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# TVET Curriculum Mapping and Its Responsiveness to the Labour Market Demand the Case of the Building Construction Fields in Ethiopia

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**Abstract:** The primary aim of Technical and Vocational Education and Training (TVET) is to prepare for the country labour force meeting needs of the labour market, to enable people contribute to sustainable social, economic, environment and industrial development. Ethiopia has implemented the outcome-based Technical and Vocational Education and Training system since 2007. The Ethiopian outcome-based TVET system is a training delivery approach in which the labour market demand is identified and Occupational Standards (OS) are developed by industry and then the curriculum is developed based on the OS developed. Both the Ethiopian occupational standard (EOS) and the Technical and Vocational Education and Training (TVET) curriculum derived from the OS have similar architectural structural mapping. The main objective of this article was to assess how the TVET curriculum mapping in the case of the building construction fields in Ethiopia responds to labour market demand. The main data gathering instruments used in the study were interviews and document analysis. The interviews were held with the TVET stakeholders such as the Federal and Regional TVET curriculum development officials, the TVET college principals, the HoDs and TVET trainers. The documents that were reviewed included the Ethiopian National TVET Strategy and other TVET working documents such as the Ethiopian Occupational Standard and the TVET Curriculum Development manuals as well as other literature related to the study. It is found out that the curricula of building construction fields are the direct and one-to-one conversion of their respective Occupational Standards. The findings again revealed that the general TVET curriculum mapping of the building construction fields have not addressed the country's labour market demand and training needs. As a result of this, it was noted that the participants were not comfortable with the curriculum mapping of building construction fields laid by the Ethiopian TVET Authority. The paper concludes that the TVET curriculum should not necessarily have been the direct mirror and reflection of its OS when curriculum mapping was designed as it does not reflect the real societal and training needs of students.

**Keywords:** TVET, Curriculum, Curriculum Mapping, Labour Market Demand, Training Needs

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## 1. Introduction

The United Nations for Education, science and Culture organization (UNESCO) defines TVET 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 [16]. The primary aim of TVET is

to prepare the students for a country's labour force to meet needs of the labour market, to enable people to contribute to sustainable social, economic, environment and industrial development. Therefore, the TVET curriculum should be designed well to meet the needs of the industry and address the employers and the labour market demands.

Ethiopia has implemented the outcome-based Technical and Vocational Education and Training system since 2007. According to Shaorshadze & Krishnan, the outcome-based

TVET system is the system in which the curriculum is developed so that the trainees after completing the course should be able to perform the tasks given according to the performance criteria put in the occupational standard [8, 12]. According to the Ethiopian National TVET Strategy developed by the Ministry of Education, the Ethiopian Occupational Standard (EOS) is the national standard that defines the occupational requirements and expected outcome related to a specific occupation without taking TVET delivery into account [8]. According to MoE, the TVET curricula are developed based on the specific needs of its target groups and in compliance with the respective Ethiopian occupational standard (EOS) which are mapped and structured based on the labour market and TVET qualification framework of the country [8]. Accordingly, in the curriculum mapping approach, all TVET curricula have been developed based on the Ethiopian National Occupational Standards that are already laid down. It is indicated in the TVET curriculum development manual developed by MoE [6], that at the end of the learning module, the learner should 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).

Meanwhile the literature review and the empirical study point to the approach used by the TVET system not meeting its intended purpose by using the occupational standard as curriculum design and development strategy. This is so because it is clear that the stakeholders' interests are not being met. These include the labour market and employers as well as the students.

The TVET curriculum mapping discussed under 4.1 in this paper presents the types of occupations, hierarchical structure of the qualification levels in the occupations and/or related occupations and the pathways in the sector/sub-sector. TVET curriculum mapping is an architectural structure of the curriculum that portrays the horizontal and vertical organizations of the curriculum of different fields in the same trade. The curriculum mapping is the direct resemblance of occupational standard mapping developed by industry. That means the same structure of curriculum development was developed when occupational standards are converted to the respective curriculum.

The objective of the paper was to assess the TVET curriculum mapping and its responsiveness to the labour market demand in the case of the building construction fields in Ethiopia. The paper further investigated the views of respondents on appropriateness of the TVET curriculum mapping and levelling in the field of building construction for curriculum design and development in Ethiopia.

