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INCLUSION OF STUDENTS WITH DISABILITIES IN FORMAL VOCATIONAL EDUCATION PROGRAMS IN ETHIOPIA

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In Ethiopia, individuals with disabilities have limited access to educational and vocational training opportunities. This study investigates prevailing challenges and opportunities for the participation of students with disabilities in vocational education programs in Ethiopia. Data for the study were gathered from the five biggest regions out of the 11 in the country by selecting two colleges of technical and vocational education from each region. A total of 110 trainers and 28 students with disabilities from the selected colleges completed the questionnaire. In addition, 30 regional and college-level administrators were interviewed. Finally, all 10 colleges were evaluated through direct observation in terms of the accessibility of their physical environments. The results revealed significant barriers that limited full participation of students with disabilities, such as lack of adaptive educational materials and facilities, lack of trained trainers, and systematic exclusion of students with disabilities. The results are discussed with a focus on the need for continued improvement of vocational and technical education considering international and national strategies that endorse the rights of people with disabilities.

In developing countries, individuals with disabilities typically live in extreme poverty and dependency. One of the reasons for this is limited access to basic services such as education and vocational training. A strong interaction has been confirmed between disability and poverty, with disability causing poverty, and poverty triggering impairment and disabilities (UNESCO *et al.*, 2004). In Ethiopia, poverty, ignorance, war, disease and harmful traditional practices have been shown to be the major causes of impairments (Tirusew & Alemayehu, 2008). Consequently, the vicious circle of disability and poverty tend to expose persons with disabilities to extreme exclusion and marginalization. Exclusion from education leads to exclusion from the labour market, and this in turn, leads to poverty and dependency on others for income and support.

In many developed countries, the issue of disability is included in development policies and recognized as an essential part of human rights concerns. An example of this is The Americans with Disabilities Act Title II Regulations (Department of Justice, 2010). However, in several countries, persons with disabilities remain the most neglected section of society. During the last quarter of the 20th century, the United Nations (UN) increasingly began to pay attention towards persons with disabilities. UN documents and human rights instruments have now contributed significantly to the change and progress at international and national levels in this respect. These documents include, among others, The UN World Program of Action Concerning Disabled People (United Nations, 1983), The Standard Rules on the Equalization of Opportunities for Persons with Disabilities (United Nations, 1993), The Salamanca Statement and Framework for Action on Special Needs Education (UNESCO, 1994) and The Convention on the Rights of Persons with Disabilities (United Nations, 2006).

In the field of technical and vocational education, significant progress was made following the launching of the Education for All movement by UNESCO and several other international organizations in 1990 (UNESCO, 2014). Its third goal encompasses the development of skills, including technical and vocational skills (UNESCO, 2014). The success of the EFA program in the field of skill development, however, has remained low. According to the 2012 monitoring report, an estimated 11% of secondary school pupils were enrolled in such programmes (UNESCO, 2012, 4).

Several strategies have been recommended to overcome employment-related challenges faced by individuals with disabilities. For instance, Beresford (1996) suggested relevant strategies such as providing increased education and employment training opportunities, encouraging flexible and accessible employment, meeting the additional costs of impairment and challenging prejudice against people with disabilities. Especially, in countries where individuals with disabilities lead a destitute life owing to poverty, vocational education is an ideal instrument to promote their economic empowerment and overall welfare.

Why Technical and Vocational Education?

In the advanced world, there is a growing need of skilled labour in industries. This creates the need to improve the quality of vocational education in order to upgrade the vocational skills of the workforce (McFarland & Vickers, 1994). In some countries, vocational training is a synonym for respectable middle-level training, while in other countries, it is considered as a level that some people choose for the lack of better alternatives (McFarland & Vickers, 1994). In developing countries, vocational education and training can be considered as a foremost instrument for poverty reduction. Individuals who can access education and vocational training are better poised to progress in all aspects of life. Recognizing this reality, the right to education and training has been established through several international instruments that have global endorsement, such as the Universal Declaration of Human Rights, Article 26 (United Nations, 1948), and Convention on the Rights of the Child, Article 28 (United Nations, 1989).

