being used for TVET delivery only, why are the trainers not allowed also participate? This implicates that the perception of the training providers is that EOS is developed for TVET delivery only.

There were no similar responses from respondents regarding who should develop TVET curriculum and where TVET curriculum should be developed. However, majority of respondents agreed on that the TVET curriculum should be developed at federal level with room to adapt it at regional and training institute level. More importantly, no one wanted the curriculum to be developed from the scratch at training institute level.

Regarding who should participate in curriculum development, it was noted from the responses of the respondents that it is the training providers that participate. According to Marsh (2004:8), curriculum workers are many and include school-based personnel

such as teachers, principals, parents, and university-based specialists, industry and community groups, and government agencies and politicians. In connection with who should participate in curriculum design and development, it is mentioned in the curriculum manual (MoE, 2007: 24) that stakeholders should participate in curriculum design and development. This implies that diversified organisational bodies and stakeholders should participate in the TVET curriculum development activities.

The diverse views and opinions on who really should develop TVET curriculum is not without reasons. It indicates whoever developed the TVET curriculum anywhere, majority of the respondents were not comfortable with the TVET curriculum designed and developed. This reveals that there is incompleteness in the process of TVET curriculum development. It also discloses that when the curriculum was developed at federal level, all concerned bodies especially trainers did not fully participate and also did not discuss fully on the methodologies to be followed in the process of TVET curriculum design and development.

6.12 Chapter summary

In this chapter, the findings of the study which emerged from information gathered through document reviews and interviews were discussed. In addition, the findings of the study are discussed. The discussions were presented based on the findings of the data presented and analysed in Chapter 5along with the literature reviewed in Chapter 2and three as well as other information related to the findings of the study. In this chapter, information gathered through documents and interview along with the literature reviewed were discussed together. Information presented on issues such as the Ethiopian TVET curriculum design approaches and guiding principles, occupational mapping and labour market demand, module development and content selection, organisation of curriculum component were discussed. Furthermore, issues regarding curriculum implementation, training delivery and revision and evaluation were discussed. Finally, information presented on issues vis-a-vis to stakeholders' involvement in curriculum design and development, the roles and responsibilities of federal and regional TVET authorities and TVET institutions were discussed.

CHAPTER SEVEN: SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

7.1 Summary

Ethiopia has implemented two major outcome-based TVET curriculum design and development approaches since 2007. These were the '10+1+2+3 years' approach and the levelling curriculum design approach. Of these two outcome-based curriculum design approaches, the '10+1+2+3 years' approach had existed from 2002 to 2010. The second outcome-based TVET approach named 'Levelling' approach, which this study mainly focused on, even though has passed through different reforms, lasted from 2007 till present. This approach has passed through various processes. This approach could not settle and concretised until 2010, as there was discord on which levelling system and approach to follow until finally decisions were taken in 2010 on the structural mapping approach of curriculum development was accepted and the maximum curriculum level was decided to be pegged at Level V. During all these periods, the '10+1+2+3' system continued to be implemented, specifically in private TVET institutes (Shaorshadze & Krishnan, 2013: 16).

The findings of the study indicate that Ethiopia has developed multiples of working and policy documents that have guided the system since 2007. Among these documents are two national TVET strategies, two curriculum development guides/manuals, two occupational standard development manuals and two TTLM development manuals that are directly used as guiding manuals to design and develop TVET curriculum. In line with this issue, though strategies and all other working documents are revised at times, the OS and TVET curriculum design and development practices persevere in the same way as TVET institutes are still using the OSs and the model curricula that were developed ten years ago.

The study primarily focused on the practices of curriculum design and development process of 'building construction fields. Building construction works fields were selected because they are the most pervasive occupations and the government therefore places emphasis to them. Besides, it is by no means otherwise possible to

cater for the all existing occupational fields in the sector. Therefore, most of the discussions of the findings presented in this chapter are discussed under the building construction work fields.

The general objective of the study was to assess the existing practices and major factors affecting the designing of TVET curriculum and explore issues and considerations to be taken into account when designing TVET curricula in Ethiopia. Accordingly, the major research question of the study was: “What are the current practices of TVET curriculum design in Ethiopia?”

The sub questions of the study were:

- What factors have and continue to determine TVET curriculum design and development in Ethiopia?
- What curriculum design and development theories and philosophies underpin the design of TVET curricula in Ethiopia?
- What major issues and considerations need to be taken into account to design and develop TVET curriculum in Ethiopia?
- What could be the most suitable TVET curriculum design and development models and approaches that could befit present day Ethiopia?

This study presented findings derived from document reviewed and interviews. The documents reviewed were the National TVET Strategy and working documents. Furthermore, the EOS and curriculum developed specifically for the fields of building construction works at federal and regional TVET authorities and colleges were reviewed and analysed. The interviews were held with curriculum development officials of the Federal TVET Agency and sampled Regional TVET Agencies as well as principals, heads of department and trainers from sampled TVET colleges that provide training in the fields of building construction works.

The TVET curriculum development officials at Federal TVET Agency and Regional TVET Agencies were selected using purposive sampling techniques because they were responsible for curriculum design and development. Furthermore, the principals

of sampled TVET colleges and HoDs were selected using purposive sampling methods because as curriculum was expected to be designed at institute levels, they have the chance to oversee the curriculum design and development activities. Trainers were selected using both purposive and convenience sampling methods. Trainers were selected because trainers develop curriculum under the support of TVET institutes (MoE, 2007: 8). The training institutes that had experience in curriculum design and development were selected using purposive and convenience sampling methods.

All the interviews were held face-to-face using unstructured in-depth interview methods. The National TVET Strategy and working documents and any other written document and related literature to TVET curriculum design and development that were available at federal, regional and institutes levels as well as other countries' experiences visa-a-vis TVET curriculum design and development were thoroughly reviewed, analysed and documented in the literature reviews parts of the thesis.

Regarding the process of data collection, first, to understand the background, different related literature and strategic documents were reviewed and analysed; Second, relevant literature was reviewed to see what has been done regarding the TVET curriculum design and development. Third, data gathering tools were developed and commented on by my supervisor. Fourth, a pilot test was conducted to check the validity of the instruments. Based on the information obtained from the pilot test, the items were revised. After improving the instruments on the basis of the feedback from the pilot test, the instruments were refined and administered to the target respondents with the necessary explanations,

Regarding data analysis, data were collected using interviews and document analysis. Data having common core contents were clustered and organised. In other words, those data that had similarity in their subject matter were grouped and administered together. After theme-based coding was finalised, the data were analysed by narrating the evidences/responses in words as they appeared in the respondents' response. In general, data that were obtained through interviews and document analysis were analysed manually by categorising the data into themes or meanings.

7.2 Conclusions

The study presented data derived from the document reviewed and interviews. Hence, the conclusions are presented based on basic research questions and drawn from the qualitative data presented in chapter 5 and discussion held in chapter 6.

Conclusion on research question 1

What factors have and continue to determine TVET curriculum design and development in Ethiopia?

From the review and analysis of the TVET policy and working documents, it was noted that Ethiopia was pursuing outcome-based TVET system and the major objective of the reformed Ethiopian TVET system was to create a TVET system which is wage and self-employment oriented, demand driven and appropriate to the development needs of the Ethiopian economy.

It again emerged from the study that Ethiopia has followed the outcome-based TVET system by which labour market demand is identified by industry and then EOS are developed using international benchmarking and TVET curriculum is developed based on EOS developed by industry. It can be concluded that there is no problem with outcome-based TVET system for Ethiopia. But the way outcome-based TVET system is perceived and eventually executed created problems. There are different factors that affect TVET curriculum design and development in Ethiopia.

The study found out that the following are major factors that have and continue to determine TVET curriculum design and development in Ethiopia as presented and discussed in chapter 5 and chapter 6 of this study:

- The way labour market demand and training needs were understood, identified, analysed and put in place;
- The way EOS were defined, identified and classified;
- The non-existence of common understanding between TVET authorities and the training providers and the impact this brought on curriculum implementation;

- The way international benchmarking is applied and other countries' experiences were espoused;
- The way occupational standards were mapped and levelled;
- The way module course, module contents were selected and developed;
- The way training duration allotment was perceived, and the way times for theory and practice, for in-institute and in-company training were perceived and allotted in the curriculum;
- The way curriculum was implemented; and
- The issue of curriculum revision, monitoring and evaluation system.

Conclusion on research question 2

What curriculum design theories and philosophies underpin the design of TVET curricula in Ethiopia?

Generally, it can be deduced from the findings of the study that the profound reform of the Ethiopian TVET system was aimed at creating a TVET system which is wage and self-employment-oriented, demand-driven and appropriate to the development needs of the Ethiopian economy.

In order to identify the curriculum design theories and philosophies that underpin the design of TVET curricula in Ethiopia, it was necessary to present what the curriculum comprises in relation to educational philosophies. From the analysis of the model curriculum developed for "building construction works", the curriculum comprises major and common courses. The major courses are those that are directly derived from the competency of OS, while the common courses are those the curriculum developers propose to be included in the curriculum. That means knowingly or unknowingly the Essentialism Philosophy is unwittingly pursued. However, according to the findings of the study, there are other courses such as English and Maths that are not included in the curriculum though they are essential in "building construction works' curriculum.