Accordingly, the papers ought answers for the following questions:

- 1) What is your view of using the curriculum mapping and levelling in the field of building construction for curriculum design and development in the Ethiopian TVET system?
- 2) What factors were considered when curriculum

mapping were designed in the Ethiopian TVET system?

- 3) Who were involved in the curriculum mapping development?
- 4) How far has the curriculum of the building construction fields met the labour market demand and training needs in Ethiopia?

## 2. Theoretical Framework

Ethiopia is pursuing outcome-based TVET system which is the premised on the assumption that all trainees would achieve a minimum predetermined level of accomplishment in each skill or knowledge area that enable them perform the required tasks. The MoE states in the Ethiopian National TVET Strategy that "The National Occupational Standards define the outcome of all training and learning expected by the labour market" [8]. The Ethiopian TVET curriculum is the direct copy and a reflection of the Ethiopian Occupational Standards. This approach was supported by the TVET working documents such as the National TVET Strategy [9] and the Curriculum Development Manual [6] indicating that TVET curricula need to reflect the specific context and conditions of occupational standard.

The general purpose of this paper was to assess the TVET curriculum mapping of the building construction fields in Ethiopia regarding its responsiveness to the labour market demand of the country. Hence, the paper assessed what factors considered when curriculum mapping was designed. The study investigated also how far each curriculum of the building construction fields met the trainees and societal training needs. Accordingly, the epistemological belief of the researchers is that the TVET programmes should address the learners, societal and industrial needs and the country's labour market demand. Tubsree and Bunsong argue that what makes TVET curriculum peculiar from the academic one is that TVET curriculum should be individual, society and employer oriented [15]. Hence, the paper is underpinned by educational theories around TVET curriculum design processes. As the paper specifically focuses on outcome-based TVET system, the theory to be selected should be in line with the outcome-based TVET system. Hence, the researchers have chosen the constructivist theory as the theoretical framework for this paper.

Constructivism is a theory in education that recognizes learners construct new understandings and knowledge, integrating with what they already know [13]. It is a theory that postulates that knowledge is constructed through actions and giving meaning to the reflection of their action.

The theory helped the researchers to assess the TVET curriculum mapping and its responsiveness to the country's labour market demand and trainees' needs in the Ethiopian TVET. According to constructivists, training institutes should teach 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 [14]. TVET should focus more on fulfilling the learners' and societal needs [19].

Constructivism also identifies each individual as a distinctive learner, with unique needs and abilities and therefore different techniques and methodologies are required for teaching them. As a result 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 [4]. To this end, from the constructivist viewpoint, it is important to consider the background and culture of the learner throughout the learning process. In this regard, Belbase points out the following as the major assumptions of constructivism theory in education:

- 1) students build up their own meanings based on what they already know;
- 2) different students may give different interpretations to the same thing;
- 3) there are many ways through which students can study;
- 4) studying is a social activity; and
- 5) studying is dynamic and context depended [2].

Therefore, the TVET programme should also endeavour to develop the curriculum that is responsive to learners' needs and the country's labour market demand. Therefore, the paper is premised from a constructivists' point of view to assess curriculum mapping and its responsiveness to the country's labour market demand and students' needs.

### 3. Research Design and Methodology

#### 3.1. Research Design

A research design is the researcher's detailed plan of the way in which the research is to be done [5]. According to McMillan and Schumacher a research design is the plan and the structure of the investigation that describes the conditions and procedures for collecting and analysing data [5]. The main objective of this study was to assess the curriculum mapping and its responsiveness to the labour market demand of the building construction fields in Ethiopia. The purpose of the research is to explore the meanings TVET stakeholders such as the TVET curriculum development officials, the TVET college principals, the HoDs and trainers attribute to the existing curriculum mapping in Ethiopia.

The paper followed qualitative research approach. Creswell [3] 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, or policies impact on the phenomenon.

As the way individuals experience and value things vary, workers have different viewpoints about a specific phenomenon. The paper, therefore, was undertaken within the interpretivist paradigm because the purpose of the study was to understand the lived experience of the curriculum developers and rely as much as possible on their views of the curriculum mapping processes in the Ethiopian TVET system.