Vocational education is a significant investment because of its contribution to socioeconomic prosperity of nations. The idea that ‘...sustainable growth, competitiveness, innovation and social inclusion’ could be achieved by training citizens to be knowledgeable, skilful and competent in various types of vocations is simple and straightforward (Zarifis, 2010, 201).

In many countries, vocational training programs are designed to serve people of all ages and training needs. This includes young school dropouts, technically talented students seeking additional training beyond high school, veteran workers needing retraining and women returning to the workforce. Moreover, with the passage of time, socioeconomically disadvantaged groups living on the fringes of a society, including persons with disabilities, have come to be able to enjoy the benefits of technical and vocational education and training programs.

Historical Background of Vocational Education in Ethiopia

Ethiopia is a large country located in the Horn of Africa with a population of about 94 million (World Bank, 2014). It is one of the world’s oldest civilizations but is currently one of the poorest and least developed countries in the world with a per-capita income of \$470 in 2013 (World Bank, 2014) and a ranking of 173/187 in the 2013 UNDP Human Development Index (United Nations, 2014).

The origin of advanced technical and vocational skills in Ethiopia can be traced back to ancient Axumite, and medieval Zagwe and Gondarian civilizations. Artisans constructed magnificent monuments, which are currently designated international heritage sites by UNESCO. However, these cultural advancements were lost over the subsequent centuries. Fresh groundbreaking progress in technical and vocational education started during the Italian occupation (1935-1941), which paved the way for the foundation of several vocational education schools. These schools were established mainly to serve the Italian colonial interest, which was geared towards exploiting the natural resources of the country (Takele, 2008).

In the post-liberation period, a professional workforce was crucial for meeting the skilled human power requirements of the industrial and commercial sectors. Several new technical and vocational schools and colleges were opened during the three decades after liberation (Wanna, 1996). The proclamation of the 1994 Education and Training Policy (Federal Democratic Republic of Ethiopia, 1994) was a turning point in the educational system of the country. It resulted in reforms within existing technical and vocational education and training programs. Following pronouncement of the policy, vocational education programs were reformed, and noticeable results were observed in the sector, such as a rapid rise in the number of vocational education institutions accompanied by high enrolment of students in such institutions. Based on this national education and training policy, the Federal Ministry of Education stipulated Technical and Vocational Education and Training Proclamation No.391/2004 (Ministry of Education, 2004) and The National Technical and Vocational Education and Training Strategy (Ministry of Education, 2008) that enhanced the mission and the overall program objectives. This strategy envisions producing skilled human power to meet the growing demand for labour in the market. According to the strategic direction of this document, ‘Technical and vocational education and training (TVET) in Ethiopia seeks to create competent and self-reliant citizens to contribute to the economic and social development of the country, thus improving the livelihoods of all Ethiopians and sustainably reducing poverty’ (Ministry of Education, 2008). In addition, as one of component programs related to the education

sector, vocational education was included in the education sector development programs launched in 1997 (Ministry of Education ESDP I, 1997).

Disability and Vocational Education: Challenges and Opportunities

The first and the second World Wars, while increasing the number of disabled persons in industrialised nations, brought more visibility and attention to the idea of rehabilitation. Policies for employment and vocational rehabilitation of disabled people arose out of the need to provide for those injured in the wars (Helander, 1999). From the 1960s, UNESCO started including among its objectives the special educational and vocational training needs of persons with disabilities. This initiative developed into a principle according to which TVET systems must be open and all inclusive to ensure that even the most underprivileged individuals have access to learning and training (UNESCO & ILO, 2002, 8).

The Convention on the Rights of Persons with Disabilities (United Nations, 2006) recognized the availability and accessibility of education and vocational training for persons with disabilities from the human rights perspective. Based on the universal assumptions endorsed officially by this and other human rights instruments, UN member states initiated efforts to promote the inclusion of persons with disabilities in vocational education programs.

In developed countries such as U.S.A., a considerable amount of information is available on the vocational status of people with disabilities and their vocational education. According to a research review by Harvey (2001), the majority of people with disabilities in U.S.A were not working. However, it was observed that vocational education had some positive impact on post-school employment in this group. It was concluded that enhancing the job skills and employability of persons with disabilities was an important goal of secondary education. The 2011 UN report confirmed that in developing countries, 90% of children with disabilities continue to lack access to education (United Nations, 2011). UNICEF (2014) estimated that about 98% of children with disabilities in Ethiopia had no access to school or vocational training.

