# ADAPTABILITY OF FACILITIES APPLIED IN COMPETENCE BASED EDUCATION AND TRAINING ON THE ACQUISITION OF EMPLOYABLE SKILLS AMONG VISUALLY IMPAIRED LEARNERS IN TVET INSTITUTIONS IN KENYA

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**Abstract**
The main purpose of this research was to establish the adaptability of facilities applied in CBET implementation on the acquisition of employable skills among visually impaired learners in TVET institutions in Kenya. The study applied a mixed methods research design. The study targeted 2 principals, 20 heads of departments, 70 trainers, 150 visually impaired graduates of Machakos Technical Institute for the Blind and Sikri Technical Training Institute for Deaf-Blind, 2 Ministry of Education officials in charge of TVET, Curriculum Development Accreditation and Certification Council officials, 3 Ministry of Labour officials, 10 members of civil society groups and 5 managers of industries. Data was collected using questionnaires, interview schedules, and focused group discussion guide and observation checklists. Quantitative data was analyzed using descriptive and inferential statistics while qualitative data was analyzed using content analysis. The study found that the utilization of available facilities by the visually impaired learners was overstretched, that quite a large number of visually impaired graduates had been exposed to technology shock in the job markets and that the adaptability of facilities used in CBET implementation positively and significantly influenced the acquisition of employable skills among the visually impaired learners in TVET institutions in Kenya. Based on the findings of the study, the study concluded that the adaptability of facilities used in CBET implementation was a key determinant of the acquisition of employable skills among these learners and that most facilities within the institutes were not adequately adapted to the needs of the visually impaired learners.

**Keywords:** *Adaptability of facilities, competence based education and training, employable skills, visually impaired learners.*

## 1.0 INTRODUCTION

Due to the projected opportunities and challenges worldwide in addressing the current major issues regarding youth unemployment, poverty and competitiveness in skills development, Technical and Vocational Education and Training (TVET) systems play a pivotal role in the social and economic development of a country (Kenya Policy Framework on Technical and Vocational Education and Training, 2012). Consequently, TVET Systems are continuously subjected to forces that drive changes in institutions, industry and the society. One such force is the need to have a competent workforce. In this regard, as outlined by Ferej, Kitainge and Ooko (2012), quality and relevance is

a critical component of education and training worldwide. The concern being not so much about the value and importance of TVET, but how to ensure its relevance, responsiveness and value in an increasingly global economy (Law, 2007).

In an effort to enhance this aspect of education and training, countries have embraced competence based education and training (CBET) as a strategy to prepare learners more effectively for the real workplaces. This is achieved by taking into account the industry requirements. This is in response to unique challenges and opportunities of TVET based on the needs of the changing economies and society (Anane, 2013). Goals of education indicate how TVET is integrated in determining solution of challenges associated with the development agenda of the country. The education goals in Kenya as embodied in Vision 2030 emphasize enlarging learner's knowledge, experiences and imaginative understanding in addition to developing an awareness of moral values and capacity for life-long learning. Consequently, Kenya has embarked on reforms to strengthen TVET capacity as a basis to enable the country participate as a full partner in the world's fast growing, knowledge-based economy. This is evidenced by the national curriculum policy where among others, there is a deliberate effort to turn the Kenya education system into competence based education and training at all levels of education.

CBET is a program of study with clearly defined, concrete and measurable objectives of which every student participating in the program must have demonstrated mastery upon program completion (DeiBinger & Hellwig, 2011). According to Kaaya (2012), CBET is the specification of knowledge and skill and the application of that knowledge and skill to the standard of performance expected in the workplace. Kufaine and Chitera (2013) stated that the implementation of CBET by nations is geared towards the attainment and demonstration of skills to meet industry specified standards. Countries are therefore seeking to create an internationally competitive workforce by reforming their education and training systems.

