

Cooperative Training in the Ethiopian TVET Institutions: Adequacy, Usefulness and Challenges

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Abstract: This study set out to assess the adequacy, usefulness and challenges of cooperative training activities run by public TVET institutions in collaboration with local industries and/or enterprises. A descriptive survey design was employed to collect quantitative data from randomly selected trainees and purposively selected trainers (N=238), using a 38-item Likert Scale type questionnaire. Five TVET institutions were involved from two regional states and one city administration in Ethiopia. Percentage, mean score and t-test were used to analyze quantitative data. Results indicated that the cooperative training was adequate for the needs of trainees, and equally useful to the three stakeholders of the program. The study concluded that despite the adequacy and usefulness of the cooperative training program activities, some challenges of varying levels and types were identified as influencing the smooth operation of the program activities. Possible recommendations were forwarded for future practice and further research.

Keywords: *Cooperative Training, TVET Institutions, Trainee, Industry, Adequacy, Usefulness, Challenges*

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Introduction

Any society establishes TVET programs with the expectation that they would play triple roles in the economy of the country. They help improve individual livelihoods and facilitate further education, create employment opportunities for graduates, and meet the human power needs of the country's economy (Educkans Foundation, 2012). Although traditional TVET training existed for long time in Ethiopia (woodwork, metal work, tannery, weaving, etc.), modern TVET was introduced by the opening of Tegbare'id Poly Technique School in Addis Ababa in the 1940s (Zelalem, 2018) with the understanding of its potential for economic development. Despite the economic benefits, TVET training received marginal status in Ethiopia from both parents and students for many years (Melaku, 2017). Apathy to blue-collar jobs by graduates, streaming of low achievers into TVET programs, low self-efficacy of graduates, low awareness and negative attitude of the community towards manual skills, etc. have for long negatively influenced the growth and development of education and training in the TVET sub-sector. With the adoption of the Education and Training Policy by the Transitional Government of Ethiopia (TGE, 1994), TVET seems to have received more attention than it did during the preceding decades. The government's intent to strengthen TVET is reflected in the policy statement "*Parallel to general education, diversified TVET will be provided for those who leave school from any level of education*" (TGE, 1994, Article 3.2.8). The policy laid fertile ground for the establishment of public as well as private institutions in the country indicating the commitment of the government to creating conducive environments for private investors so that they open and run various educational and training institutions. The government of Ethiopia continued to show its commitment to the expansion of TVET by issuing Proclamation No. 391/2004 (FDRE, 2004). This proclamation declared the governance structure to be shared by the Federal Government as well as the Regional States. At the national level, the Ministry of Education is mandated to carry out three main tasks as related to TVET. Accordingly, the Ministry Issues Occupational Standards, accredits the training

institutions and issues Certificate of Competency after conducting competency assessment. Likewise, the regional TVET Agencies supervise the implementation of guidelines and procedures issued by the Federal Ministry, accredit institutions and issue certificates to graduates. To help guide efforts at translating the proclamation into effect, the government had also developed National TVET Strategy in 2008. The strategy aims:

to create a competent, motivated, adaptable and innovative workforce in Ethiopia contributing to poverty reduction and social and economic development through facilitating demand-driven, high quality technical and vocational education and training relevant to all sectors of the economy, at all levels and to all people (MoE, 2008, p. 12).

One of the specific objectives of the national TVET strategy is the creation of framework for all actors and stakeholders in the TVET system which has direct implication for cooperative training.

According to the Ethiopian TVET Strategy, apprenticeship is defined as job training carried out by a trainee in an organization to put to practice the technical and vocational education and training acquired in a training institution (FDRE, 2004). Apprenticeship training is also known as cooperative training. The national TVET Strategy describes cooperative training as follows:

Cooperative TVET is a mode of TVET provided in partnership between enterprises and TVET institutions. Usually, the bulk of practical training takes place in an enterprise, while theory and initial practical exposure is provided by the TVET institution (MoE, 2008, P30).

While the vocational technical education and training curriculum prescribes theoretical knowledge-based learning comprising of 30% to be held in the formal training institutions, the rest 70% practical training must take place in industries/enterprises. The practical skills training given in the training institutions are neither sufficient nor adequate to equip the trainees with the skills required in the world of work. The training equipment as well as supplies needed for skills development are hard to come by in the training institutions due to lack of financial as well as other resources such as skilled and competent trainers in the different fields. The training equipment, where available, does not entertain all students within a short period of time. To overcome the problem of scarcity, instructors would resort to using demonstration either conducted by the trainers themselves or groups of few students while the rest of the trainees remain mere observers and/or imitators. TVET based practical training of this type mostly suffers from lack of relevance to the needs of employers. Partnering with enterprises, therefore, becomes the only way out of the vicious circle of materials scarcity and lack of opportunities for practical skills training. Such partnerships are hoped to narrow the skills gaps of trainees and spending long time on job shadowing, observation, rehearsal, supervised rudimentary trial and then to help carrying out tasks with speed and accuracy.