In line with the newly emerging, internationally recognized opportunities, the Ethiopian government has made endeavours to provide vocational training to persons with disabilities through formal technical and vocational education programs. Under its specific objectives, the National TVET Strategy (Ministry of Education, 2008) confirmed that special support will be provided to disadvantaged students, including students with disabilities, in the form of affirmative action to ensure their full participation in the country's middle-level technical and vocational training programs.

It has been observed that students with disabilities enrolled in vocational education and training programs report facing more barriers compared with their peers without disabilities (Cocks & Thoresen, 2013). The most commonly reported barriers are related to lack of resources, while support is reported as the most important factor in facilitating course completion (Cocks & Thoresen, 2013). Menbere (2007) summarized the major factors that continued challenging the participation of students with disabilities, such as type of disability, lack of trained personnel, lack of training and employment opportunities, attitudinal problems, national policy limitation, architectural barriers and lack of coordination. Another list of barriers presented includes inaccessible buildings, communication systems, infrastructure, lack of assistive devices and psychological barriers in the minds of people with disabilities (ILO/Japan Technical Consultation on Vocational Training and Employment, 2003).

This study aims to investigate various barriers faced by and opportunities for by students with disabilities who participated in formal vocational education programs in Ethiopia. Data were collected via semi-structured interviews with regional and TEVT colleges' administrators and questionnaire-based interviews with students with disabilities and their trainers, as well as by observing the physical accessibility of educational environments. Recommendations for better training/participation of persons with disabilities were collected from all participants.

Methods

Participants

The research was carried out in five regions out of nine regional states and two city governments of Ethiopia. The selected regions were Addis Ababa city government, Oromiya, Amhara, SNNP and Tigray. These five regions were selected based on their larger size and the fact that they represent 89.59% of the total population of the country. Moreover, major cities with a large number of persons with disabilities are located in these regions. Out of the 348 government TVET colleges, 327 colleges are located in these regions.

In addition to the regional TVET bureaus and agencies, two technical and vocational education and training colleges were selected from each region using purposive sampling. The selection was based on three criteria. First, colleges that provided training opportunities to students with disabilities were selected. Second, colleges with larger numbers of enrolled students and offering more fields of studies in comparison to others were preferred. Third, colleges that were recognized as leading institutions by their respective regional TVET Bureau or Agency owing to their experience, academic strength and seniority were chosen.

A total of 168 individuals selected from these organizations participated in the study. Fifteen TVET college trainers who were requested to participate in the study were not willing to complete the questionnaire. In the context of the Ethiopian Vocational education, teachers, instructors and trainers are the terms which have been used interchangeably, but *trainer* is the preferable one and thus used here. Face-to-face interviews were conducted with 11 administrators from regional TVET bureaus and 19 college deans, deputy deans and heads of different programs. Semi-structured interviews were conducted with 110 vocational education trainers and 28 students with disabilities.

The administrators were at high posts in regional TVET Bureaus/Agencies, Such as deans and deputy deans, and program leaders such as planners of TVET colleges. Almost all of such persons from the targeted institutions were willing to give information. Thus, 30 administrators from regional TVET Bureaus or Agencies and TVET colleges participated. Of them, 90% were male and 10% were female. Most of them were between 41 and 50 years of age. Of them, 12 were qualified at the BA level, and 18 at the MA level; most had worked in the field for more than 15 years (77%).

In each targeted TVET college, there are more than 100 trainers. About 10 trainers from each college were selected randomly from the list of trainers of each field of study (e.g. automotive and other manufacturing industries, tourism and hotel management, garment and textile) in collaboration with the targeted TVET college managements. Finally, 110 trainers with relevant experience and qualification in various vocations participated in the study. Among them, 85 % were male and 15 % were female. Half of the respondents were 18–30 years old, 20 % were 31– 40 years old and 30 % were above 41 years. Their academic qualifications ranged from the certificate level to the MA level. A breakdown is as follows: certificate (2%), diploma (20%), BA (45%) and MA (33%). Their work experience varied from less than 6 years (35%) to more than 21 years (18%).