As it emerged from the National TVET Strategy and other working documents, and the OS and curriculum reviewed that, the TVET system focuses more on the interest of

the industry while the long-standing interest of trainees and society are relegated to the background. As Ethiopia is a developing country and most of the TVET trainees want to be employed than to be self-employed, the curriculum needs rather to focus much on industry's labour market demand of the country. However, TVET aims not only to create citizens that are competent to be employed by employers but also to be self-employed and creating own job. Hence, the interest of the trainees and the society need to be also considered when the curriculum is designed.

Regarding the Ethiopian outcome-based TVET curriculum design and development, the Ethiopian TVET system follows a single curriculum design strategy for designing and developing TVET curriculum for all trades and blue and white collar work-related-vocational and technical education and training. Accordingly, when the issue of curriculum design and development is discussed, it is inevitable to discuss about issues related to OS development process. This is because the Ethiopian TVET curricula are the direct reflection of OS. Hence, in reference to TVET curriculum design, it can be concluded that the Ethiopian TVET system have not clearly stated theories and philosophies that underpin the design of TVET curricula that addresses the guiding principles put in the National TVET Strategy and other working documents. There is nothing mentioned in any TVET working documents what philosophy (ies) Ethiopia was exactly pursuing pertinent to TVET programmes. However, it is documented in the Ethiopian TVET working documents that the Ethiopian TVET System aims at addressing trainees' interest, centring for individual differences and needs which the progressivism philosophers advocate. However, it emerged from the findings of the study that as there is only one OS, and the curriculum is the direct derivative EOS, it can be said thus that the TVET system does not address the specific requirements of each target group. This leads to the conclusion that the Ethiopian TVET system does not follow the Progressivism Philosophy as reflected in the national TVET working documents. However, it is documented in the TVET working documents that the TVET System focuses on present and future trends and issues of the national interest. Hence, it can be said that the Ethiopian TVET System follows Re-constructionism philosophy. In fact, it can be deduced from the findings of

the study that the problem of the Ethiopian outcome-based TVET system is not primarily the philosophy that it is pursuing. The problem is rather not being able to put into practice what is written as guides in the TVET strategy and other working documents.

Conclusion on research question 3

What major issues and considerations need to be taken into account to design TVET curriculum in Ethiopia?

There are issues and considerations that need to be taken into account in designing the TVET curriculum in Ethiopia which emerged from the study as presented and discussed in chapters 5 and 6 which include:

- International benchmarking and taking other countries' experience into consideration;
- EOS mapping and qualification levelling methods;
- Training time allotment;
- Module sequence, breadth and width; and
- Stakeholders' roles and responsibilities in curriculum design and development

I. International benchmarking and taking other countries' experience

The reformed Ethiopian TVET-System is an outcome-based system, meaning that it uses the needs of the labour market and occupational requirements from the world of work as the benchmark and standard for TVET delivery. The assumptions underlying to this is that the curriculum should be prepared based on OS developed by the industry. It emerged from the study that it is only from the Australian and the Philippines TVET system that OSs were adopted and widely used specifically in OS development. However, it was noted that there was no evidence of what experiences were taken and who (persons) and which organisations participated in addressing issues on the experiences other than espousing competencies that have been taken from Australia and the Philippines.

II. EOS mapping and qualification levelling methods

The study revealed that the Ethiopian qualification levelling into five levels has created a feeling of discomfort for both developers and implementers as it is seen as waste of time and resources. The time allotted for Level - I seems insufficient to make one competent and qualified to perform specific jobs or to be employed. There are a number of competences unnecessarily repeated and therefore led to the increase of levels. Regarding the maximum level, if the unnecessarily redundant and repetition of contents are avoided, say three years might be enough to cover all the courses allotted for Level V. Level V does not necessarily mean to stay there for five years. On average, Level - I and II might take not more than a year if really the time that is spent in the name of practice and cooperative learning are appropriately used.

III. Training time allotment

Less emphasis is given to the time allotment in the building construction works TVET curriculum. Every curriculum content is not weighted systematically before training duration is allotted to them. There is no uniform understanding in identifying theory and practical training. As could be noticed from occupational mapping of building construction work, the time allotted for Level - I seems insufficient to make one competent and qualified to perform specific jobs or to be employed.

Even though it is oftentimes said by TVET officials that the outcome-based TVET system is not a year based and therefore every trainee can move to next grade/level after successful completion, experiences show that every task should be confined within a certain time frame to complete. There is great variation in time allotment. This exaggerated variation leads training to be boring and playing with the trainees' valuable times.

There is no clear understanding between cooperative training and in-company training among the training providers. Some TVET colleges have divided the learning activities into 30% theory and 70% practice. However, the "30%/70%" (theory/practice) time

allotment in general and the cooperative and in-company training programmes in particular were not implemented properly. This might be because inter alia, it is difficult to get companies that cater for practicum for all the TVET candidates due to various reasons.

IV. Module sequence, breadth and width

The research results show that the learning materials in the TVET curriculum are so exaggeratedly repeated within and across different levels. The repetition of courses and contents should be planned at successive levels each time as the level of complexity increased. In doing so, the breadth and depth of the contents need to be considered as level increases. In the case of curriculum of building construction works, it was noted that if those three standing alone courses named for example “installation construction works – Level - I”, “installation construction works – Level - I” and “finishing construction works – Level - I” clustered together as one occupation and unnecessary recurred contents and jargons are avoided, all courses could be completed within a year.

V. Stakeholders’ roles and responsibilities in curriculum design and development

It was noted that the main responsibility of developing adequate curricula is given to the individual TVET providers while Regional and Federal TVET authorities have the responsibility to offer facilitation and capacity-building services and therefore can be approached for support. The mandate of developing curricula was not given to Federal TVET Authority. Instead the model curriculum is developed by a group of experts from different trainers under the auspices of the Federal TVET authorities based on the EOS. However, the TVET providers could not properly discharge the responsibility of developing curriculum given to them. Instead, most of the training providers preferred to stick to using the model curriculum developed by the Federal TVET Authority.

It emerged from the findings of the study that EOS should be developed by industry. However, even though EOS is primarily being used for TVET delivery, it is little known if other stakeholders such as trade associations, private and government employers,

organisations working on social and labour affairs were involved. Concerning TVET curriculum design and development, rather than where to be developed, emphasis need to be given to the concerned bodies that should be involved in the curriculum design and development activities. In spite of the fact that it emerged from the documents analysed that diversified organisations and bodies should participate in TVET curriculum design and development, it is not known the extent to which all stakeholders in general and governmental, non-governmental and private training providers, researchers and relevant ministries in particular really were involved in the curriculum development.

Conclusion on research question 4

What could be the most suitable TVET curriculum design and development models and approaches that could befit present Ethiopia?

In Ethiopia, there are no research organisations/institutions that conduct research on TVET curriculum design and development specifically. As a result, it seems that some TVET curriculum development officials assume that the only outcome-based TVET curriculum development approach that exists worldwide is the one Ethiopia is practicing presently, i.e., converting competencies directly to curriculum contents. This line of thinking limits Ethiopia from exercising and innovating new TVET curriculum development approaches. For instance, there are different approaches other than competency-curriculum conversion methods to design and develop TVET curriculum. Developing A Curriculum (DACUM), Systematic Curriculum and Instructional Development (SCID), Occupational Standard Training (OTS) approaches among others, are viable TVET curriculum design and development approaches. Therefore, the TVET officials, curriculum planners, training providers, trainers, among others, need to be acquainted with the different curriculum development approaches. There should be TVET research and development centres where new innovation is created, where other countries' and innovative technologies are adopted, adapted, accumulated, and transferred to end users.

The Ethiopian TVET Authority has designed and implemented an Ethiopian TVET system to develop EOS and design and develop curriculum based on international best practices. For instance, the processes and steps that were followed in order to develop EOS are consecutively: international benchmarking, adopting, adapting and verifying. It emerged from the study that in order to identify, classify and develop OS, firstly the competency standards other countries have developed need to be espoused. The process of specifying OS did not start with analysing what people in a certain occupation are doing by industry before international benchmarking and compare with other countries' experiences for verification. Besides, the standards were not verified with relevant organisations and concerned bodies and stakeholders.

Furthermore, It emerged from the findings of the study that even though people from the world of work have participated in the development workshop, the Ethiopian occupational standards were not developed under the auspices of the respective industries, in practice, it is the MoE that was responsible and thus oversaw the curriculum development process. It can be concluded from the above discussions that the EOS was not developed based on the principles put in the TVET working documents. On the whole, the contents of the curriculum developed were the direct conversion of EOS components and the TVET curriculum mapping was also similar with the Ethiopian occupational standard mapping. In addition, the training qualification level of each curriculum was the same as the occupational levels put in EOS. Therefore, it can be concluded that the TVET curriculum is the replication of EOS and there was little value added in the TVET curriculum developed.

7.3 Recommendations

This section presents the recommendations based on the findings of the data gathered, analysed and discussed. The following recommendations and suggestions are drawn based on the research findings and conclusions. The recommendations are put forward taking formal TVET curriculum developed for building construction fields of study into considerations.