The present study seeks to find answers to the following research questions as related to adequacy knowledge acquisition, skills development as well as attitudes and value formation among the trainees and usefulness of the practical skills development endeavor to the three parties involved in the cooperative training as well as the challenges encountered by the CTP activities.

Research Questions

1. How do the trainees and trainers perceive the adequacy of the cooperative training activities for the needs of the trainees?
2. How useful is the program to the trainees, the training institutions and the industry?

3. Is there statistically significant difference between trainees' and trainers' responses regarding CTP's adequacy and usefulness?
4. What were the challenges faced by the cooperative training scheme?

Review of Related Literature

The Concept of Cooperative Training

For many years in the past, graduates of vocational technical education programs in Ethiopia experienced unemployment basically for two reasons. On the one hand, their training programs were theory laden and in most cases devoid of practical application which ultimately led to the mushrooming of unskilled graduates in the labor market. Secondly, lack of relevant and adequate skills in turn prohibited the program graduates from being employed either in the formal or the informal sector of the economy. In addition, due to the limited number of employing organizations (industries) in the country, the supply of TVET graduates was by far exceeding the demand for skilled human power. This in turn worsened the unemployment situation.

Cooperative training is the method that combines on-the-job and regular instructions by relating the practical and theoretical aspect of the job, and the trainee acquires both technical skills and theoretical knowledge needed to perform a particular job. In this type of training, the trainee (also known as apprentice) often makes use of the same materials, equipment and machines employed in the actual workplace. He/she is exposed to the same real environmental constraints under which the activity is operated (Abeguki, *et al.*, 2014). The trainee is coached by a person performing the job in a particular job position and also assisted by a designated supervisor who will involve in assessing competence and capabilities formed by the apprentice during the attachment period. Similarly, Engeetou (2017) contends that the core idea of such training is 'learning by doing' where the supervisor or the more experienced employees show the trainee how to carry out a specific task. Following

the directions of the supervisor, the apprentice takes the role over and performs out the task while the supervisor observes and coaches.

According to an unpublished paper by Otchia and Yamada (2021) an interesting point of a cooperative TVET is that its delivery serves as a means of increasing relevance and facilitating transition of graduates from school to work. The cooperative training is a practical skills development scheme offered through the cooperation between industries/enterprises and training institutions, whereby 70 percent of the training content is provided in the organizations and 30 percent in the vocational training institution.

It is an activity that helps the trainee get acquainted with work where he/she directly interacts with experienced workers and the work procedures to test theory in practice. It has three-fold advantages - for the trainee, the training institution and the hosting organization. The trainee gets practical inputs for theoretical lessons and also sees relations and/or differences between classroom lessons and workplace realities. MoE (2008) claims that trainees, when exposed to the apprenticeship program, would come into direct contact with the world of work and learns the occupational practice in real life situations. Practical training, according to Alipou and associates (2009), pervades every level of a country's economy from national, to company as well as the individual whose skills are enhanced and as a result lead to improvement of their position in the workplace. Secondly, the hosting organization gets cheap labor for its activities and also grasps the opportunity to know and recruit better able and qualified workforce that fills vacant positions (Spaulding and Martin-Caughey, 2015) so as to carry out the tasks desired by work environment. Thirdly, the training institution receives feedback on the effectiveness of its training program and modes of delivery.

Proclamation No. 391/04 in its "Part Three" determines roles and responsibilities of the three parties involved in cooperative training. Article 21 (8) of the proclamation stipulates that the organization selected

for providing apprenticeship training would be responsible to give feedback “by inspecting the skill that the trainee acquired and forward opinion to the concerned organ as to the competency of the institution” (FDRE, 2004). On top of this, the hosting organization also takes part in evaluating the trainees’ performance through completing evaluation forms specifically prepared for this purpose. Providers of apprenticeship programs also contribute to the further development of the TVET institutions and lessen their financial burden (MoE, 2008) as the institutions fail to invest in expensive machineries, equipment, materials and supplies needed for practical training.

According to Shaorshadze and Krishnan (2012), TVET institutions are charged with the responsibility of identifying potential employers so that they could provide apprenticeship experience for the TVET trainees. Despite the provision of Article 21 (9) in the TVET Proclamation that underlines the importance of cooperation with the institution, more often than not, the effort was successful with employers in the government sectors while others stood against this practice and even considered the trainees as burden to their operations.

Engaging employers in cooperative training is an important strategy for pre-service and in-service workforce development programs. It can help align programs with employer needs so participants can secure jobs after completion of their training (Barnow and Spaulding 2015; Maguire *et al.* 2010). Cooperative Training programs are means of building and strengthening relationships between employers and training institutions. Furthermore, such programs are also channels for promoting relevance of the training curricula to the needs of the industry.