Twenty-eight 28 students with disabilities were selected randomly from the colleges considered in the study. Among them, 61% were male and 39% were female. Half of them were 10–20 years of age, and the remaining half were 21–30 years of age. Of them, 19 were physically impaired (wheelchair or crutch users), two hearing impaired, two visually impaired and five had multiple impairments. They were scattered across grade levels 1–4. Of the hearing-impaired students, 15 were not interested in completing the questionnaire, deeming the process boring owing to a lack of positive expectation from the contribution of such studies in the Ethiopian context.

Data Collection

To contact and gather data from the study participants, the first author travelled across the five selected regions in Ethiopia. Among these regions, Tigray and Amahara are located at an average of 800 km from the capital.

Table 1. Participants and Data Collection

Participants	N	Data collection method
Administrators		
regional	11	Interviews
colleges	19	Interviews
Vocational education trainers	110	Questionnaires
Students with disabilities	28	Questionnaires
TVET Colleges	10	Systematic observation

Interviews. Face-to-face interviews were conducted to generate information from high-level leaders of regional TVET Bureaus/Agencies and TVET colleges. An interview guide was prepared to maintain quality and consistency across interviews, and all interviews were recorded using a digital recorder. The content of the interview guide was designed with a focus on support services and regional TVET Bureaus/Agencies and colleges' efforts toward addressing the special training needs of students with disabilities. Data was gathered with informants' consent at locations convenient to them, and the data gathered from the study participants has been kept confidential. The interview guide contained 16 basic questions, and each interview lasted an average of 1 h. The recorded interviews were transcribed into text, which ran in to 80 pages.

Questionnaires. Semi-structured questionnaires were prepared to be completed by students with disabilities and their trainers. The questionnaires were distributed to both students with disabilities and trainers. The filled questionnaires were then collected and analysed. The questionnaire for students with disabilities was translated into Amharic to facilitate students with disabilities to understand the concepts underlying the questions and answer them properly. The questions focused on the challenges faced by students with disabilities, as well as the effects, positive or negative, of the services made available to them on their participation in vocational education. For instance, the students were asked about the availability of adaptive educational materials, status of the accessibility of the physical environments of TVET colleges and the response of trainers towards their special educational and training needs.

Observation. The emphasis of observation was on the physical environment of the 10 selected TVET colleges. The first author, who is visually impaired, conducted these observations with the help of his research assistant. The assistant was trained to complete the observations, and having worked in the disability field for 30 years, she is familiar with disability-related issues. The observation targeted the status of physical accessibility for students with disabilities. The observation checklist was prepared by consulting the accessibility requirements listed in relevant UN documents including the UN Standard Rules on the Equalization of Opportunities for Persons with Disabilities, 1993, and The Convention on The Rights of Persons with Disabilities, 2006. The focus was on the accessibility of pedestrian walkways, lobbies and corridors, classrooms, toilet buildings and signage. The checklist contained 12 basic items. An average of 1 h was spent in conducting observations in each college. During the process of observation, pictures and notes were taken to organize and analyze the findings.

Data Analysis

The data collected using each method was organized thematically. The themes focused on the main challenges in the participation of students with disabilities in vocational education and past recommendations to promote better opportunities. The information gathered from the study participants and observations was categorized based on the outlined thematic issues. The inductive approach was used for the analysis, and the thematic issues were linked with the information gathered from the study participants (Patton, 1990; Braun & Clarke 2006). Percentages and frequencies were calculated as well. The major findings were interpreted in reference to relevant documents.

Findings

Preparedness of Colleges

The administrators were asked about the problems faced and existing best practices with regard to accepting students with disabilities in colleges. Twenty-seven administrators out of 30 reported that students with disabilities unsuitable for acceptance in some fields of study, especially in fields requiring 'hard skills' such as automotive, manufacturing, construction and electricity. These administrators believed that students with mild physical impairments were more likely to be accepted in these fields of study over students with other types of impairments. The administrators preferred that students with disabilities rather join 'soft courses' such as accounting, business, ICT etc. However, they explained that no general guidelines existed for stipulating which type of impairment was compatible with which fields of study.