- The Ethiopian TVET curriculum was developed from EOS. The EOS was developed along with the order of 'international benchmarking', 'adopt, adapt and verify'. However, the researcher suggests that first the process of specifying OS should be started with analysing what people in a particular occupation are doing by industry before international benchmarking and comparing the OS analysed with other countries' experiences for verification. In other words, the researcher suggests that first the OS should be developed by the industry (people from the world of work and concerned stakeholders) and then the draft OS that is developed be compared with international occupational profiles. Besides, the OS need to be verified with relevant organisations such as chambers of commerce and professional associations. Unlike the existing practice in which international benchmarking is carried out prior to OS development, it is advisable to refer the OS developed to the International Standard Classification of Occupations (ISCO) set by ILO in order to communicate and compare the content of the OS internationally to ensure that the qualifications are transparent to be able to promote international and national mobility of the workforce in the long run.

- The contents, curriculum mapping and the training qualification levels of the present TVET curriculum are similar with the EOS components. In other words, all parameters of the curriculum are the direct copy of parameters of EOS. TVET curriculum should not necessarily be the direct mirror and reflection of each competency and element of OS. The OS is a precise description of knowledge, skills, attitudes and work competencies necessary for working in a particular occupation, i.e. for performing a particular job. Hence, it is recommended that the TVET curriculum should not be necessarily the direct replication of EOS. Rather it should add value in the training delivery processes. Therefore, the TVET curriculum should be a general training framework package that can be used as the vessel of the training contents ready to be delivered as course for trainees and leaves room for trainers to adapt and customise it to their real situation.

- The curriculum design and development approaches that Ethiopia is pursuing for both the formal and non-formal TVET programme is similar. However, as the

diversity of the trainees issues need to be considered when TVET curriculum is developed, it is recommended that the curriculum that addresses individual, societal and employers needs should be designed. It is also recommended that instead of using similar approach, different and appropriate training needs assessment should be undertaken to design curriculum for formal and non-formal training and education programmes.

- There is no tangible evidence which indicates that labour market demand was properly undertaken and also if stakeholders appropriately participated in labour market demand analysis before Ethiopian occupational standards are developed in the field of building construction works. Therefore, it is recommended that labour market demand analysis be undertaken before OS mapping is designed. It is also recommended that the labour market demand assessment and OS development processes should be undertaken by concerned respective industries and organisations, such as the Ministry of Labour and Social Affairs and respective authorities and relevant partners and stakeholders such as ILO.

- It emerged from the study that units of competency of EOS are adopted from the competency standards of other countries. However, other related issues such as training delivery and learners support systems are not adopted. It would be difficult to convert the units of competence adopted into curriculum contents unless the whole system is considered holistically including the curriculum, competency assessment, training delivery and management systems. Just picking one cell, such as only competency standard that was developed somewhere else and changing it to curriculum might not work. Therefore, Ethiopia should benchmark itself against best practices of various developed and developing countries which have succeeded in outcome-based TVET system. The experience should be clearly documented, presented and discussed by partners and stakeholders before it is adapted and customised to Ethiopian's real contexts.

- It is advisable to benchmark EOS to international standards in order to communicate and compare the contents of EOS with international standards to

ensure that the qualifications are transparent and to the standard. It was noted that in the Ethiopian TVET system, some units of competences were taken from Australia and others were taken from the Philippines, and yet some units of competences were taken from South Africa, just because they can be easily accessed from the Internet. Hence, it is rather recommended that when international benchmarking is undertaken and TVET system is adopted from other countries, it should be with tangible reasons and justifications; and the issues of properly adopting and adapting the contexts in which those countries have developed the curriculum and training materials need to be considered.

- It emerged from the study that some fields have less demand when they stand alone as an occupation but have more demand when they are combined and integrated with other occupations. It is also noted that some occupations had demand just because of the presence of one or two occupations it is clustered with. It is also noted that the industry does not employ two or three workers with different so called occupations at one work-site. Therefore, in order to make all occupations to be demanded and inclusive in the labour market, some occupations need to be merged. Furthermore, those contents with less importance should be amalgamated and integrated with those contents that are of high importance. It is also recommended that when units of competence are identified and classified, the real environmental situation of the country and the degree of importance of each unit of competence for employment and self-employment need to be considered.

- It emerged from the study that less emphasis is given to the time allotment in Ethiopian TVET curriculum. There is no uniform understanding in identifying theory and practical training contents. It emerged from the findings of the study that from all allotted time for a particular course, 30% time is allotted for theory and 70% time is allotted for practical training. However, it was noted that the “30%/70%” (theory/practice)’ time allotment were not implemented in training institutes. Therefore, it is recommended that due attention needs to be given to practical training programmes in particular. Furthermore, the practice and theory time for all

course types, white and blue collar training programme, for formal and non-formal training programmes were uniformly allotted by “30% theory /70% practice as if it were one size fits all. In connection with the training duration, it emerged from the study that when training duration was allocated for each curriculum, first the nominal time was allocated for each module, and then from the time allocated for the module 30% of the time is allotted for theory and 70% of the time is allotted for practical activities, and finally the total sum of allocated times for each module makes up the total sum for the occupation. However, it is recommended that the training duration and time should be allocated based on the depth and breadth of the each content. Furthermore, in order to provide hand on training for trainees, it is imperative to allot more time for practical activity systematically. First, all the trainees and trainers’ activities from each curriculum content developed needs to be articulated. Then, from these activities articulated, the activities that are carried out through theory and through practice should be identified. The time required to undertake theoretical and practical activities by trainees and trainers need to be identified. The total time allotment for the module should be the cumulative time allotted for theory and practical activities of each module.

- It is emerged from the study that similar training contents in the Ethiopian TVET curriculum are so exaggeratedly repeated within and across different course-modules and grade-levels. In the case of OS, as the units of competences show the skills, knowledge and competences that one as a worker should possess in order to perform specific/particular task, some units of competences might naturally emerge again and again in a particular OS. But in the case of the curriculum, the same learning outcome and contents and sub-contents that are derived from the repeated units of competences should not necessarily repeated in a curriculum. Therefore, it is recommended that similar topics with similar contents within and across curriculum need to be identified, systematically blended and clustered together and developed as a single entity or a learning package.

- As was noted from the model curriculum reviewed during the study, there are some topics that are frequently presented in the curriculum within a level and

across levels. These contents within one level could have been integrated together to form one learning module and could be blended together as a single entity. Thus, it can be deduced that there is no clear and smooth articulation between courses and contents within and across levels. Therefore, the Ethiopian TVET curriculum should fulfil the requirements that enable it to have ensured life-long learning opportunities and promote mobility and progression between different TVET occupations, between different qualification levels and between TVET and general higher education.

- The Ethiopian Occupational Standards were developed under the auspices of Federal TVET authority. In other words, the EOS development process was facilitated by TVET authority. The TVET curriculum was being developed by TVET authorities. But, among many other stakeholders, only trainers have participated in the development. It emerged from the study that the role of the trainers was just to convert units of competences directly to training modules. There was no room for the trainer-participants to add value nor present innovative ideas that enrich the curriculum contents. However, the outcome based TVET curricula that are used for formal TVET programme need to be developed by translating the occupational standards developed and owned by industry into feasible training programmes. Hence, it is recommended that OS needs to be developed and facilitated by industry, and the Federal /Regional TVET Authority should turn away from facilitating OS and focus on designing and developing model curricula, training packages and reference materials needed being along with TVET providers. It is also recommended that regional TVET authorities along with TVET institutes should participate in the model curriculum development and adapting the model curriculum towards their real situation. In this regard, the Federal TVET Authority needs to empower the Regional TVET Authority to enable them to adapt the model curriculum towards their situation, and the Regional TVET authorities on its part need to empower the TVET institutes on curricula and training materials development and adaptation to their real situation and utilize them properly.

- The present Ethiopian TVET training delivery style is self-contained, meaning that one trainer offers training of all units of competencies, namely, the major (core), common (generic) and so forth. It is only one educator who provides theory and practice of all courses/modules of particular grade-level training. It is therefore not fair for one educator to develop and offer both core and generic courses as one educator cannot be competent enough to offer all assigned courses. Therefore, it is recommended that the trainer should offer training on what he has specialised in and there must be special trainers who offer training for generic courses as these courses comprise naturally more managerial, communication and life-skills contents.

- It was noted that most of the training providers were not comfortable with the curriculum and do not know who (trainers) developed them. In fact, it does not mean all trainers should directly participate in the curriculum development workshops. But, there can be a mechanism through which all the trainers could contribute and give feedback from their workplaces. Therefore, the importance of fairness and transparency cannot be underestimated during TVET programme design and development. There should be formal or informal ways for partaking and giving feedback of trainees and stakeholders to federal TVET authorities as to what and when to revise the curriculum; and the curriculum design and development process should be transparent and it should be discussed with training providers and get their input before implementation.

- Occupational standards and training materials are not static documents. They could change from time to time due to changes in industrial and labour market and trainees' needs. In the Ethiopian case, there are validation workshops for OS development but there was rare validation workshop for curriculum. The curriculum should undergo periodic renewal, and it is necessary to set regular intervals for its revision to reflect the latest industry, societal and trainees' demands. New versions need to be batched at from time-to-time intervals. To this end, the curricula that are developed somewhere by curriculum developers through workshops, should not be sent to training providers without prior

validation. Besides, there should be also follow-up during implementation phase. There should also be validation and authentication of the curriculum after draft design. There should be also impact analysis, curriculum review or evaluation mechanism systems in place to address changes in industrial and labour market and trainees' needs.