#### 3.2. Population and Sampling Methods

The population of the study comprise all the principals/deans, trainers, HoDs of the TVET colleges that provide training in the fields of building construction fields in Ethiopia as well as the TVET curriculum development experts/officials at Federal and Regional state levels. The TVET curriculum development officials and experts at Federal TVET Agency and Regional TVET Agencies were responsible to occupational standard and curriculum design and development activities as they manage and oversee the occupational standard and curriculum design and development processes. Furthermore, deans of TVET colleges and department heads were selected to provide viable information because curriculum is designed at the training institute levels [6] and they coordinate the TVET curriculum design and development programmes. Trainers also participated in providing information because TVET curriculum is developed by trainers under the support of TVET institutes [6].

Of all regional states of Ethiopia, only three regional states were chosen for the study using convenience and purposive sampling methods. Hence, the South National Regional State, Oromia National Regional State and Addis Ababa City Administration were selected for the study using purposive and convenient sampling techniques.

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 3, TVET colleges deans were 3, department heads were 3, trainers were 6, with a total of 17 participants.. All of them were selected purposive sampling methods because they could give information in relation to TVET curriculum design and development processes in Ethiopia.

#### 3.3. Data Gathering Tools

This research used individual in-depth interview as one of the data gathering tools because it enabled the researchers' to assess as much as possible the practices of TVET curriculum design and development from the participants' lived experiences about the phenomenon. The second data gathering tool used in the study was document review and content analysis. Working and policy documents like TVET strategies, guidelines, manuals and curriculum frame works 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. The OS and the curriculum of the building construction fields were also used as documents for providing information.

### 4. Data Presentation and Analysis

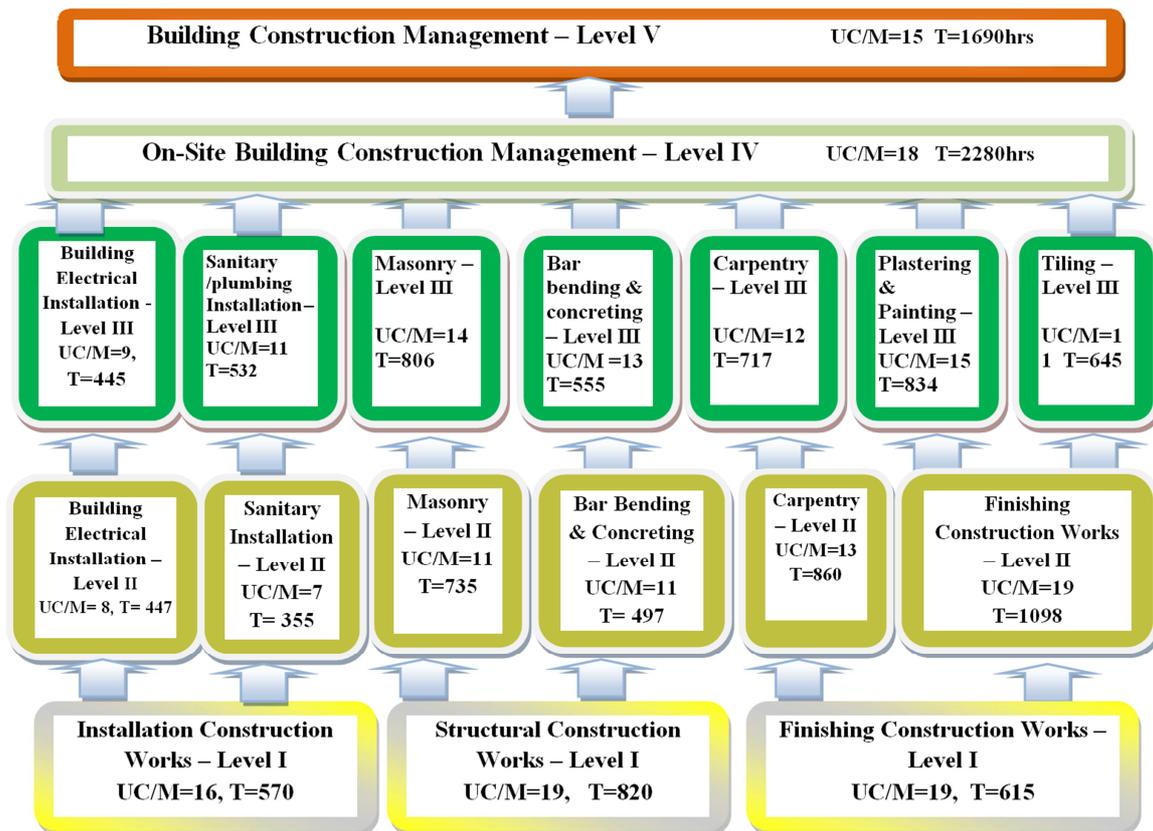
In this section, first what the curriculum mapping has documented is presented and subsequently what the respondents reflected on the issues under the investigation

were analysed.