Students unanimously agreed that they had limited access and opportunities to join the desired field of study. The majority of students, 19 of 28, stated that they were not supported by vocational counsellors in identify the fields of study best suited to their impairment.

Several factors were identified from the responses of trainers and administrators as hindrances preventing students with disabilities from attending training, particularly in hard courses. These include the lack of trainers qualified to train students with disabilities in both hard and soft fields of study; non-availability and/or lack of relevant adaptive technology, mainly machineries required to make possible the participation of students with disabilities in vocational training programs; prevailing knowledge gap concerning the existence of such assistive technology; failure to consider mobilizing and allocating financial resources for the transfer of the technology for this purpose and the assumption that hard courses are not suitable for students with disabilities in some cases for safety reasons. In this respect, almost all administrators substantiated the argument citing the example that training machines with sound signals are not suitable for training students with hearing impairment.

The observations showed that the average height of the training machines ranged from 90 cm to 1.6 m. This height was unsuitable for physically impaired students who use a wheelchair to operate the machines properly. Moreover, the loom machines used for imparting training in weaving were not accessible to students with physical impairment in the lower limbs because the reason that the pedals of these machines are designed to be operated by lower limbs. However, one of the targeted TVET colleges which was given a mandate of

transferring technology and knowledge in the form of a tailor-made training program and the modification of such loom machines to be operated by hand. Thus, they were made accessible to students with physical impairment of upper limbs.

One of the administrators explained her experience with the challenges that applicants with disabilities may encounter during registration as follows:

While I was a deputy dean of one of the polytechnic colleges two years ago, I received a complaint from a student with physical impairment. The student had deformity on a part of her face, and upper and lower limbs due to epilepsy-related accidents. The applicant was highly interested in joining a front operation (reception) training program in the hotel management vocation. After the orientation conducted by the college management, she was registered in the department of hotel management studies based on her inclination/interest to be trained in frontline service in the hotel industry. However, the principal trainer of the department rejected her registration, and she refused to accept her choice believing that the student will not be able to secure a job in frontline hotel service or an apprentice/cooperative trainee owing to her deformed physical appearance. Nonetheless, the student insisted on her choice, and the college management stood by her, recognizing her choice based on the principle that students have the right to pick a course of their choice without exception in line with their inclination and interest. However, the principal trainer, too, insisted on her decision, and she gave me a serious warning that if the student is allowed to take part in the training, she will submit an official resignation to the college management. Regardless of the trainer's concerns, I sincerely tried to sensitize and convince her to recognize the inalienable training rights of the student and respect the student's choice. Finally, after heated debate and negotiation, the deadlock was resolved by convincing the student to change her field of study to IT. This case study vividly substantiates the fact that students with disabilities were not at complete liberty to join a field of study of their choice and proclivity.

Similarly, three administrators stated that some students with disabilities were coerced to leave their field of study owing to their impairment. One of these administrators stated

The application of physically impaired students for training as rural agriculture development agents was rejected owing to the assumption that the stakeholders who employ development agents, mainly the ministry of agriculture, may not be willing to accept the trainee because the work requires long distance journeys from one peasant locality to another.

As another aspect of the problem, one of the participants revealed a student with hearing impairment enrolled in a hydraulics course in one of the TVET colleges in Oromiya region was pushed to leave the college and his study after his impairment was detected under the assumption that hearing capacity is needed for such training and in the associated jobs.

Twenty-one out of 30 administrators believed that harmful cultural beliefs prevailing in society, which disregard the potential and capacity of persons with disabilities, too, contributed to lower participation of students with disabilities in vocational training programs. They further argued that persons with disabilities themselves lacked the self-confidence and motivation required to join the training programs assuming that they may not secure a job on completion of the training. A total of 16 students out of 28 believed that the society, including college communities, did not believe in their success in vocational education. However, 19 students believed that upon completing their training, they would not face discrimination in job opportunities. In contrast, 62% of the trainers believed that there was no demand in the labour market for trained students with disabilities owing to entrenched negative attitudes of society towards disability.