7.4 Suggestions for further studies

In order to adjust the Ethiopian TVET curriculum, it became inevitable first to adjust the EOS as any strength and limitations that are exhibited in curriculum design and development are attributed to the OS development. Experiences worldwide and literature advocate that OS need to be developed by respective industries. It is also indicated in the Ethiopian National TVET strategies and other working documents that the EOSs were identified, classified and developed by the industry. The Federal TVET Authority of Ethiopia also supports the idea that OSs must be developed and owned by industry. All activities and attribution regarding labour market demand, occupational structural mapping and qualification framework and levelling system are ascribed to the industry. However, there are rumours/disagreements (particularly from the training providers) that the industry does not own the EOSs developed and the indicators to this is that the industry is not using the occupational titles and the National TVET Qualification Framework and its descriptions at real workplaces. Therefore, it is significant in the future to conduct further research to assess the extent to which the industry is involved in TVET endeavours in general and in Ethiopian Occupational/Competency Standard design and development processes in particular.

Furthermore it is known that this study much focused on the practices of the TVET curriculum design and development. When the issue of the TVET curriculum design and development is raised, it is inevitable to discuss issues related to its implementation and training delivery methods. Therefore, another issue worth further studying is the issue of TVET curriculum implementation and training delivery methods. Hence, how the practices of TVET curriculum implemented and training delivery is carried out in Ethiopia can be studied. Furthermore, it is known that this study is limited to the practices of outcome-based TVET curriculum design and

development in Ethiopia. However, the researcher could figure out that there are different TVET systems other than the outcome-based worldwide such as Input-based TVET system, Process-based TVET system among other systems. Therefore, it is imperative to study what these TVET systems in general and the practices of TVET curriculum design and development in the systems other than the so called outcome-based look like and what features and practices make them similar and different from one another.

7.5 Chapter summary

The chapter presented the summary, conclusions and recommendations for the study. It was indicated in the summary part that Ethiopia has implemented different outcome-based TVET curriculum design and development approaches since 2007.It was also indicated that Ethiopia has developed many working and policy documents that have guided the system since 2007. The conclusions part presented data derived from the documents reviewed and interviews based on basic research questions and drawn from the qualitative data presented in Chapter 5 and discussion held in Chapter 6. Finally, recommendations were made based on the findings of the data gathered, analysed and discussed. The recommendations and suggestions were drawn based on the research findings and conclusions drawn taking formal TVET curriculum developed for building construction fields of study into considerations.

Finally, suggestions for further studies were made. In this regard, the researcher suggested that it is important to assess the extent to which the industry is involved in TVET endeavours in general and in Ethiopian Occupational/Competency Standard design and development processes in particular. Furthermore, two topics of the study were suggested for further study. These are: “The practices of TVET curriculum implementations and training delivery methods in Ethiopia”, and “the existing TVET systems other than outcome-based TVET system worldwide in general and the practices of TVET curriculum design and development other than that of the outcome based TVET system.

7.6 Limitations of the study

The researcher used documents such as Ethiopian National TVET Strategy and working documents as one of the data gathering tools. The study investigated that the

TVET curricula were developed through workshops. The researcher could not get the chance during data collection to observe the TVET curriculum development workshop held for building construction works. Therefore, the absence of the observation as a data-gathering tool limited the findings of the study.

It is also indicated in the Ethiopian National TVET Strategy and other working documents that the EOSs should be developed by the industry. It would be imperative if the extent to which the construction industry has involved in the Ethiopian EOS design and development processes would be known. However, the industry was not selected as one of the sources of information for the study. As a consequence, the non-involvement of industry as one of the sources of data limited the study.

The study is highly limited with few documents and information. There was no related literature available that were written on the history and practices of TVET system in Ethiopia. Even those very few related literature were not available as they might be not documented or as they are found at the hands of few individuals who were officials earlier. There were also very few studies on the Ethiopian TVET system. Even those few studies available were the research and studies undertaken by those academics and professionals other than from the TVET fields.

There were no documents such as minutes taken regarding the decisions made when one system is changed to the other, when OS and curriculum were developed, and even who individuals participated in the OS and curriculum development workshops.

The knowledge of most of the high level officials at Federal and regional TVET authorities are limited to the Ethiopian TVET history and practices after 2010 because they are far away from the profession in their academic background and/or non-experienced in the field. This also limited the study from investigating historical background of the Ethiopian TVET system. Most of them defend their profession than giving what they feel. They do not know the past history of TVET system in general and about TVET curriculum design and development in Ethiopia in particular. All the limitations stated above limited the researcher from getting viable and valid data.

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UNISA college of education

APPENDIX A: INTERVIEW GUIDE

INTERVIEW GUIDE
for
Official /Curriculum developers/ at Federal TVET Agency of Ethiopia
&
Official /Curriculum developers/ at Regional TVET Agencies

Date _____

A. BACKGROUND INFORMATION

1. Organization _____
2. Sex: Male ☐ Female ☐
3. Qualification
   - 3.1 1st Degree ☐ 3.2 2nd degree ☐
   - 3.3 indicate, if any _____
4. Current occupation _____
5. Year of service:-
   - 5.1. As a trainer _____yrs
   - 5.2. On current position _____yrs
   - 5.3. Other assignment_____/____yrs
   - 5.4 Total _____yrs

B. UNSTRUCTURED INTERVIEWS GUIDE

1 What curriculum design and development theories and philosophies underpin the design of TVET curricula in Ethiopia?
2. Are there other countries experiences that taken into account as benchmarks and standards in designing the TVET curricula in Ethiopia?
3. If there are any other countries experiences that are taken as a benchmark and standard to design curriculum, what are the reasons for preference of those countries and their experiences?
4. In your opinion, where should TVET curricula be designed? At TVET institute level or at federal/national or regional level?
5. What is your justification for your preference /response/ for question number 3?
6. The Ethiopian TVET curricula are said to be modularized. What is the extent of modularization of the Ethiopian TVET curricula?
7. What necessitates the Ethiopian TVET curriculum to be modularized?
8. Who have been designing and developing curriculum for TVET institutes in Ethiopia?
9. In your opinion, who should design curricula that are to be used by TVET institutes?

10. To what extent are institutes able (have capability) to adapt the curriculum already centrally designed to their real situation?
11. What are the roles and supports of federal/regional TVET agency in providing institutes in developing curricula?
12. Who facilitate support to the curriculum designing and development process in Ethiopia?
13. The Ethiopian TVET system is dual system (both in-school/institute and in-company training) (MoE, 2007: 18). To what extent does the existing curriculum portraits what to do and how to address contents during in-company /cooperative learning?
14. What are the grounds to select and classify major and common courses in a specific field area?
15. How is time allocated for every course contents or/and modules and levels in the curriculum?
16. What is the importance of exit points at level - I and II at the presence of level - III, IV and V?
17. What are the extents of all fields /trades /occupations to be demanded in the market?
18. What is the extent the issues of curriculum implementation and instruction to be taken into account in the process of curriculum design?
19. In your opinion, what is the ultimate purpose of TVET curriculum?
20. Whose needs should be centrally considered when curriculum is developed?
21. How often do you evaluate and revise the existing curriculum?
22. What are major factors and challenges that affect TVET curriculum design and development in Ethiopia?
23. What are the most suitable TVET curriculum design and development models and approaches that could befit present Ethiopia?
24. Please indicate anything else you think important that hasn't come up so far.

UNISA college of education

APPENDIX B: INTERVIEW GUIDE FOR TVET COLLEGES DEANS

Date _____

A. BACKGROUND INFORMATION

1. Organization _____
2. Sex: Male ☐ Female ☐
3. Qualification

3.1 1st Degree ☐ 3.2 2nd degree ☐

3.3 indicate, if any _____

4. Current occupation _____
5. Year of service:-

5.1. As a trainer _____yrs

5.2. On current position _____yrs

5.3. Other assignment_____/____yrs

5.5 Total _____yrs

B. UNSTRUCTURED INTERVIEWS GUIDE

1. Who designs and develops the curriculum you are using at your institute?
2. If the curriculum is developed at your institute, what are the bases, inputs and sources of your curriculum design?
3. In which of the training fields you are using the model curriculum developed at federal level or regional level?
4. In which of the training fields you are using the curriculum developed at your institute?
5. If the curriculum is not developed at institute and rather use the model curriculum developed centrally, are you comfortable with those curricula (say model curricula) designed by the government?
6. Have you ever developed curriculum at your institute by your own in the past?

a) If yes (to question 6 above), in what fields?

7. If you have ever developed curriculum at your institute, was there any support given from federal or regional offices? Please mention the support they have provided if there?
8. Do you have a plan to develop curriculum on your own in the future as an institution?

a) If so, in which fields?

9. The Ethiopian TVET curricula are said to be modularized. What is the extent of modularization of the Ethiopian TVET curricula?
10. How is time allocated for every course contents or/and modules and levels in the curriculum?
11. As an institute, how often you are allowed to manipulate and adapt the model curriculum developed say, at regional or at federal level to your institute's real situation?
12. How are the contents that thought to be already missed from the curriculum are added?
13. How are contents in the curriculum that thought to be worthless are removed?