Cooperative training is critical for promoting quality and relevance of the training programs of the institutions. Omitting such program activities from the curriculum of TVET institutions often leads to training that is ineffective, inefficient, or unnecessary (Foshay & Tinkey, 2007).

The overall purpose of cooperative training is assisting the individual trainee to get opportunity for testing theoretical knowledge gained from the training institution in the actual workplace. While participating in such programs, the trainee makes relationship and/or identifies differences between the two thereby constructing new knowledge and ways of doing things. It is also a strategy which brings the training institution and the employer together so that each party shares its expectations that could be met through joint planning.

Operational Definitions of Terms

Cooperative Training: A practical training carried out in the hosting enterprises/industry. Terms such as “apprenticeship” and “on-the job training” are also used interchangeably.

TVET Institutions: Post-secondary learning institutions that provide theoretical and practical skills training to trainees.

Industry: Any public and/or private company that hosts trainees from TVET institutions and provides practical skills training to them. Terms such as employing organization, company, and enterprise are interchangeably used for industry.

Historical Development of Vocational Education and Training in Ethiopia

Although modern education in Ethiopia had its roots beginning 1908 with the official opening of Menelik II School, it was after three decades that formal vocational schools appeared on the educational scene of the country. According to Berhanu Dibaba *et al.* (1988), the 1935 Italian invasion massacred the young Ethiopians who had been trained earlier, and imported Italian artisans and technicians to develop its colonial economic and social infrastructures. The defeat of the Italian force and the departure of the technicians, however, created the gap for skilled human power in the modern economic sector (Berhanu, *et al.* 1988:45).

The restoration of the Imperial power was a characteristic turning point in the birth of technical vocational education in Ethiopia towards the beginning of the 1940s. To meet the demand for skilled technicians in the industrial sector, as Teshome (1979) points out, the Addis Ababa Technical School was established in 1943. The school underwent several re-organizations from time to time in terms of educational structure, curriculum and language of instruction.

Established in 1945, and offering a four year course in modern concepts of business practice, the Commercial School of Addis Ababa came into being as a second vocational school in the country. One year later in 1946, Ambo Agricultural School was opened and remained at secondary level until 1951.

Besides these, there were also other vocational schools operated by other ministries. Such schools include the Telecommunications Training School, the EELPA Training Institute, the Ethiopian Airlines and Air Force Training Schools, Nursing Schools, etc. (Teshome 1979:59-61). Moreover, there were also other vocational schools run by private organizations and missionaries.

After the 1974 Ethiopian Revolution, the Ministry of Education attempted to introduce a system of comprehensive secondary school where both academic and vocational subjects such as Agriculture, Book-keeping, Home economics, and Productive technology were taught to students beginning from grade 9. However, the vocational courses offered were entirely theoretical and could not meet their objectives mainly due to lack of human material and financial resources.

With intent to establish vocational schools in the regions, the Ministry of Education had introduced a program of 10 + 3 vocational/technical systems. Up to 1994, there were 17 such schools in different parts of the country. Students were admitted to these schools from grade 10 and received both academic and vocational /technical subjects for three years. As stated by MOE, the students were selected and admitted to

these schools according to their interest, abilities and achievements upon completing grade 10 (MOE, 1981:186).

According to the current Education and Training Policy of Ethiopia, vocational/technical schools would give training to those who after completing grade ten do not continue general education. Immediately after the policy went operational, the MOE established 25 Skill Development Centres throughout the regional states, which offer technical training to those who have completed grade 12. With the implementation of the curriculum that came into being following the advent of the Education and Training Policy (TGE, 1994), the skills development centers turned into TVET institutions and continued their services by admitting grade ten graduates. As reported by Otchia and Yamada (2021), up to 2014, the number of TVET institutions had reached over 1,300 while enrolment went beyond two million.

TVET Research in Ethiopia

Research in the area of technical vocational education in Ethiopia seems to have received little emphasis. This might be the reflection of the poor attention given to the TVET sub-sector in the Ethiopian Education system. The society's negative attitude towards manual work in favor of white collar jobs, limited access to the training institutions owing to their scarcity, lack of diversification of the economy, etc. have contributed to the marginal position accorded the TVET sub-sector. One may speculate that such neglect had de-motivated researchers making them lose interest in studying the field at the desired level. Since the introduction of modern education to the country in 1908, there had been only 17 technical vocational schools in the country for long time in Ethiopia. Following the adoption of the Education and Training Policy by the Transitional Government of Ethiopia in 1994, TVET got recognition which led to expansion of institutions throughout the country.

At the same time, the sector also began attracting researchers. For example, Mesay and Teferi (2016) investigated the 'Implementation of Technical and Vocational Training Strategy in Agricultural Sector in Ethiopia: Practices, Challenges and the Way Forward'. Findings indicate that the role of ATVET in technology transfer, productivity enhancement, agricultural commercialization, rural economic growth and environmental protection is vital. However, its realization has been constrained by several adverse factors such as graduates' lack of practical skills among others. Eden (2012) analyzed 'Labor Outcomes of TVET in Ethiopia: Implication of Challenges and Opportunities in Productive Self-employment of TVET Graduates.' Her findings indicate that TVET graduates are highly involved in the labor market as potential employees and government wage employees rather than engaging in job creation activities which was envisaged by the national TVET program.