In line with changing structures of work and economy globally, nations are seeking through CBET, to provide a more universal system of vocational education, encompassing both initial vocational preparations for school leavers and continuing training for the existing adult workforce. According to the Ministry of Planning (2010) in relation to Kenya's Vision 2030, the country intends to create a globally competitive and adaptive human resource base that can meet the requirements of a rapidly industrializing economy through CBET. An important approach to realize the Kenya Vision 2030 and the Big Four Agenda is through TVET based on close collaboration between industry and training institutions. In a similar vein, Kenya Vision 2030 has a special preference for the learners with special needs, which has not been properly translated to reality.

One of the most important features of CBET, as recognized by governments, is its orientation towards the world of work with the curriculum emphasizing the acquisition of employable skills. Despite these efforts, estimations are that 15% of TVET learners have disabilities with 7% of them being visually impaired. The main challenge for the learners with visual impairments is related to among others lack of appropriate workshop equipment, tools and other facilities (Abban & Quarshie (2016). This challenge hinders them from adequately attaining quality skills and competencies leading to unemployment upon graduating. Nevertheless, the adaptability of facilities towards enhancing the acquisition of employable skills among learners with visual impairments and ultimately their employability rates has received limited attention which necessitated this study.

### 1.2 Statement of the Problem

In Kenya, technical manpower is highly significant and there is a tremendous need towards improvement of its scope. Thus, TVET which is more practical and market-oriented remains as the solution to the issue of unemployment among visually impaired graduates, but hitherto, it is not

parallel to its CBET curriculum. Other shortcomings influencing skills acquisition among visually impaired learners are poor instructional methods and use of outdated and unmodified training equipment as well as inadequate facilities. Upon graduating, the learners are exposed to technology shock in the job-market. It is patent that this problem escalates among learners with special needs more so the visually impaired. Thus, the incidence of inadequacy of learning facilities among learners with special needs was adverse, yet there were minimal attempts to eradicate it (Kenya National Survey on PWDs, 2016).

In addition, the numbers graduating with visual impairment had not been accepted in the society as individuals having the capacity to perform acquired skills. This was creating a biased imbalance, as more workforces were ignored due to disability. Furthermore, the employers had reservations in deploying people with visual impairment because they were alleged as burden in industry such that employers' trust was relatively low. In a similar vein, there was discontent among customers served by people with visual impairment since they are perceived as not competent (Palmer, 2017). In another reflection, visually impaired learners were capable of being self-employed; however, literature on this matter was scanty. Furthermore, literature to shed more light on matters related to adaptability of facilities applied in CBET implementation and employability skills acquired by the visually impaired learners was not comprehensive. It was upon this criticism that this research was built.

### 1.3 Objective of the Study

To establish the influence of adaptability of facilities applied in CBET implementation on the acquisition of employable skills among visually impaired learners in TVET institutions in Kenya.

## 2 .0 METHODOLOGY

The study applied a mixed methods research design. The study targeted 2 principals, 20 heads of departments, 70 trainers, 150 visually impaired learners and graduates of Machakos Technical Institute for the Blind and Sikri Technical Training Institute for Deaf-Blind, 2 Ministry of Education officials in charge of TVET, Curriculum Development Accreditation and Certification Council officials, 3 Ministry of Labour officials, 10 members of civil society groups and 5 managers of industries. A census of the principals and trainers was taken while purposive sampling was used to sample the rest of the respondents. Primary data was collected using questionnaires, interview schedules, and focused group discussion guide and observation checklists. Qualitative data was analyzed using content analysis while for the quantitative data, both descriptive and inferential analyses were undertaken. Bivariate regression analysis was used to generate regression coefficients, t statistic and associated p value that guided the testing of the stated hypothesis.

## 3.0 FINDINGS AND DISCUSSIONS

### 3.1 Adaptability of Facilities applied in CBET Implementation

The study sought to determine the adaptability of facilities applied in CBET implementation on the acquisition of employable skills to visually impaired learners in TVET institutions in Kenya

#### 3.1.1 Descriptive Analysis on Adaptability of Facilities applied in CBET Implementation

The trainers were asked to give their assessment of the state of facilities used in implementing CBET in their institutes by rating their level of agreement/disagreement with a number of statements presented. The findings are outlined in Table 1.