14. In your opinion, what are the major factors and challenges that affect TVET curriculum design and development in Ethiopia?
15. What curriculum design theories and philosophies underpin the curriculum design of TVET curricula in Ethiopia?
16. What major issues and considerations need to be taken into account to design workable and acceptable TVET curriculum in Ethiopia?
17. What are the most suitable TVET curriculum design models and approaches that could befit present Ethiopia?
18. Please indicate anything else you think important that hasn't come up so far.

UNISA college of education

APPENDIX C: INTERVIEW GUIDE FOR TVET COLLEGES DEPARTMENT HEADS

Date _____

A. BACKGROUND INFORMATION

1. Organization _____
2. Sex: Male ☐ Female ☐
3. Qualification
   - 3.1 1st Degree ☐ 3.2 2nd degree ☐
   - 3.3 indicate, if any _____
4. Current occupation _____
5. Year of service:-
   - 5.1. As a trainer _____yrs
   - 5.2. On current position _____yrs
   - 5.3. Other assignment_____/____yrs
   - 5.6 Total _____yrs

B. UNSTRUCTURED INTERVIEWS GUIDE

1. Is there any curriculum developed at your institute level or department level?

a) If so, in what fields?

2. If your department uses the model curricula developed centrally, as a department head, to what extent are you comfortable with those curricula (say model curricula) designed by the government?
3. To what extent are trainers free to provide training flexibly, say to add contents and trim down what they think worthless?
4. Which curricula are you using? The curriculum developed by central government or the curriculum developed at your institute?
5. How are the contents that thought to be already missed from the curriculum are added?
6. How are contents in the curriculum that thought to be worthless are removed?
7. As a department head, to what extent are you allowed to adapt your curriculum so as to suit its objectives?
8. To what extent are you comfortable with course levelling system?
9. To what extent does the curriculum you are using meet its purposes and objectives?
10. How many of trainers in your institute have knowledge how /the way the curricula they are using have been so far developed?
11. To what extent do you know how to convert Ethiopian Occupational Standard (EOS) to curriculum?
12. The Ethiopian TVET curricula are said to be modularized. What is the extent of modularization of the Ethiopian TVET curricula?

13. How is time allocated for every course contents or/and modules and levels in the curriculum?
14. What are major factors and challenges that affect TVET curriculum design and development in Ethiopia?
15. What curriculum design theories and philosophies underpin the curriculum design of TVET curricula in Ethiopia?
16. What major issues and considerations need to be taken into account to design workable and acceptable TVET curriculum in Ethiopia?
17. What are the most suitable TVET curriculum design models and approaches that could befit present Ethiopia?
18. Please indicate anything else you think important that hasn't come up so far.

UNISA college of education

APPENDIX D: INTERVIEW GUIDE FOR TVET TRAINERS

Date _____

A. BACKGROUND INFORMATION

1. Organization _____
2. Sex: Male ☐ Female ☐
3. Qualification
   - 3.1 1st Degree ☐ 3.2 2nd degree ☐
   - 3.3 indicate, if any _____
4. Current occupation _____
5. Year of service:-
   - 5.1. As a trainer _____yrs
   - 5.2. On current position _____yrs
   - 5.3. Other assignment_____/____yrs
   - 5.4 Total _____yrs

B. UNSTRUCTURED INTERVIEWS GUIDE

1. In your opinion, where should TVET curricula really be designed and carried out? At institute level? Or it should be developed at national or regional level, say as a model?
2. What is your justification for your preference in question number 1?
3. As a trainer, have you ever participated in curriculum development workshop?
4. How is time allocated for every course contents or/and modules and levels in the curriculum?
5. As a trainer, how much do you know how Occupational Standard (OS) is converted to curriculum?
6. If you have ever used the model curricula developed centrally, to what extent you are really comfortable with those curricula (say model curricula) designed centrally?
7. As an institute, how often you are allowed to manipulate and adapt the model curriculum developed say, at regional or at federal level to your institute's real situation?
8. How are the contents that thought to be already missed from the curriculum are added?
9. How are contents in the curriculum that thought to be worthless are removed?
10. As a trainer, to what extent you are allowed to manipulate /customize the curriculum developed to your institute /department situation?
11. What are major factors and challenges that affect TVET curriculum design in Ethiopia?
12. What curriculum design theories and philosophies underpin the curriculum design of TVET curricula in Ethiopia?
13. What major issues and considerations need to be taken into account to design workable and acceptable TVET curriculum in Ethiopia?
14. What are the most suitable TVET curriculum design models and approaches that could befit present Ethiopia?

APPENDIX E: REQUEST FOR PERMISSION TO CONDUCT RESEARCH AT FEDERAL TVET AGENCY OF ETHIOPIA

On the research entitled, "Assessing the Practices of Technical and Vocational Education and Training Curriculum Design and Development in Ethiopia"

Date _____

To: Federal TVET Agency of Ethiopia
Addis Ababa, Ethiopia

Dear _____

I, Yadessa Tolossa Woyessa, a PhD student at the University of South Africa is conducting a research under supervision of Professor Akwasi Arko-Achemfuor, in the College of Education. I am inviting you to participate in a study entitled "Assessing the Practices of Technical and Vocational Education and Training Curriculum Design and development in Ethiopia".

The aim of the study is to assess the existing practices and major factors affecting the designing of TVET curriculum and explore issues and considerations to be taken into account in designing TVET curricula in Ethiopia. Your organization has been selected because it has the responsibility to overall manage TVET programme in the country and we believe that you have the potential to provide me the necessary information on TVET Curriculum Design and Development in the country.

The study will entail an in depth interview with two higher officials, possibly with TVET curriculum development process owner /head and a concerned TVET curriculum design/development expert. The interview mainly focuses on the practices of TVET curriculum design and development processes. Date of the interview will be arranged on mutually agreed upon date and time which will last for one and half hours for each interviewee.

The benefits of this study lies on its contribution in providing clear understanding to policy makers , curriculum developers, implementers and stakeholders by providing vital information on issues in relation to TVET curriculum design and development in the country.

The study has no any kind of potential risks at all. There will be no reimbursement or any incentives for participation in the research. Feedback procedure of the result of the research will entail organizing workshop/seminar/discussion forum.

*If you need further information on this research you can contact my supervisor- Professor Akwasi Arko-Achemfuor (*aachea@unisa.ac.za*) at University of South Africa (UNISA).*

Yours sincerely,

_____

Yadessa Tolossa Woyessa (Researcher)

APPENDIX F: REQUEST FOR PERMISSION TO CONDUCT RESEARCH AT SNNPRS TVET AGENCY

On the research entitled, "Assessing the Practices of Technical and Vocational Education and Training Curriculum Design and Development in Ethiopia"

Date _____

To: South Nations, Nationalities and Peoples Regional State TVET Agency
Awassa, Ethiopia

Dear _____

I, Yadessa Tolossa Woyessa, a PhD student at the University of South Africa is conducting a research under supervision of Professor Akwasi Arko-Achemfuor, in the College of Education. I am inviting you to participate in a study entitled "Assessing the Practices of Technical and Vocational Education and Training (TVET) Curriculum Design and Development in Ethiopia".

The aim of the study is to assess the existing practices and major factors affecting the designing of TVET curriculum and explore issues and considerations to be taken to design TVET curricula in Ethiopia. Your organization has been selected because it has the responsibility to overall manage TVET programme in the region and we believe that you have the potential to provide me the necessary information on TVET Curriculum Design and Development in the country.

The study will entail an in depth interview with two higher officials, possibly with TVET curriculum development process owner /head and a concerned TVET curriculum design/development expert. The interview mainly focuses on the practices of TVET curriculum design and development processes. Date of the interview will be arranged on mutually agreed upon date and time which will last for one and half hours for each interviewee.

The benefits of this study lies on its contribution in providing clear understanding to policy makers , curriculum developers, implementers and stakeholders by providing vital information on issues in relation to TVET curriculum design and development in the country.

The study has no any kind of potential risks at all. There will be no reimbursement or any incentives for participation in the research. Feedback procedure of the result of the research will entail organizing workshop/seminar/discussion forum.

*If you need further information on this research you can contact my supervisor- Professor Akwasi Arko-Achemfuor (*aachea@unisa.ac.za*) at University of South Africa (UNISA).*

Yours sincerely,

_____

Yadessa Tolossa Woyessa (Researcher)

APPENDIX G: REQUEST FOR PERMISSION TO CONDUCT RESEARCH AT OROMIA NATIONAL STATE TVET AGENCY

On the research entitled, "Assessing the Practices of Technical and Vocational Education and Training Curriculum Design and Development in Ethiopia"

Date _____

To: Oromia National Regional State TVET Agency

Adama, Ethiopia

Dear _____

I, Yadessa Tolossa Woyessa, a PhD student at the University of South Africa is conducting a research under supervision of Professor Akwasi Arko-Achemfuor, in the College of Education. I am inviting you to participate in a study entitled "Assessing the Practices of Technical and Vocational Education and Training (TVET) Curriculum Design and Development in Ethiopia".

The aim of the study is to assess the existing practices and major factors affecting the designing of TVET curriculum and explore issues and considerations to be taken to design TVET curricula in Ethiopia. Your organization has been selected because it has the responsibility to overall manage TVET programme in the region and we believe that you have the potential to provide me the necessary information on TVET Curriculum Design and Development in the country.