Getachew's (2016) study titled, 'Competence-Based Technical-Vocational Education and Training in Ethiopia' found that the Ethiopian education system, including TVET lacked consistency in political governance that affected stability of policy direction despite the introduction of TVET since the 1940s.

Melaku's (2019) study which focused on identifying practices of quality assurance in the TVET system of the Amhara Regional State found that "the TVET quality in the study area has been persistently stricken with meager supply of necessary resources" (p. 80). Such lack of resources reflects back on the quality of training and low level of skills development making the graduates less relevant to the needs of enterprises that could offer wage employment and/or poses obstacles to attempts at becoming self-employed.

Nahom (2006) studied the streaming of students to TVET programs in Ethiopia by drawing data from two institutions in Addis Ababa. His findings suggested that lack of information on the benefits of vocational training, limited progression to tertiary level education and the

procedures of streaming students influenced students' choices to take up training in TVET field. Melaku (2017) studied graduate employability and career decision, the findings of which showed that occupational prestige, interest in higher qualification levels, as well as preferences for paid employment were among the driving forces for employment decisions among TVET graduates of the Amhara region. Abebe (2017) studied policy-practice gaps relating to students with disabilities in Ethiopia and found that the issues of strategy, prioritization, and implementation were not adequately dealt with concerning persons with disabilities.

The above mentioned Ethiopian studies much dwelt on identification of factors that negatively affected the expansion and relevance of TVET training in the country. Lack of policy directions, failure to involve persons with disability, lack of awareness about the benefits of TVET and disinterest on the part of potential trainees to join manual jobs, preferences for paid employment, shortage of training resources and failure of training institutions to equip trainees with practical activities, etc., affected the achievement of TVET objectives in Ethiopia. Involving trainees in the cooperative training programs is hoped to minimize much of these challenges by bringing the three parties (enterprises, institutions and trainees) together for mutual benefits.

Method

A descriptive survey design was employed to collect quantitative data from trainers, and trainees (N = 238). A total of 5 TVET institutions drawn from two regional states (Amhara, Oromia) and one city administration (Addis Ababa), Ethiopia were involved in the survey. The two regional states and the city administration were purposively selected with the belief that they represent large geographic areas in the country. The five TEVT institutions were selected by using lottery method (simple random sampling) from among those having ease of transport access. Trainees (N=190) and Instructors (N=48) were selected using random-sampling as well as purposive techniques respectively from different fields of

study. To go about the selection, list of trainees was obtained from their respective departments and every sixth person in the list was selected systematically as member of the sample until the required sample size was secured. Instructors who supervised these trainees during the cooperative training period were purposively selected with the belief that they would have a similar encounter of the CTP site as their students. A survey questionnaire containing a total of 38 Likert Scale type items (divided into 4 subscales) was adapted and modified from the work of Donkor, Nsoh, and Mitchual (2009). The original questionnaire contained 44 items each of which was rated over 4-point scale. The adapted instrument was modified by omitting six items that do not relate to the research questions. In addition, the original instrument that had 4 scale points was modified to a three Likert Type scale for easy comparison of respondents' views. The scores on the scale ranged from 1 to 3 with the expected mean being 2.00. The survey questionnaire thus modified has 5 parts. Part one intended to collect demographic data. Part two contained 9 items that measured the adequacy of the cooperative training for the needs of the trainees. Part three contained 10 items that measured the usefulness of the program to the stakeholders (trainees, the TVET institutions and the industry). Part four, with 8 items, measured the extent of skills acquisition by the trainees during the cooperative training attachment, while part five contained 11 items meant to identify types and levels of challenges encountered by the trainees during the cooperative training period.

Reliability analysis was calculated for the 38 items in the questionnaire to determine the acceptability of the instrument for collecting data in the local context by administering the questionnaire to 30 trainees and 10 trainers on one TVET institution found in Addis Ababa. The analysis then produced Cronbach's Alpha reliability of 0.74. According to Cortina (1993), a Cronbach's alpha result of 0.70 is acceptable, 0.80 or greater is preferred, while higher is better. Therefore, the researchers were convinced that the questionnaire was reliable to measure and produce similar results when used with different groups as the calculated Cronbach Alpha reliability was greater than 0.70 which is acceptable.