**Table 1: Adaptability of Facilities applied in CBET Implementation**

| Adaptability of Facilities applied in CBET implementation | Strongly Disagree | Disagree | Neutral | Agree | Strongly Agree | Mean | Std Dvn |
|---|---|---|---|---|---|---|---|
| There are adequate teaching /learning materials to implement the theory content of CBET curriculum. | 6.20% | 23.10% | 20.00% | 41.50% | 9.20% | 3.246 | 1.104 |
| There are adequate training equipment and tools in the workshops for use during practical lesson. | 4.60% | 32.30% | 26.20% | 29.20% | 7.70% | 3.031 | 1.060 |
| The teaching materials, training equipment and tools have been adapted to meet the needs of the visually impaired. | 7.70% | 38.50% | 20.00% | 24.60% | 9.20% | 2.892 | 1.147 |
| The workshops within the institute are adequate for training visually impaired learners. | 13.80% | 33.80% | 29.20% | 12.30% | 10.80% | 2.723 | 1.179 |
| The institute's workshops are well ventilated and have enough space for easy training of visually impaired learners. | 0.00% | 12.30% | 21.50% | 52.30% | 13.80% | 3.677 | 0.868 |
| The institution environment is least restrictive for the visually impaired learners. | 4.60% | 10.80% | 10.80% | 52.30% | 21.50% | 3.754 | 1.061 |
| The training equipment are regularly serviced and maintained. | 3.10% | 7.70% | 4.60% | 63.10% | 21.50% | 3.923 | 0.924 |
| **Average** | | | | | | **3.321** | **1.049** |

The findings as presented in Table 1 showed that on average, the trainers had a neutral view as to whether there were adequate teaching /learning materials to implement the theory content of CBET curriculum given *(M=3.246, SD=1.104)* and whether there were adequate training equipment and tools in the workshops for use during practical lesson as supported by *(M= 3.031, SD=1.060).* The trainers also had on average, a neutral opinion regarding whether the teaching materials, training equipment and tools in their institutes had been adapted to meet the needs of the visually impaired. And also whether the workshops within the institute were adequate for training visually impaired learners given *(M=2.892, SD=1.147)* and *(M=2.723, SD=1.179)* respectively.

On the other hand, the trainers on average agreed that their institutes' workshops were well ventilated and had enough space for easy training of visually impaired learners given *(M=3.677, SD=0.868)* and that their institutions' environments were least restrictive for the visually impaired learners as shown by *(M=3.754, SD=1.061)*. Similarly, the trainers were on average in agreement that the training equipment were regularly serviced and maintained as supported by *(M=3.923, SD=0.924)*. Generally, the highest mean of responses was associated with the statement "The training equipment are regularly serviced and maintained" *(M=3.923, SD=0.924)* while the lowest mean was linked to the statement "The workshops within the institute are adequate for training visually impaired learners" *(M=2.723, SD=1.179)*.

According to Kitainge (2017), the implementation of CBET in TVET institutions depended on the quality of the trainer's ability to effectively manipulate, operate, and use equipment, tools and materials to help learners understand the contents of the curriculum. Olabiyi, Adigun and Adenle (2008) explain that learning occurs best through participation and hence, using training facilities helped learners to actively participate in learning. This is so since they learned by discovery as the trainer cannot have full knowledge on what the learner had to know. It was thus evident that in all

levels of educational system, instructional facilities or teaching and learning materials were an indispensable factor in the attainment of the goals (Mkpa, 2001).
The findings agreed with that of Umar and Ma'aji (2010) who warned that where facilities, equipment and tools were not adequate and appropriate for use, acquisition of skills among TVET students would be low. This would result to the production of unskilled personnel who were unemployable and unproductive. While indicating that this scenario was alarming, Bunyi and Mumo (2015) stated that effective implementation of CBET called for adequate and adapted equipment for the visually impaired learners to be able to attain the required skills. Therefore, inadequate workshop facilities in TVET institutions hindered skill acquisition.