**4.1. The TVET Curriculum Mapping of Building Construction Fields**

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 [8]. 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. As it is by no means possible to cater for issues of all the occupational fields in the study, the building construction fields are selected for the study. Furthermore, these building construction fields are some of the fields in which training is being offered in several colleges in Ethiopia. Therefore, much of the discussion and analysis are based on the TVET curriculum mapping of building construction fields depicted in Figure 1 below.



Source: MoE (2012)

Figure 1. The TVET curriculum mapping of building construction fields.

Figure 1 above illustrates curriculum structural mapping of building construction fields. As clearly illustrated in Figure 1 above, the 'Building construction fields comprises 18 occupations. As indicate in the figure, there are three occupations under level I, six occupations under Level II, seven occupations under Level III, one occupation under Level IV and one occupation under Level V.

As indicated in Figure 1 above, there are three root-occupations in the building construction fields. The root occupations in the building construction fields are named 'installation construction', 'structural construction' and 'finishing construction'. Each root-field is split into two another fields 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 1, there is no uniform structure in the architecture of the curriculum mapping. For instance, installation construction field Level-I is sub-divided into two

occupations at Level-II and III; whereas finishing construction field Level-I is further subdivided into two and three occupations at Level-II and Level-III respectively.

From Figure 1 above, several units of competences (UC) in an occupation and the time allotted for each curriculum derived from an occupation vary significantly. For instance, the number of UCs of installation construction field, structural construction field and finishing construction field are 16, 19 and 19 respectively. As one unit of competence was converted to one learning module, the number of units of competence and number of learning modules are equal. This means the number of modules (M) of installation field, structural construction field and finishing construction field curricula are 16, 19 and 19 respectively.

Regarding time allotments in the curriculum that were transformed from respective occupations, for example, installation construction field, structural construction field

and finishing construction field are 570 hours, 820 hours and 615 hours respectively. The time allotted range 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' is 2288 hours while the time allotted for 'Sanitary installation field Level II' is only 355 hours. In light of this, training providers raised their doubt if really curriculum developers allotted the training duration and time properly.

#### **4.2. Who Developed the Ethiopian TVET Curricula and Curriculum Mapping**

In the Ethiopian TVET system, when the issue/concept? Curriculum development is raised, it is inevitable to discuss about issues related to the 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:

- 1) 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 field –Level - I" is transformed to curriculum named "installation construction field – Level - I".
- 2) 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 1 above, the number of UCs for the OS of Installation construction fields –Level -I" is 16 and the number of modules of curriculum of Installation construction field – Level - I is 16.

According to the principles of the Ethiopian National TVET Strategy, OS should be developed by industry [9]. However, according to the responses obtained from the TVET curriculum development officials at federal level, 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 the 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.

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 neither developed nor manipulated the OS developed by Federal TVET Authority. In other words, they were using the model curriculum as it is.

Regarding curriculum mapping, the TVET curriculum development officials at federal level revealed that the curriculum developers do not have the mandate to design curriculum mapping. In other words, curriculum mapping is the direct reflection and replication of Occupational mapping laid by the industry.

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 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 fields" vary from 5 to 7. He further stated that the curriculum was developed through workshops under the auspices of Federal TVET Authority.

Regarding the general TVET curriculum mapping of building construction fields, there are diversified opinions among respondents. Most of the respondents did not agree with the current existing mapping (Figure 1 above) designed for building construction fields. In this regard, one of the HoDs suggested the following:

In order to design TVET curriculum mapping appropriately, the TVET Qualification Framework should have been revisited in a way to accommodate the training needs. It would be enough if the maximum level was pegged at level III as majority of competences are unnecessarily repeated and thus resulting to increase levels.

The view expressed by above by the HoD points to his doubt of the appropriateness of the TVET curriculum mapping meeting the labour market demand and was not comfortable with qualification levels 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. One of the trainers suggested the following regarding the curriculum mapping:

There should be one occupation as a single entity comprising fundamentals of installation, structural and finishing construction fields 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 is not comfortable with the existing mapping, it is the industry that has the mandate to adjust OS [8]. However, from the training provider's response, 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 that:

Combining building electrical installation field and plumbing/sanitary field 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 fields could be clustered and named 'structural construction' and would go on till upper level; and let construction carpentry, tiling, plastering and painting could be combined together and named 'finishing construction field' and then go on till upper level.