240 copies of the questionnaire were distributed to the two groups of respondents with assistance from coordinators of cooperative training programs in each institution. Of these, 238 completed questionnaires were collected back with 99% return rate. Two of the instructors belonging to two TVET institutions did not complete and submit by the time we collected the filled in questionnaire

Each item in the four sub-scales was rated over 3-point scale. The collected data were quantitatively analyzed using SPSS version 20 Software. Mean scores, independent sample t-test, and one-way ANOVA were used as techniques of analysis. Rejection of the null hypothesis was set at the .05 level of significance. Data were organized in the form of tables and interpretations made to arrive at valid conclusion.

Results

Data analyses were carried out in the order of the research questions.

1. *How adequate are the cooperative training activities for the needs of the trainees?*

Adequacy of the cooperative training program to the trainees was assessed using 9 items which seek to identify the level of adequacy of the program activities in terms of knowledge acquisition, attitude and value formation as well as development of technical skills by the trainees. **Item level analysis indicated over 93%** of the respondents witnessed that the cooperative training program was adequate in helping trainees acquire new knowledge that was never experienced during theoretical instruction at their respective institutions. It also created opportunity for testing previously acquired knowledge in practical hands-on situations. It was reported by a good number of the study participants that working in the apprenticeship environment enhanced the modification of previously acquired knowledge as the trainees got new inputs from workplace supervisors and/or experienced workers. The

cooperative training scheme was carried out with the prime objective of meeting enhancement of training quality and promotion of relevance of TVET to the requirements of the labor market. In addition, the scheme is hoped to facilitate the future transition from school to work and employability of graduates.

For about 89% of the research participants, beyond assisting the trainees sharpen manipulative skills already acquired in the institutions, the industrial attachment was adequate in exposing the trainees to new technologies, machines, equipment and materials as well as their functions and operations. On top of this, 84% of the respondents claimed that the practical performance at the workplace required the apprentices to apply safety rules and procedures taught to them during the beginning of the cooperative training activities.

The Cooperative training program was also adequate in helping trainees develop positive attitude towards work and form habits of working in teams which in turn lead to developing team spirit and interpersonal skills in the trainees. Item level analysis showed that the CTP was also rated as adequate by 72% of the respondents in making trainees develop self-confidence to carry out production tasks independently of mentors or workplace supervisors. Attainment of interpersonal skills is another form of attitude development which was rated as adequate by 68% of the trainers and trainees alike. One aspect of developing interpersonal skills is oral communication between workplace staff and the trainees. According to most of the respondents (82%), the program was greatly adequate in building communication skills. Such skills have the value of promoting personal growth and development for each individual, as well as the quality of skill which trainees can transfer to their future career.

Table 1: Adequacy of CTP to trainees

Adequacy for		Less than Adequate	Adequate	More than Adequate
Knowledge acquisition	f	66	141	31
	%	(28)	(59)	(13)
Skills development	f	34	186	18
	%	(14)	(78)	(8)
Attitude formation	f	62	130	46
	%	(26)	(55)	(19)

Overall, the cooperative training program activities were rated as adequate and more than adequate by 72%, 86% and 74% for knowledge acquisition, skills development and attitude formation respectively. It can thus, be concluded that the cooperative training activities were strong enough in meeting their objectives of developing the knowledge, attitude and skills of trainees who participated in the apprenticeship program. Enterprises are always expected to offer practical training through the provision of industrial knowledge, practical skills and work attitudes. The program, therefore, is helpful to the trainees in that they relate the theoretical lesson of the classroom with the reality in the hosting organizations. It also enables them to refine their previously acquired knowledge and form new understandings from their practical experiences at the workplace. Further, the program is judged sufficient for trainees to acquire both soft and hard skills they have never encountered before as it exposes them to new people and work culture, new and up to date materials, equipment and machines which are hard to come by in the TVET institutions. As trainees interact with experienced staff at the work site, they develop interpersonal communication skills and sharpen manipulative skills by working with new technologies. The cooperative training program was also judged good in promoting positive attitude towards work, development of self-confidence in handling tasks independently as well as formation of team spirit.

2. *How useful is the program to the trainees, the training institutions and the industry?*

Usefulness of the cooperative training was assessed using a ten-item subscale. Some of the items focused on determining the level of usefulness to the needs of the trainees. Others related to the industry while still some more measured the level of usefulness of the CTP to the hosting organization (industry). Concerning usefulness to trainees, about 89% of the study participants declared the program was useful in giving opportunities to trainees to apply theoretical knowledge and principles in real work environment. The trainees also developed specific occupational skills and knowledge of particular business organizations in which they were receiving the cooperative training. Such practical activities, according to 87% of the respondents, provided opportunities for interacting with workplace staff and supervisors on skill areas they had difficulty to perform some tasks. That means the trainees learned how to operate and work with new equipment and technologies by closely working with more skilled and experienced employees of the hosting organization.