The study will entail an in depth interview with two higher officials, possibly with TVET curriculum development process owner /head and a concerned TVET curriculum design/development expert. The interview mainly focuses on the practices of TVET curriculum design and development processes. Date of the interview will be arranged on mutually agreed upon date and time which will last for one and half hours for each interviewee.

The benefits of this study lies on its contribution in providing clear understanding to policy makers , curriculum developers, implementers and stakeholders by providing vital information on issues in relation to TVET curriculum design and development in the country.

The study has no any kind of potential risks at all. There will be no reimbursement or any incentives for participation in the research. Feedback procedure of the result of the research will entail organizing workshop/seminar/discussion forum.

*If you need further information on this research you can contact my supervisor- Professor Akwasi Arko-Achemfuor (*aachea@unisa.ac.za*) at University of South Africa (UNISA).*

Yours sincerely,

_____

Yadessa Tolossa Woyessa (Researcher)

APPENDIX H: REQUEST FOR PERMISSION TO CONDUCT RESEARCH AT ADDIS ABABA CITY ADMINISTRATIVE TVET AGENCY

On the research entitled, "Assessing the Practices of Technical and Vocational Education and Training Curriculum Design and Development in Ethiopia"

Date _____

To: Addis Ababa City Administrative TVET Agency

Addis Ababa, Ethiopia

Dear _____

I, Yadessa Tolossa Woyessa, a PhD student at the University of South Africa is conducting a research under supervision of Professor Akwasi Arko-Achemfuor, in the College of Education. I am inviting you to participate in a study entitled "Assessing the Practices of Technical and Vocational Education and Training (TVET) Curriculum Design and Development in Ethiopia". The aim of the study is to assess the existing practices and major factors affecting the designing of TVET curriculum and explore issues and considerations to be taken to design TVET curricula in Ethiopia. Your organization has been selected because it has the responsibility to overall manage TVET programme in the region and we believe that you have the potential to provide me the necessary information on TVET Curriculum Design and Development in the country.

The study will entail an in depth interview with two higher officials, possibly with TVET curriculum development process owner /head and a concerned TVET curriculum design/development expert. The interview mainly focuses on the practices of TVET curriculum design and development processes. Date of the interview will be arranged on mutually agreed upon date and time which will last for one and half hours for each interviewee. The benefits of this study lies on its contribution in providing clear understanding to policy makers , curriculum developers, implementers and stakeholders by providing vital information on issues in relation to TVET curriculum design and development in the country.

The study has no any kind of potential risks at all. There will be no reimbursement or any incentives for participation in the research. Feedback procedure of the result of the research will entail organizing workshop/seminar/discussion forum.

*If you need further information on this research you can contact my supervisor- Professor Akwasi Arko-Achemfuor (*aachea@unisa.ac.za*) at University of South Africa (UNISA).*

Yours sincerely,

_____ Yadessa Tolossa Woyessa (Researcher)

APPENDIX I: REQUEST FOR PERMISSION TO CONDUCT RESEARCH AT AWASSA TVET POLYTECHNIC COLLEGE

On the research entitled, "Assessing the Practices of Technical and Vocational Education and Training Curriculum Design and Development in Ethiopia"

Date _____

To: Awassa TVET Polytechnic College

Awassa, Ethiopia

Dear _____

I, Yadessa Tolossa Woyessa, a PhD student at the University of South Africa is conducting a research under supervision of Professor Akwasi Arko-Achemfuor, in the College of Education. I am inviting you to participate in a study entitled "Assessing the Practices of Technical and Vocational Education and Training (TVET) Curriculum Design and Development in Ethiopia".

The aim of the study is to assess the existing practices and major factors affecting the designing of TVET curriculum and explore issues and considerations to be taken to design TVET curricula in Ethiopia. Your institute has been selected because it has the responsibility to provide TVET programme and we believe that you have the potential to provide me the necessary information on TVET Curriculum Design and Development in the country.

The study will entail an in depth interview with one institute dean, three TVET trainers and three department heads currently working at your institute. The interview mainly focuses on the practices of TVET curriculum design and development processes. Date of the interview will be arranged on mutually agreed upon date and time which will last for one and half hours for each interviewee.

The benefits of this study lies on its contribution in providing clear understanding to policy makers , curriculum developers, implementers and stakeholders by providing vital information on issues in relation to TVET curriculum design and development in the country.

The study has no any kind of potential risks at all. There will be no reimbursement or any incentives for participation in the research. Feedback procedure of the result of the research will entail organizing workshop/seminar/discussion forum.

*If you need further information on this research you can contact my supervisor- Professor Akwasi Arko-Achemfuor (*aachea@unisa.ac.za*) at University of South Africa (UNISA).*

Yours sincerely,

_____

Yadessa Tolossa Woyessa (Researcher)

APPENDIX J: REQUEST FOR PERMISSION TO CONDUCT RESEARCH AT GENERAL WINGATE TVET POLYTECHNIC COLLEGE

On the research entitled, "Assessing the Practices of Technical and Vocational Education and Training Curriculum Design and Development in Ethiopia"

Date _____

To: General Wingate TVET Polytechnic College

Addis Ababa, Ethiopia

Dear _____

I, Yadessa Tolossa Woyessa, a PhD student at the University of South Africa is conducting a research under supervision of Professor Akwasi Arko-Achemfuor, in the College of Education. I am inviting you to participate in a study entitled "Assessing the Practices of Technical and Vocational Education and Training (TVET) Curriculum Design and Development in Ethiopia".

The aim of the study is to assess the existing practices and major factors affecting the designing of TVET curriculum and explore issues and considerations to be taken to design TVET curricula in Ethiopia. Your institute has been selected because it has the responsibility to provide TVET programme and we believe that you have the potential to provide me the necessary information on TVET Curriculum Design and Development in the country.

The study will entail an in depth interview with one institute dean, three TVET trainers and three department heads currently working at your institute. The interview mainly focuses on the practices of TVET curriculum design and development processes. Date of the interview will be arranged on mutually agreed upon date and time which will last for one and half hours for each interviewee.

The benefits of this study lies on its contribution in providing clear understanding to policy makers , curriculum developers, implementers and stakeholders by providing vital information on issues in relation to TVET curriculum design and development in the country.

The study has no any kind of potential risks at all. There will be no reimbursement or any incentives for participation in the research. Feedback procedure of the result of the research will entail organizing workshop/seminar/discussion forum.

*If you need further information on this research you can contact my supervisor- Professor Akwasi Arko-Achemfuor (*aachea@unisa.ac.za*) at University of South Africa (UNISA).*

Yours sincerely,

_____

Yadessa Tolossa Woyessa (Researcher)

APPENDIX K: REQUEST FOR PERMISSION TO CONDUCT RESEARCH AT ADAMA TVET POLYTECHNIC COLLEGE

On the research entitled, "Assessing the Practices of Technical and Vocational Education and Training Curriculum Design and Development in Ethiopia"

Date _____

To: Adama TVET Polytechnic College
Adama, Ethiopia

Dear _____

I, Yadessa Tolossa Woyessa, a PhD student at the University of South Africa is conducting a research under supervision of Professor Akwasi Arko-Achemfuor, in the College of Education. I am inviting you to participate in a study entitled "Assessing the Practices of Technical and Vocational Education and Training (TVET) Curriculum Design and Development in Ethiopia".

The aim of the study is to assess the existing practices and major factors affecting the designing of TVET curriculum and explore issues and considerations to be taken to design TVET curricula in Ethiopia. Your institute has been selected because it has the responsibility to provide TVET programme and we believe that you have the potential to provide me the necessary information on TVET Curriculum Design and Development in the country.

The study will entail an in depth interview with one institute dean, three TVET trainers and three department heads currently working at your institute. The interview mainly focuses on the practices of TVET curriculum design and development processes. Date of the interview will be arranged on mutually agreed upon date and time which will last for one and half hours for each interviewee.

The benefits of this study lies on its contribution in providing clear understanding to policy makers , curriculum developers, implementers and stakeholders by providing vital information on issues in relation to TVET curriculum design and development in the country.

The study has no any kind of potential risks at all. There will be no reimbursement or any incentives for participation in the research. Feedback procedure of the result of the research will entail organizing workshop/seminar/discussion forum.

*If you need further information on this research you can contact my supervisor- Professor Akwasi Arko-Achemfuor (*aachea@unisa.ac.za*) at University of South Africa (UNISA).*

Yours sincerely,

_____

Yadessa Tolossa Woyessa (Researcher)

UNISA college of education

APPENDIX L:A LETTER REQUESTING CONSENT FOR OFFICIALS AT FEDERAL TVET AGENCY OF ETHIOPIAN TO PARTICIPATE IN INTERVIEW

Date _____

A letter requesting consent for officials at Federal TVET Agency of Ethiopian to participate in interview

Dear _____

I, Yadessa Tolossa Woyessa, a PhD student at the University of South Africa is conducting a research under supervision of Professor Akwasi Arko-Achemfuor, in the College of Education. I am inviting you to participate in a study entitled "Assessing the Practices of Technical and Vocational Education and Training (TVET) Curriculum Design and Development in Ethiopia".

This study is expected to collect important information that could contribute in providing clear understanding to policy makers, curriculum developers, implementers and stakeholders by providing vital information on issues in relation to TVET curriculum design and development in Ethiopia.