On the other hand, one trainer accepted the idea of building construction being divided in three main fields at Level I, but he did not concur with 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 field– Level I up to Level V, structural construction field– Level I up to Level V, and finishing construction field– 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 field and masonry field be combined beginning from Level I, while another trainer-respondent from another college preferred masonry field and concrete field need to be combined starting from Level II. There were also trainers who suggested that concrete field, masonry field and bar-bending field should be combined; and carpentry, tiling, plastering and painting fields to be combined and form one occupation at Level II.

From the different views expressed by the respondents above, we note that there are different opinions as to what the TVET curriculum mapping should look like. Although most of the trainers were not comfortable with the current curriculum mapping, nearly all of them agreed upon that it should be the training providers that should determine the training needs and design curriculum mapping. On the contrary, there were respondents specifically from curriculum development officers who were felt the existing practice is fine.. For instance, one of the curriculum development officials from Federal TVET Agency strongly argued that the existing mapping has no problem and hence, there is no need to search for alternative mapping approach.

#### **4.3. TVET Curriculum Levelling**

When the issue of TVET curriculum mapping is raised, it is inevitable to discuss the issue of occupational levelling as they are integral part of each other.

Regarding curriculum leveling, one of the curriculum development officials 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 so long as the training is provided properly.

However, according to the TVET curriculum development

officials, not all the outcome based curriculum should have begun from Level I. it is the industry sector that demands the minimum occupational qualification level required for that particular industry or sector.

Some of the respondents 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 to this, one of the TVET curriculum development officials pointed out that exiting at Level I and Level II was necessary if the industry demands so. In line with this line of argument, 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 field, installation construction field, and structural construction field can form a kind of group and can be organised to create their own businesses.

Regarding levelling, some of the trainers doubted the necessity of exiting at Level I and II for building construction field. 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 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 most of the respondents did not agree upon and are confused with was the issues of Level IV and V. Regarding Level IV in Figure 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 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 can be deduced that the training providers do not agree on the TVET curriculum levelling at Level IV. It could be corroborated from the curriculum mapping (Figure 1 above) that the trainees who have been trained in different occupations such as building electrical installation field, sanitary installation field, masonry field, bar-bending field, carpentry field, plastering and painting field, tiling field till Level III are obliged to join "On-site building construction management-Level IV together.

#### **4.4. The Curriculum Mapping Versus Training Needs and Labour Market Demand**

The first and foremost activity to be undertaken before

designing TVET curriculum is assessing training needs and its responsiveness to meeting the country's labour market demand. In the Ethiopian TVET system, the most repeatedly raised issue with regard to training needs are the 'labour market demand'. It is indicated in the Curriculum Development Manual [6] that curricula need to reflect the specific context and conditions of occupational learning.

TVET by itself does not create jobs, but it is beneficial when it is associated with the actual needs of labour market [1]. This is the reason why TVET programmes are said to be matched with current and future labour market needs. Regarding the extent to which training needs such as trainees' and societal needs are considered, some of the trainers indicated that most of the occupations are so fragmented that it was difficult to declare that the Ethiopian TVET curriculum addresses the trainee's needs/demand. In connection with labour market demand and training needs issues, some of the TVET college principals indicated that the new entrant TVET trainees were not assigned to the training field they aspired to pursue.

Regarding how far training needs such as trainees' and societal needs were considered when TVET curriculum was developed, one of the TVET curriculum development officials confessed as that:

In principle, when the outcomes-based curriculum is designed, it is the industry's needs that are taken primarily as a base, not the trainees' needs. Therefore, the curriculum be designed needs to be the one that is believed to enable the trainees, after the successful completion of specific course, be competent enough to perform the tasks indicated in the units of competences from which the curriculum is derived.

One of the TVET curriculum development officials stated that the Ethiopian TVET system should fulfil the industry's labour market demand than the trainees' needs. To support this view, one 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.

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; the appropriate system is catering for the industry's labour market demand. Some of 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 takes place in particular.