While interacting with experienced staff, 90% of the study participants believed the trainees developed oral communication skills. In so doing, they became apt to get more socialized into workplace culture. In this respect trainees became well acquainted with rules, regulations, work procedures and methods of the hosting organization. Furthermore, 83% of the respondents believed that the program widened the view of the trainees concerning the link between their fields of study, the requirements of the workplace and the contribution of the industry to national economic development. In general, the trainees learned both hard (technical or practical) and soft (communication, team work spirit) skills. CTP activities also provided well-furnished learning environments for the apprentice where they demonstrated performances by doing assigned tasks using real equipment. Working in such environment is believed to be the best opportunity for learning as distinct from formal classroom instruction and simulated environments. The CTP facilitates

smooth transition from school to the labor-market because the trainees become more skilled and socialized into the culture of the work environment. The trainees may also find jobs easily after graduation if they are able to meet the requirements of the workplace during the apprenticeship program. Where there are no vacant positions at the end of the CTP session, trainees who have better performance may be shortlisted by the management of the industry and contacted for future employment opportunities.

With regard to usefulness of the CTP to the training institutions, well over 85% of the respondents believed the program was useful or more than useful in that the industrial attachment reduced cost of training which the institutions were practically unable to afford. The machines, materials and resources at the hosting organizations were made to serve achievement of program objectives without any additional expense. The use of such resources and facilities, according to 81% of the respondents, contributes to the enhancement of quality and relevance of the training curriculum to the needs of the industry or the employing organization.

Other than supervising and coaching trainees during industrial attachment, working staff of the employing organizations, according to about 34% of the respondents, may also assist in teaching parts of particular courses in the classrooms by talking to trainees about the nature and requirements of the job they are engaged in as well as preparing the graduating class for job interviews. Two-thirds (66%) of the respondents, however, rated such function of employees of the organizations as less useful implying that there was no such relationship and practice among the training institutions and employing organizations.

Training institutions through the industrial placement programs can build relationships with managers and employees working in the industry (86%) so that they enter into some form of relationship that paves ways for identifying potential employers for their graduates. Continued partnership may also help training institutions to generate financial resources from stakeholders.

For nearly 77% of study participants, recruiting employees directly from among participants of cooperative training institutions has advantage for employers in that it would help them reduce training costs on the one hand, and reduce turnover of those already trained and given jobs by the employers themselves, on the other. Employers can, therefore, fill vacant positions immediately by offering jobs to the CTP participants or by contacting the TVET institutions for more qualified and competent graduates.

The CTP is also useful to employers in that they get the opportunity of recruiting qualified applicants who meet their specific occupational needs. Through industrial attachments, employing organizations get the opportunity to judge the worth of the training program delivery and give feedback to institutions by completing evaluation forms for each individual trainee.

CTP provides opportunities for employers to directly recruit trainees who have developed work specific skills that may not be easily found in the local labor market. According to Susan, *et al.* (2016), it is also a means of retaining highly motivated workforce thereby building sense of belongingness and loyalty between the employee and the employer. Apprentices can help boost production and maximize profit that would benefit the hosting business firm through contribution of free labor.

Table 2: Usefulness of CTP to stakeholders

Usefulness to		Less than Useful	Useful	More than Useful	Missing
Trainees	F	40	184	5	9
	%	(16.8)	(77.3%)	(2%)	(3%)
Institution	F	39	160	39	-
	%	(16.4)	(67.2)	(16.4)	-
Industry	F	27	136	75	-
	%	(11.4)	(57.1)	(31.5)	-

Table 2 is a summary of the usefulness of the CTP to the stakeholders. 79% of the respondents asserted the program was useful or more than

useful to trainees. The cooperative training program gives trainees opportunities to apply and test the abstract theories and principles learnt in the TVET classrooms in simple practical ways by using the real tools and/or machines in a specific context. By combining theory with practice, the trainees can form new knowledge and understanding. Engagement in cooperative training is also useful to the trainees in that they interact and share experiences with workplace staff. In so doing, they develop communication skills by closely working and discussing with the employees they observe and work with. Furthermore, the trainees could also understand the relationship between their theoretical as well as practical training on the one hand, and the contribution their training would make to the national economy on the other.

As it is evident from Table 2, over 83% of the respondents rated the practice of the cooperative training as useful or more than useful to the training institutions. The trainers get opportunities to supervise their trainees in the hosting organizations (workplace) and thereby reflect on their knowledge and skills which may help them refine their experiences for improved future actions. TVET institutions become cost effective by exploiting the latest and real materials available in the workplace. With TVET institutes lacking adequate equipment, enterprises which provide access to modern machines or hand tools will be appreciated by both TVET trainers and trainees because they complement the basic knowledge learned in TVET institutions with industry-based skills. Similarly, if the cooperative training follows the unit of competency learned in TVET, then it is likely that after completion; most of the trainees will be able to master the theoretical and practical aspects of the competencies.

More than 88% witnessed the usefulness of the program to the hosting organizations. Based on these data, it would be safe to conclude that the cooperative training program is equally beneficial to all parties involved in its delivery. As every member of the stakeholders draws multiple benefits, each party needs to contribute its level best to strengthen the program so that achievements of the CTP objectives are realized to the

fullest potential. Knowledge of these benefits is hoped to forge close work relations between the two organizations as well as the trainees who may enter into agreements that would legally bind their cooperation.