### 3.1.2 Number of Learners during Practical Lesson

The number of learners during practical lessons was assessed and the findings are as outlined in Figure 1.

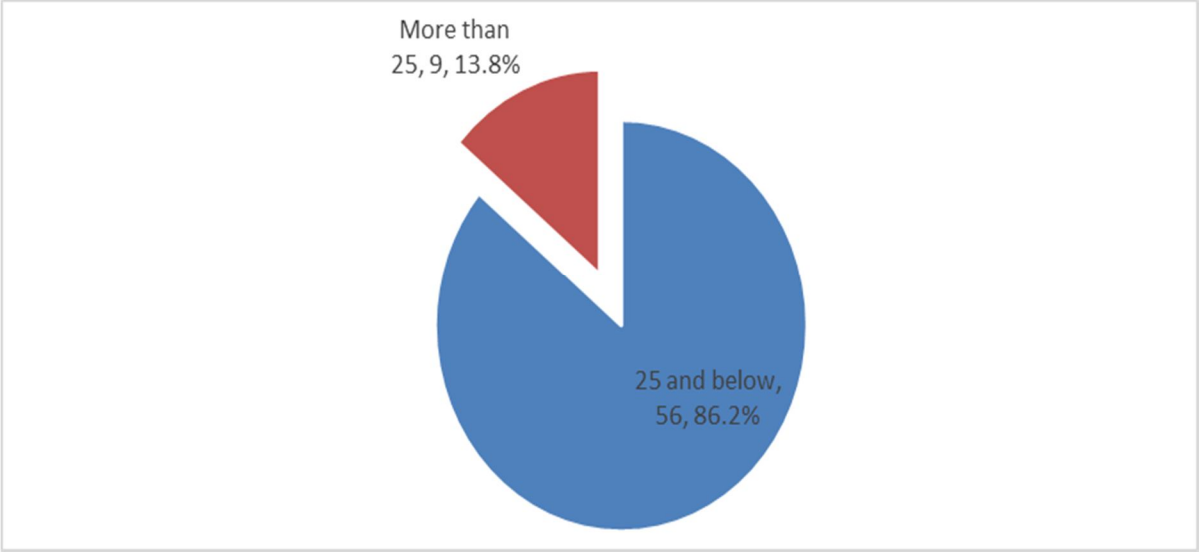


**Figure 1: Number of Learners during Practical Lesson**

The majority of the trainers, 56 (86.2%) stated that they had 25 or less learners during practical classes. During the focused group discussion with the HODs, it emerged that the number of learners during practical sessions ranged from 5 to 15 learners though in some departments, they were about 20 learners as noted by one of the HODs.
The assessment of the number of learners during practical lesson was justified since the number of learners had implications on the general attendance of learners especially those with visual impairments which impacted the acquisition of skills among the learners. According to TVETA regulations, a class is supposed to have a maximum of 25 regular students. The findings implied that this requirement had been met to a large extent though in some fields, more classrooms were required. Tambwe (2019) observed that large class size tended to affect student-teacher interactions and even prevented students-students' exchanges during discussions in the class. This hindered CBET system implementation and teachers failed to apply learner-centered interactive methods as required by CBET systems.