Two participants are selected from your organization and you are invited because of your responsibility, expertise and experience you have on TVET curriculum design and development processes in the country. I obtained your contact details from Ethiopian Federal TVET Agency Public Relation and Communication Office.

The study will assess the practices and challenges encountered in the processes of TVET curriculum designing and will suggest possible solutions for the problems investigated. Hence, I would like to get your views, understandings and opinions on the topic under investigation through in-depth unstructured interview. You will be benefited from the study in a way that your presence in the study can contribute to the scientific community.

The interview will take approximately a maximum of one and half hours to take place at a mutually agreed upon date, place and time. Your participation in this study is voluntary. You may decide to withdraw from this study at any time without any negative consequences. All information you provide will be kept confidential. In order to secure its confidentiality your name will not be appear in the research report and publication. The result will be reported in aggregate form. However, in some cases, anonymous names might be used, with your permission. You have the right to insist that your name will not be recorded anywhere and that no one, apart from the researcher and identified members of the research team, will know about

your involvement in this research **OR** Your name will not be recorded anywhere and no one will be able to connect you to the answers you give. Your answers will be given a code number or a pseudonym and you will be referred to in this way in the data, any publications, or other research reporting methods such as conference proceedings.

If you need further information which would facilitate your decision to participate in the interview, please, do not hesitate to contact me through +251 911 451756 or e-mail yadetole@gmail.com.
*If you need further information on this research you can contact my supervisor- Professor Akwasi Arko-Achemfuor (*aachea@unisa.ac.za*) at University of South Africa (UNISA).*

Thank you for taking time to read this information sheet and for participating in this study.
Thank you.

Yadessa Tolossa Woyessa
Researcher

UNISA | college of education

APPENDIX M:CONSENT LETTER FOR TVET OFFICIALS AT REGIONAL NATIONAL STATES TVET AGENCY

Date _____

A letter requesting consent of TVET officials at Regional National States TVET Agency to participate in in-depth unstructured interview

Dear _____

I, Yadessa Tolossa Woyessa, a PhD student at the University of South Africa is conducting a research under supervision of Professor Akwasi Arko-Achemfuor, in the College of Education. I am inviting you to participate in a study entitled "Assessing the Practices of Technical and Vocational Education and Training (TVET) Curriculum Design and Development in Ethiopia".

This study is expected to collect important information that could contribute in providing clear understanding to policy makers, curriculum developers, implementers and stakeholders by providing vital information on issues in relation to TVET curriculum design and development in Ethiopia.

Two participants are selected from your organization and you are invited because of your responsibility, expertise and experience you have on TVET curriculum design and development processes in the country. I obtained your contact details from your Regional TVET Agency Public Relation and Communication Office.

The study will assess the practices and challenges encountered in the processes of TVET curriculum designing and will suggest possible solutions for the problems investigated. Hence, I would like to get your views, understandings and opinions on the topic under investigation through in-depth unstructured interview. You will be benefited from the study in a way that your presence in the study can contribute to the scientific community.

The interview will take approximately a maximum of one and half hours to take place at a mutually agreed upon date, place and time. Your participation in this study is voluntary. You may decide to withdraw from this study at any time without any negative consequences. All information you provide will be kept confidential. In order to secure its confidentiality your name will not be appear in the research report and publication. The result will be reported in aggregate form. However, in some cases, anonymous names might be used, with your permission. You have the right to insist that your name will not be recorded anywhere and that no one, apart from the researcher and identified members of the research team, will know about your involvement in this research **OR** Your name will not be recorded anywhere and no one

will be able to connect you to the answers you give. Your answers will be given a code number or a pseudonym and you will be referred to in this way in the data, any publications, or other research reporting methods such as conference proceedings.

If you need further information which would facilitate your decision to participate in the interview, please, do not hesitate to contact me through +251 911 451756 or e-mail yadetole@gmail.com.
*If you need further information on this research you can contact my supervisor- Professor Akwasi Arko-Achemfuor (*aachea@unisa.ac.za*) at University of South Africa (UNISA).*

Thank you for taking time to read this information sheet and for participating in this study.
Thank you.

Yadessa Tolossa Woyessa
Researcher

UNISA | college of education

APPENDIX N: CONSENT LETTER TO TVET COLLEGE DEANS

Date _____

A letter requesting consent of TVET College deans to participate in In-depth unstructured interview

Dear _____

I, Yadessa Tolossa Woyessa, a PhD student at the University of South Africa is conducting a research under supervision of Professor Akwasi Arko-Achemfuor, in the College of Education. I am inviting you to participate in a study entitled "Assessing the Practices of Technical and Vocational Education and Training (TVET) Curriculum Design and Development in Ethiopia".

This study is expected to collect important information that could contribute in providing clear understanding to policy makers, curriculum developers, implementers and stakeholders by providing vital information on issues in relation to TVET curriculum design and development in Ethiopia.

An institute dean is selected from your organization and you are invited because of your responsibility, expertise and experience you have on TVET programmes directing. I obtained your contact details from your Regional TVET Agency Public Relation and Communication Office.

The study will assess the practices and challenges encountered in the processes of TVET curriculum designing and will suggest possible solutions for the problems investigated. Hence, I would like to get your views, understandings and opinions on the topic under investigation through in-depth unstructured interview. You will be benefited from the study in a way that your presence in the study can contribute to the scientific community.

The interview will take approximately a maximum of one and half hours to take place at a mutually agreed upon date, place and time. Your participation in this study is voluntary. You may decide to withdraw from this study at any time without any negative consequences. All information you provide will be kept confidential. In order to secure its confidentiality your name will not be appear in the research report and publication. The result will be reported in aggregate form. However, in some cases, anonymous names might be used, with your permission. You have the right to insist that your name will not be recorded anywhere and that no one, apart from the researcher and identified members of the research team, will know about your involvement in this research **OR** Your name will not be recorded anywhere and no one will be able to connect you to the answers you give. Your answers will be given a code number

or a pseudonym and you will be referred to in this way in the data, any publications, or other research reporting methods such as conference proceedings.

If you need further information which would facilitate your decision to participate in the interview, please, do not hesitate to contact me through +251 911 451756 or e-mail yadetole@gmail.com.
*If you need further information on this research you can contact my supervisor- Professor Akwasi Arko-Achemfuor (*aachea@unisa.ac.za*) at University of South Africa (UNISA).*

Thank you for taking time to read this information sheet and for participating in this study.
Thank you.

Yadessa Tolossa Woyessa
Researcher

UNISA | college of education

APPENDIX O: CONSENT LETTER TO DEPARTMENT HEADS

Date _____

A letter requesting consent of department heads to participate in In-depth unstructured interview

Dear _____

I, Yadessa Tolossa Woyessa, a PhD student at the University of South Africa is conducting a research under supervision of Professor Akwasi Arko-Achemfuor, in the College of Education. I am inviting you to participate in a study entitled "Assessing the Practices of Technical and Vocational Education and Training (TVET) Curriculum Design and Development in Ethiopia".

This study is expected to collect important information that could contribute in providing clear understanding to policy makers, curriculum developers, implementers and stakeholders by providing vital information on issues in relation to TVET curriculum design and development in Ethiopia.

Three participants are selected from your institute and you are invited because of your responsibility, expertise and experience you have on leading TVET programme as a department head in your institute. I obtained your contact details from your institute Public Relation and Communication Office.

The study will assess the practices and challenges encountered in the processes of TVET curriculum designing and will suggest possible solutions for the problems investigated. Hence, I would like to get your views, understandings and opinions on the topic under investigation through in-depth unstructured interview. You will be benefited from the study in a way that your presence in the study can contribute to the scientific community.

The interview will take approximately a maximum of one and half hours to take place at a mutually agreed upon date, place and time. Your participation in this study is voluntary. You may decide to withdraw from this study at any time without any negative consequences. All information you provide will be kept confidential. In order to secure its confidentiality your name will not be appear in the research report and publication. The result will be reported in aggregate form. However, in some cases, anonymous names might be used, with your permission. You have the right to insist that your name will not be recorded anywhere and that no one, apart from the researcher and identified members of the research team, will know about your involvement in this research **OR** Your name will not be recorded anywhere and no one will be able to connect you to the answers you give. Your answers will be given a code

numberor a pseudonym and you will be referred to in this way in the data, any publications, or other research reporting methods such as conference proceedings.

If you need further information which would facilitate your decision to participate in the interview, please, do not hesitate to contact me through +251 911 451756 or e-mail yadetole@gmail.com.
*If you need further information on this research you can contact my supervisor- Professor Akwasi Arko-Achemfuor (*aachea@unisa.ac.za*) at University of South Africa (UNISA).*

Thank you for taking time to read this information sheet and for participating in this study.
Thank you.

Yadessa Tolossa Woyessa
Researcher

UNISA college of education

APPENDIX P: CONSENT LETTER TO TVET TRAINERS

Date _____
A letter requesting consent of TVET trainers to participate in unstructured interview
Dear _____
I, Yadessa Tolossa Woyessa, a PhD student at the University of South Africa is conducting a research under supervision of Professor Akwasi Arko-Achemfuor, in the College of Education. I am inviting you to participate in a study entitled "Assessing the Practices of Technical and Vocational Education and Training (TVET) Curriculum Design and development in Ethiopia".