Table 3: Mean scores for usefulness by TVET institutions

Usefulness of CTP to	Mean of TVET institutions					Statistics	
	Sululta	Sebeta	Wingate	Entoto	Debreberhan	F	P
Trainees	2.3600	2.0878	2.2560	2.4703	2.3520	5.74	.000*
Institution	2.3429	2.0122	2.1900	2.3919	2.3067	3.86	.005*
Industry	2.3571	2.3171	2.3900	2.6351	2.4600	2.36	.054

*significant at the .05 level

Instructors and trainees of the five institutions unanimously agreed that the cooperative training was equally useful to the trainees, the TVET institutions and the industry. Their mean values are above the average of 2.00 when calculated out of 3.00 points. To find out whether or not the institutions differ significantly on their views towards the usefulness of the program to the three parties in the cooperative training program, analysis of variance (ANOVA) was computed (Table 3) for the five institutions involved in the study. Results showed that the program was significantly more useful to trainees ($F=5.76$; $P = .000$) and institutions ($F=3.86$; $P = .005$) compared to the industry. While the usefulness of the CTP to the three parties was justified by all institutions, Entoto TVET compared to Sebeta, viewed this issue more positively claiming it was more than useful to the trainees and the training institutions. Usefulness to the industry ($F =2.38$; $P = .054$) was not significant. This leads to the conclusion that trainees and trainers at the surveyed institutions have similar understanding about the benefit to industries that host the trainees for the practical training.

3. *Is there statistically significant difference between trainees' and trainers' responses on CTP's adequacy and usefulness?*

Table 4: T-test results for adequacy and usefulness of CTP

Variable	Group	N	Mean	T	P≤.05
Adequacy of the CTP	Trainees	186	2.37	.953	.342
	Trainers	48	2.29		
Usefulness of the CTP	Trainees	186	2.39	.468	.640
	Trainers	48	2.35		

Views of trainees and trainers were compared to see if they hold same or different perceptions concerning the adequacy and usefulness of the CTP. Both groups said that the program was more than adequate to the trainees and more than useful to the three parties to the partnership. In all cases, the trainees had better mean scores for adequacy and usefulness than did the trainers. Independent sample t-test was calculated for trainees and trainers to see if there were significant differences between mean scores on adequacy and usefulness of the cooperative training program run by the stakeholders. Although the trainees scored higher mean values for the two variables (adequacy and usefulness), the mean differences between trainees and trainers ($t=.953$; $p=.342$) for adequacy; and ($t=.468$; $p=.640$) for usefulness were not statistically significant at the .05 level. That means both trainees and trainers have similar understanding that the program was more than adequate for the trainees and more than useful to each of the participants (trainees, institutions and industries) alike.

4. *What were the challenges faced by trainees during the cooperative training?*

Although the cooperative training was adequate and useful, it was not implemented without difficulties. To understand the drawbacks that the activity encountered, list of possible challenges facing the program were presented to the study participants seeking their responses regarding

the level of challenges perceived by them. The challenges were of three levels: simple, mild and severe challenges.

Over one-third of the trainees and trainers perceived the program as posing severe challenges relating to the following points:

Feeling of fear that the trainees would cause some dangers in the workplace and/or damage machines, equipment, materials, etc. was one of the major challenges as reported by 36% the study participants. Companies are always profit-oriented and thus try to avoid loss of any kind including material, financial and/or time resources. They also expect compensation for lost materials and other resources, but the training institutions are not in a position to afford such cost. The very reason cooperative training was legally instituted was to compensate for the lack of the institutions by providing all necessary resources that would help trainees become practically skilled and competent. From among the study participants, 35% agreed that some industries or enterprises exhibited failure to identify relevant skills and knowledge the apprentice should gain during the practical training sessions. On top of the challenges mentioned above, some organizations demonstrated apathy to hosting trainees for they want to avoid compensation arising from injuries caused to trainees during practical training. Some others failed to understand the role cooperative training plays in the development of national economy. Industries' participation in cooperative training is totally voluntary that there is no legally binding agreement entered into between the industry and the TVET institutions. However, according to the TVET proclamation No.391 /2004, Article 13, agreement must be signed between the trainee, the TVET institution and the hosting organization by the time CTP starts in the organization. Such an agreement remains functional only for the period of the practical training at the industry/enterprise. TVETs are afraid that if they ask for signing agreement the industries would totally resist to accept trainees for the CTP.

Shortage of time to manipulate materials, machines and equipment in the workplace was one of the practical challenges witnessed by one-third (34%) of the respondents. Some industries or enterprises hosting the trainees for practical training assumed that the trainees were novices who could not produce the required amount or volume of output per unit time spent on the work. Some industries limited the time for cooperative training to only one month because they had to be fair to all institutions that send their trainees for similar training. The space they had for the practical training was limited to host students from two or more institutions including public universities. This situation contributed to the reduction of practical skills training time. As a result, the principle of 30% theory and 70% practice seems to have been violated.