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. Some of the trainers pointed out that there was hidden political game taking place at the costs of labour market demand and training needs. McKernan points out that 'there are political and cultural reasons for the way curriculum is mandated and implemented at present' [5]. In this regard, the trainers indicated that the Ethiopian TVET curriculum is a matter of top TVET officials' interest. They further stated that they do not believe that the present curriculum they were using meets the present Ethiopian labour market demand.

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, some of the trainers indicated that they do not believe that the present curriculum they were using meets the present Ethiopian labour market demand. In the opinion of most training providers, 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 fields, for example, in the structural construction (combination of concrete field and bar-bending field) is preferable to finishing and installation' construction fields. Even from within structural construction fields, the bar-bending is preferable to concrete field.

Another trainer-respondent said the following on his part: Plumbing /sanitary installation/ field has less demand than building electrical installation field in the labour market. The field 'Finishing construction field' is the least preferred occupation as it can be learnt informally and is also susceptible to be performed by the mason and tile workers. The field 'finishing construction field' could have been integrated with masonry or structural construction field.

The above responses illustrate that some fields have less demand when they stand separately but have more demand when they are combined with others. One of the HoDs further explicated the following on this issue under discourse:

From an occupation named "Bar bending and concrete field Level II", it is only because of the presence of bar-bending, not the concrete field that the occupation has got demand in the market. Similarly, an occupational field named "Sanitary field 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.

The above response also indicates that some occupations had demand just because of the presence of one or two occupations it is clustered with. It also implies that as the industry does not employ two or three workers with different so called occupations at one work-site, two or three occupations.

## 5. Discussions

In order to discuss TVET curriculum design developed for building construction fields, it is vitally important to discuss the issues of the curriculum mapping of the building construction fields. In connection to the issue of curriculum mapping, there were no uniform responses from the participants as to which occupations should stand alone and which occupations need to be clustered to one another. Majority of the training providers were not comfortable with the existing TVET curriculum mapping and levelling systems. Some of the trainers did not agree with the idea that trainers do not have a say in deciding what the TVET curriculum mapping looks like.

The findings of the study pointed out that labour market demand should be the primary focus of the TVET curriculum. According to Werner, 'Outcomes-based TVET is the vocational education system in which training programmes are designed based on labour market demands' [18]. Yusoof adds that TVET is important to produce skilled workforce that meets labour market demands [19]. 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.

Another issue worth discussing in relation to labour market demand was the issue of training needs. 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.

As could be noted from the responses of the respondents, there is great variation in labour market demand within the building construction fields. These variations can primarily be attributed to the TVET curriculum mapping and levelling system being implemented. It emerged from the findings that some occupations of the building construction fields that have got demand could have them 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 at the expenses of labour market demand. This view is in line with, UNEVOC observation that it should be known what developing countries need to know and 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 [17]. Ornstein and Hunkins further remarked that if one neglects the philosophical, social, and political questions, he/she designs a curriculum with limited or confused rationale [11]. In addition, Oliva and Gordon 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 [10].

In the case of TVET curriculum design, trainees and societal needs can be fulfilled if and 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.

It emerged from the findings of the study 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 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 [20].

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 model TVET curricula of the building construction fields that were developed at federal level did not cater for the trainers and societal needs. Meanwhile, most of the curriculum development officials argued that the curriculum developed was societal need-based. Some of the trainers argued that since most occupations are so fragmented, it was difficult to declare that the Ethiopian TVET curriculum addressed either the trainees' needs or the labour market demand.

## 6. Conclusions and Recommendations

The study found out that there is strong association between curriculum mapping and labour market demand in that occupational standards must stem from labour market demand. Similarly, there is also bond 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 TVET curriculum mapping is raised, it is inevitable to raise the issue of occupational standards and qualification levelling as they are integral.

It emerged from the findings of the study 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 the respondents that graduates of some occupations could neither get job nor continue to further their learning just because the 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.

To this end, it is questionable 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 analyses cater 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. Therefore,

whenever TVET Occupational mapping is developed, the issues of labour market demand need to be considered. TVET curriculum should not necessarily be the direct mirror and reflection of each OS and the curriculum mapping should not necessarily resemble occupational mapping. In other words, TVET Occupational mapping should be what the industry constructs, and the curriculum mapping should be constructed by training authorities. When curriculum mapping is designed, it should be checked if it really reflects the training needs.

According to the findings of 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 even more. However, 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 levels increment. 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.

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