Physical Environment Accessibility

A total of 64% of the students and 100% of the administrators stated that the physical environment, mainly buildings and sidewalks in the campuses, were not accessible to students with disabilities, especially to those with visual or physical impairments. The topography of the college compounds was described as rugged and marked by physical features such as open ditches or poles erected on pedestrian walkways. Particularly, roads and older buildings were not accessible.

Observations inside the physical structures of the colleges focused on lobbies, classrooms, corridors, toilets, office premises and walkways. The findings confirmed that with the exception of a few buildings, these

facilities were not accessible by students with disabilities. The toilet rooms were not accessible, particularly by wheelchair users and visually impaired students. The lobbies and corridors of buildings and workshops lacked adequate space for the wheelchair movement.

Adjusted Facilities and Pedagogical Services

A total of 68% of students and 87.2% of trainers considered that adaptive training and educational materials were not available to them. All participants (trainers, students and administrative staff) noted that the basic services particular significant for addressing the special training needs of students with disabilities were not made available at all levels of the vocational education sector. In this regard, the administrators listed the following drawbacks:

- No budget allocation for special needs education;
- No availability of special needs education coordinators at all levels of the sector;
- Inaccessibility of physical environment, including training facilities such as workshops in colleges;
- Failure to include the issue of disability in the annual action plan of regional TVET Bureaus/Agencies and colleges;
- Lack of screening and need-assessment tools concerning the type of impairment and special training needs of students with disabilities.
- The respondent trainers and students with disabilities also attributed the problem to the following five major reasons:
- Absence of readiness and initiative at all levels of the training system to take responsibility to meet these needs;
- Students with disabilities were not able to demand their rights and pressurise the concerned bodies to fulfil these educational and training needs;
- Failure to recognize access to said resources and services as educational and training rights of the students with disabilities, and considering the grant of such access as a favour or optional privilege;
- Non-availability of adaptive training technology and experience learned from other countries that have adopted best practices in promoting the participation of students with disabilities in vocational education;
- Lack of opportunity for trainers to be trained in special needs education and as adaptive skills for training students with disabilities. In this regard, 75.4 % of the trainers confirmed that they have not had the opportunity, formal or informal, to be trained in special needs education.

A total of 81.8 % of trainers and 100% of students confirmed that tutorial support was not available in regular vocational training programs. A total of 61% of the trainers reported that they did not include methods and procedures in their lesson plans to meet the special educational needs of disabled students. These trainers gave the following reasons:

- They have not been trained to deal with the special educational needs of students with disabilities;
- Some believed that disabled students had to succeed through their own effort;
- Preferential or special support to disabled students would result in the neglect of and consequent disadvantage to other students;
- There were no disabled students in the classes they taught.

A total of 60% of trainers believed that students with disabilities could attend training in inclusive class setting. The remaining 40% identified the following challenges in the course of instructing classes consisting of students with and without disabilities.

- Inability to appreciate the special educational needs of trainees with disabilities;
- Lack of access to training in the area of special needs education;
- Total absence or inadequate number of itinerant trainers assigned to support regular trainers in addressing the special educational needs of students with disabilities;
- No availability of adaptive training materials/equipment.

A total of 73.6% of trainers acknowledged that they were not informed about national or international policies, or legal instruments concerning the participation of students with disabilities in vocational training and general education programs.

Regardless of these barriers, the study participants identified existing opportunities for the enrolment of students

with disabilities in vocational education programs. A total of 75% of the participant students with disabilities mentioned the availability of soft skills programs suitable to the special needs of students with disabilities and the fact that the enrolment of students with disabilities was being treated under affirmative rules and actions. A total of 14 administrators substantiated that such initiatives were launched in the Tigray and Amhara regions for increasing the level of participation of students with disabilities in vocational education. A total of 28 administrators further argued the fact that the strategy of vocational training programs in the country is 'competence-based', flexible and accessible. The existence of a strategic direction to bring disabled persons into the mainstream and the availability of alternative fields of study are considered as additional prospects for enhancing the participation of students with disabilities in such programs.

Recommendations of Participants

Study participants, both students and trainers, were encouraged to make suggestions for ensuring better inclusion of students with disabilities in TVET programs. Several recommendations were presented. They are grouped here under six main themes.