For another one-third (34%) of the study subjects, in some organizations lack of access to machines, equipment and/or materials to work with are other type of challenges that constrain the effort at helping trainees become practically skilled. In most cases such organizations make the trainees spend much of the time on entry level skills than letting them carry out core tasks (e. g., cutting textile than engaging in sewing activities in garment factories; measuring and cutting activities than assembling or fixing materials in Micro and Small Enterprises engaged in metal and/or woodworks). Lack of access to machines and equipment is one of the major challenges faced by trainees from rural TVET institutions. This is aggravated by the large number of trainees running for the limited available facilities at the workplaces. Fair distribution of industries and/or enterprises is important to minimize the disparities among urban and rural TVET institutions. It is hoped that the expansion of industry villages and private investment in the regions would minimize the gap observed among urban and rural area TVETs as well as industry-trainee ratio in the future.

Lack of finance to cover transport costs for traveling to the workplace and back home is another obstacle to the smooth functioning of the practical training as reported by 35% of trainers and trainees. While there is no budget allocated for the trainees' transport, there is little money

made available for the trainers to go to the cooperative training sites to make regular supervision and follow up. Such a problem results in lack of interest on the part of the instructors in the follow up and supervision activities. Consequently, many of the instructors were seen spending less than half the time they were supposed to spend on supervision work.

In addition, trainees fail to reach the workplace in time due to inadequate transport services in Addis Ababa and some places in the regions. Punctuality is one of the requirements expected of an employee, and failure to demonstrate this might make industries lose confidence in the trainees. Trainees in the regional states incur unnecessary cost to rent houses in places accessible to the work site. Though very few, some of the rural trainees are thus forced to pay for two rented houses at the same time - one for regular residence around the TVET institution, and the other for temporary stay near the workplace when engaged in practical training. The trainees neither receive any kind of financial incentive from industries/enterprises nor do they get stipend from the TVET institutions/government.

The following were rated by more than 50% of the respondents as causing moderate challenges:

- Absence of open-mindedness among workers and/or supervisors (59%) in involving the trainees in practical activities;
- The organization's suspicion of trainees' commitment to the attachment program (58%);
- Lack of willingness by the organization to admit the trainee to the appropriate work unit (57%);
- Unavailability of the right kind of workplace supervisors (56%);
- Unavailability of the right kind of organization for their field of study and/or lack of willingness to accept trainees where available (56%);
- Absence of managerial/supervisory support to trainees in the middle of performing tasks (56%);

In general, challenges of different levels and types were noted to work against the smooth functioning of the development of skills by trainees through the cooperative training scheme. Despite their varying levels and types, the observed challenges have become obstacles to the achievement of CTP objectives.

The study found that the cooperative training run through joint participation of the Ethiopian TVET institutions and the industries was adequate in meeting the needs of the trainees in terms of modifying or fixing knowledge, forming and maintaining workplace attitudes and values, as well as equipping trainees with practical skills using same materials and technologies available in the actual production or service sites. Beyond proving adequate knowledge and skills as well as building positive attitudes in the trainees, the cooperative training was also found to be equally useful to the three parties.

Despite the reported adequacy and usefulness, however, challenges of different levels and various types militate against the smooth operations of the cooperative training undertakings. Few of them were perceived to be mild while others posed moderate to severe challenges. Fear of causing damages when working with machines, company failure in identifying areas of skills to be learnt by trainees, and shortage of finance to cover transportation cost for trainees were among the challenges perceived as severe by the participants. In terms of types, a general conclusion is that the challenges can be categorized into resource-related, attitude-related, motivational, and legal dimensions.

Recommendations

To facilitate the smooth operation of cooperative training activities and equip trainees with the desired knowledge development and application, as well as develop practical skills and good work habits, the following recommendations which guide future practice and research are forwarded.

- TVET institutions need to facilitate means of involving employers to serve as board members so that awareness about the need for cooperative training is created among relevant industries.
- TVET institutions need to involve employers in program design, implementation and evaluation plan to promote curriculum relevance and quality to the needs of the industry.
- The Ministry of Education may need to devise means of compensating for loss of equipment by employers through subsidies.
- TVET institutions need to get into agreement with employers to host reasonable number of trainees for cooperative training and hire graduates upon completion of their studies.
- The Ministry or the Regional TVET Agencies need to consolidate partnership among relevant stakeholders including TVET institutions, employers, job creation agencies and trade unions to facilitate smooth transition of trainees to the world of work.
- Future research needs to include the view of employing organizations as well as industries or enterprises that host the cooperative training program by using alternate approach and instruments such as in-depth interview, on-site observation and/or focus group discussion.

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