This study is expected to collect important information that could contribute in providing clear understanding to policy makers, curriculum developers, implementers and stakeholders by providing vital information on issues in relation to TVET curriculum design and development in Ethiopia.

Three participants are selected from your institute and you are invited because of your responsibility, expertise and experience you have on providing training in your institute. I obtained your contact details from your institute Public Relation and Communication Office.

The study will assess the practices and challenges encountered in the processes of TVET curriculum designing and will suggest possible solutions for the problems investigated. Hence, I would like to get your views, understandings and opinions on the topic under investigation through in-depth unstructured interview. You will be benefited from the study in a way that your presence in the study can contribute to the scientific community.

The interview will take approximately a maximum of one and half hours to take place at a mutually agreed upon date, place and time. Your participation in this study is voluntary. You may decide to withdraw from this study at any time without any negative consequences. All information you provide will be kept confidential. In order to secure its confidentiality your name will not be appear in the research report and publication. The result will be reported in aggregate form. However, in some cases, anonymous names might be used, with your permission. You have the right to insist that your name will not be recorded anywhere and that no one, apart from the researcher and identified members of the research team, will know about your involvement in this research **OR** Your name will not be recorded anywhere and no one will be able to connect you to the answers you give. Your answers will be given a code number or a pseudonym and you will be referred to in this way in the data, any publications, or other research reporting methods such as conference proceedings. If you need further information which would facilitate your decision to participate in the interview, please, do not hesitate to contact me through +251 911 451756 or e-mail yadetole@gmail.com.

*If you need further information on this research you can contact my supervisor- Professor Akwasi Arko-Achemfuor (*aachea@unisa.ac.za*) at University of South Africa (UNISA).*

Thank you for taking time to read this information sheet and for participating in this study.
Thank you.

Yadessa Tolossa Woyessa
Researcher

APPENDIX Q: CONSENT TO PARTICIPATE IN THIS STUDY

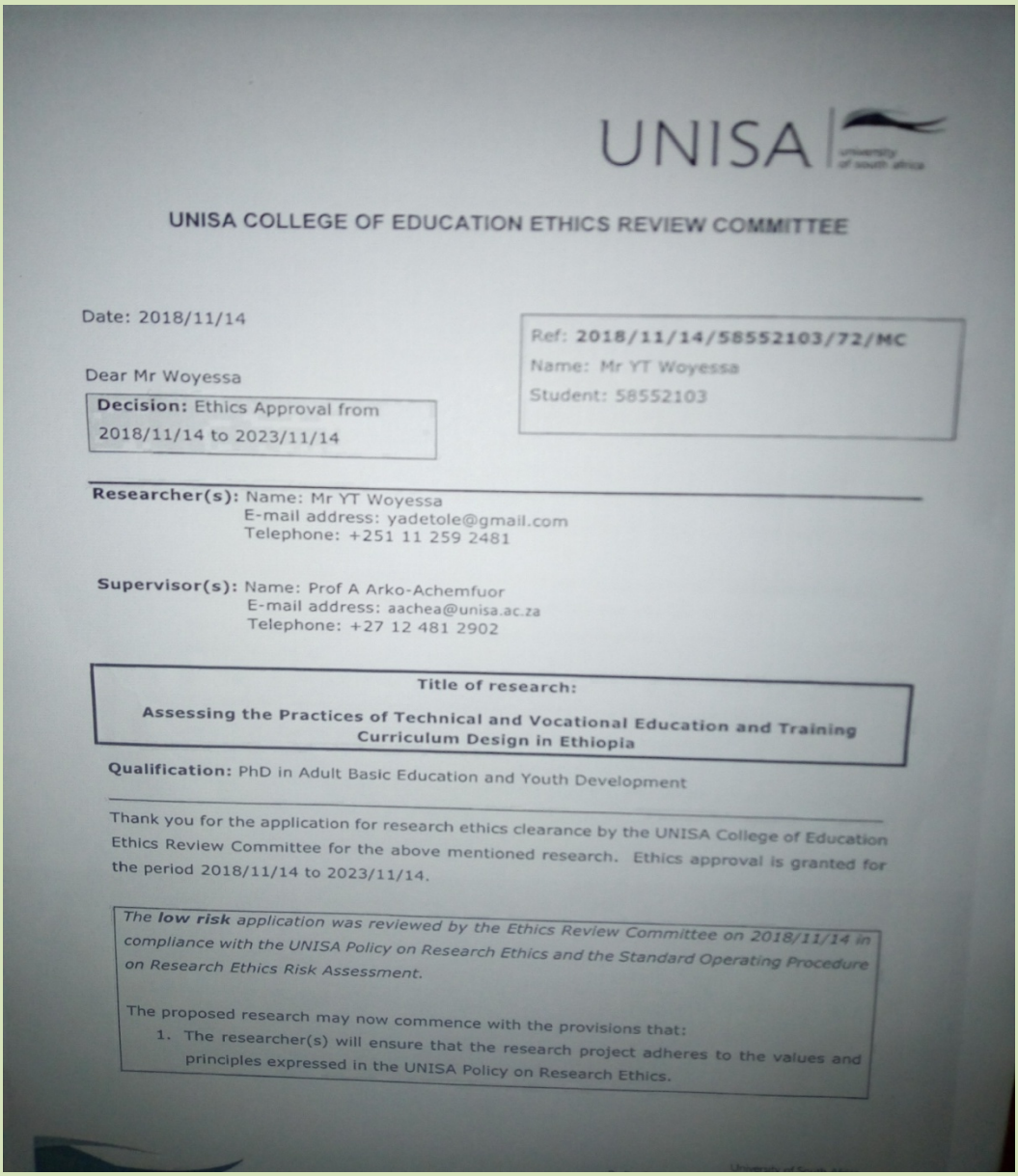
I, _____, confirm that the person asking my consent to take part in this research has told me about the nature, procedure, potential benefits and anticipated inconvenience of participation. I have read and explained to me and understood the study as explained in the information sheet. I have had sufficient opportunity to ask questions and am prepared to participate in the study.

I understand that my participation is voluntary and that I am free to withdraw at any time without any consequences. I am aware that the findings of this study will be processed into a research report, journal publications and/or conference proceedings, but that my participation will be kept confidential unless otherwise specified. In addition, I agree to the recording of the discussion and I have received a signed copy of the informed consent agreement.

Participant _____ _____ _____
Name Signature Date

Researcher Yadessa Tolossa Woyessa  _____
Name Signature Date

APPENDIX R: UNISA ETHICAL CLEARANCE



UNISA

UNISA COLLEGE OF EDUCATION ETHICS REVIEW COMMITTEE

Date: 2018/11/14

Ref: **2018/11/14/58552103/72/MC**
Name: Mr YT Woyessa
Student: 58552103

Dear Mr Woyessa

Decision: Ethics Approval from 2018/11/14 to 2023/11/14

Researcher(s): Name: Mr YT Woyessa
E-mail address: yadetole@gmail.com
Telephone: +251 11 259 2481

Supervisor(s): Name: Prof A Arko-Achemfuor
E-mail address: aachea@unisa.ac.za
Telephone: +27 12 481 2902

Title of research:

Assessing the Practices of Technical and Vocational Education and Training Curriculum Design in Ethiopia

Qualification: PhD in Adult Basic Education and Youth Development

Thank you for the application for research ethics clearance by the UNISA College of Education Ethics Review Committee for the above mentioned research. Ethics approval is granted for the period 2018/11/14 to 2023/11/14.

*The **low risk** application was reviewed by the Ethics Review Committee on 2018/11/14 in compliance with the UNISA Policy on Research Ethics and the Standard Operating Procedure on Research Ethics Risk Assessment.*

The proposed research may now commence with the provisions that:

1. The researcher(s) will ensure that the research project adheres to the values and principles expressed in the UNISA Policy on Research Ethics.

2. Any adverse circumstance arising in the undertaking of the research project that is relevant to the ethicality of the study should be communicated in writing to the UNISA College of Education Ethics Review Committee.
3. The researcher(s) will conduct the study according to the methods and procedures set out in the approved application.
4. Any changes that can affect the study-related risks for the research participants, particularly in terms of assurances made with regards to the protection of participants' privacy and the confidentiality of the data, should be reported to the Committee in writing.
5. The researcher will ensure that the research project adheres to any applicable national legislation, professional codes of conduct, institutional guidelines and scientific standards relevant to the specific field of study. Adherence to the following South African legislation is important, if applicable: Protection of Personal Information Act, no 4 of 2013; Children's act no 38 of 2005 and the National Health Act, no 61 of 2003.
6. Only de-identified research data may be used for secondary research purposes in future on condition that the research objectives are similar to those of the original research. Secondary use of identifiable human research data requires additional ethics clearance.
7. No field work activities may continue after the expiry date **2023/11/14**. Submission of a completed research ethics progress report will constitute an application for renewal of Ethics Research Committee approval.

Note:

The reference number **2018/11/14/58552103/72/MC** *should be clearly indicated on all forms of communication with the intended research participants, as well as with the Committee.*

Kind regards,

Prof MT Gumbo
CHAIRPERSON: CEDU RERC
Gumbomt@unisa.ac.za

pp **Prof W McKay**
EXECUTIVE DEAN
Mckayvi@unisa.ac.za