Learning materials and skilful staff. Both students and trainers underlined the necessity for adaptive learning materials and tools. Trainers were also keen to enhance the roles played by themselves in relation to the participation of students with disabilities in vocational studies. In particular, they stressed the need for staff trained in special needs education.

Curriculum and vocational counselling. Both trainers and students demanded modification and adaptation of the curriculum to address the special training needs of disabled students. They proposed that the participation of students with disabilities in vocational education programs should be mentioned in the curriculum. There is a demand to organize training activities. In addition, trainers suggested that all such efforts should be made an integral part of the annual action plans of the Federal TVET Agency, Regional TVET Bureaus/Agencies and TVET Colleges. Students with disabilities recommended the provision of vocational counselling to help them choose suitable careers. Such counselling should take place during the process of selection of a field of study.

Attitudes. Both students and trainers noticed that there is a need to develop and apply non-discriminatory attitudes and approaches to the special needs of students with disabilities. Trainers emphasized the need for persistent efforts at the community level, not only to shape the attitudes of people but also to combat harmful practices.

Accessibility. Student participants indicated the need for friendly transportation services and accessible physical environments in TVET colleges and local communities. Social accessibility is essential as well: people with disabilities need support and encouragement in vocational education. Sign language interpreters were mentioned in particular as a means of support for academic/training performance and success of students with hearing impairment.

Employability. Students demanded that colleges ensure the employability of trainees with disabilities through cooperative training. Trainers did not comment on this issue.

Research. Trainers believed that research could result in positive changes for students with disabilities in TVET colleges. They mentioned that a national survey on the major challenges hindering the participation of students with disabilities in formal vocational education programs should be undertaken. In addition, efforts should be launched at the local level for monitoring and evaluating the overall participation of students with disabilities in TVET programs, as well as to bring the issue of disability in the mainstream by using suitable reporting formats at all levels of the sector. Assessments of the special training needs of students with disabilities in terms of the local context should be conducted as well.

Discussion

This study aimed to verify the status of the inclusion of students with disabilities in formal vocational educational programs in Ethiopia. It was found that the physical environments of TVET colleges, such as buildings, walkways and other essential structures, were not accessible by person with disabilities, particularly by persons with visual and physical impairments. Various physical obstacles hindered the mobility of persons with disabilities in these institutions. This was in contrast with the legislation on accessibility of the environment passed by the Ethiopian government in 2010 as per Article 9(4) of the Constitution (Federal Republic of Ethiopia, 1995), and confirmed in the UN Convention on the Rights of Persons with Disabilities (CRPD). Article 9 of the Convention stipulates that 'States Parties shall take appropriate measures to ensure to persons with disabilities access, on an equal basis with others, to the physical environment, to transportation, to

information and communications' (United Nations, 2006).

Moreover, the study identified further contributory factors that limited the participation of students with disabilities in vocational training. The main ones were acute shortage of adaptive training materials and equipment such as machines accessible by physically and hearing impaired students, inadequate pedagogical preparation on the part of trainers in terms of the special training needs of students with disabilities and lack of special support for the students with disabilities, such as the provision of tutorial classes. The need for such provisions was confirmed in rule 6 of the UN Standard Rules on the Equalization of Opportunities for Persons with Disabilities. It says that 'Education in mainstream schools presupposes the provision of interpreter and other appropriate support services, and adequate accessibility and support services, designed to meet the needs of persons with different disabilities, should be provided' (United Nations, 1993, 15).

As confirmed by the findings of the study, the participation of students with disabilities in vocational education was limited due to various factors. Nonetheless, the UN Convention on the Rights of the Child (Articles 2 and 23) of 1989 stipulates that member states allocate the necessary resources and other support so that children with disability can access education. Moreover, the UN Convention on the Rights of Persons with Disabilities Article 24(5), (p.18) stipulates that 'States Parties shall ensure that persons with disabilities are able to access general tertiary education, vocational training, adult education and lifelong learning without discrimination and on an equal basis with others'.

Regardless of the prevailing challenges that curtail the inclusion of students with disabilities in vocational education programs in the country, the findings also divulged promising progress in the participation of students with disabilities in vocational education programs. Impressive efforts were carried out in some regional TVET Bureaus/Agencies to promote the inclusion of students with disabilities in the vocational programs through affirmative action.

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