### 3.1.3 Utilization of Facilities by Visually Impaired Learners in the Institute

The study further explored the utilization of facilities by visually impaired learners in the institutes under study. The findings as outlined in Table 2 showed that 19 (29.23%) of the trainers indicated that the facilities were underutilized. In explaining, some trainers highlighted that most equipment remained unutilized by these learners because they were not adapted to their needs and that some were very old and needed to be replaced. Others noted that most of the visually impaired learners left after rehabilitation and only a few joined other department for specialization in technical skills. During the FGD, 3 (30.0%) of the HODs stated that the facilities were also underutilized. In explaining, one of the HODs indicated that,

> *'The ratio of facilities to learners is way far below expectation. The absorption rate is still low hence more sensitization is needed."*

They also added that,

> *"When some machines breakdown, it is difficult to repair them due to lack of specialized technicians. Hence, they lay around unutilized"*

The findings also showed that 14 (21.54%) of the trainers stated that the facilities were adequately utilized by the learners. They cited that their institutes had strived to ensure that the ratio of facilities to learners was okay through continuous increase of equipment. One of the HODs also noted that the facilities in their department were optimally used by the visually impaired learners indicating that the ratio of the number of trainees to facilities (tools and machines) was adequate. However, 32 (49.23%) of the trainers argued that the facilities in their institutes were over utilized decrying that in most practical classes, the number of equipment was not enough. This is because all students were each required to have their own equipment making it hard to teach some lessons. Hence, the available facilities were overstretched leading to increased cases of interchanging and wastage of time.

The findings also showed that a majority of the HODs, 6 (60.0%), stated that the facilities in their departments were over utilized noting that there was a need for more facilities for effective training of these learners. These findings paint a picture of a shortage of the necessary facilities needed to adequately prepare the visually impaired learners in TVET institutions. The findings also implied that even when the facilities were available, they were old and did not match the state of facilities currently applied in the market rendering them inappropriate for use in the training of the learners.

The findings of this study were in congruence with that of Bunyi and Mumo (2015) who found that facilities for TVET institutions were very limited, especially the workshop equipment since they were very expensive, their maintenance cost was very high and that there was no capacity to repair the imported equipment since only a few knew how to use them. The study findings supported the finding of this previous study that the aforementioned scenario posed risk as some of these equipment became relics of previous industrial requirements which hindered skill acquisition.

The findings also supported that of Mbugua, Muthaa, and Sang (2012) who found that most of the training equipment found in TVETs were not technologically in tandem with equipment found in industries and business organizations. The study highlighted that training equipment were inferior to the equipment used in industries and business organizations which eroded the relevance of taught skills to market skill needs.

**Table 2: Utilization of Facilities by Visually Impaired Learners in the Institutes**

| Utilization of Facilities by VILs | Trainers | HODs |
|---|---|---|
| Underutilized | 19 (29.23) | 3 (30.0) |
| Adequately Utilized | 14 (21.54) | 1 (10.0) |
| Over utilized | 32 (49.23) | 6 (60.0) |
| **Total** | **65 (100.0)** | **10 (100.0)** |

### 3.1.4 Similarity between Equipment and Tools used to train VILs with those in Workplaces

The study assessed the extent to which the equipment and tools used to train the visually impaired learners in the institutes were similar to those used in the various workplaces. The study found that a majority of the trainers, 39 (59.1%), found the equipment and tools used in the trainings somehow similar to those used in the workplaces. These findings implied that a majority of the visually impaired graduates from the institutes were exposed to technology shock in the job market. This situation partly explained why these graduates had not been sufficiently absorbed in the different labour markets where they were forced to be self-employed in areas where they were not satisfied with their current income.

The findings supported the recommendations by Anindo (2016) that there was urgent need to modernized equipment and provision of adequate facilities to ensure that graduates coming out of TVETs acquired skills relevant to the employment market skill needs in industries and business organizations. In agreement with this, the TVET policy in Kenya affirmed that one challenge facing TVETs in their curriculum implementation was obsolete training equipment that led to poor training quality and acquisition of skills leading to mismatch of skills among graduates (GoK, 2012). The study findings supported that of Randolph (2014) who found that visually impaired graduates who had gone through CBET were less likely to be employed as the machines available in most industrial companies were sophisticated, hence, these group could not cope up with such machines.

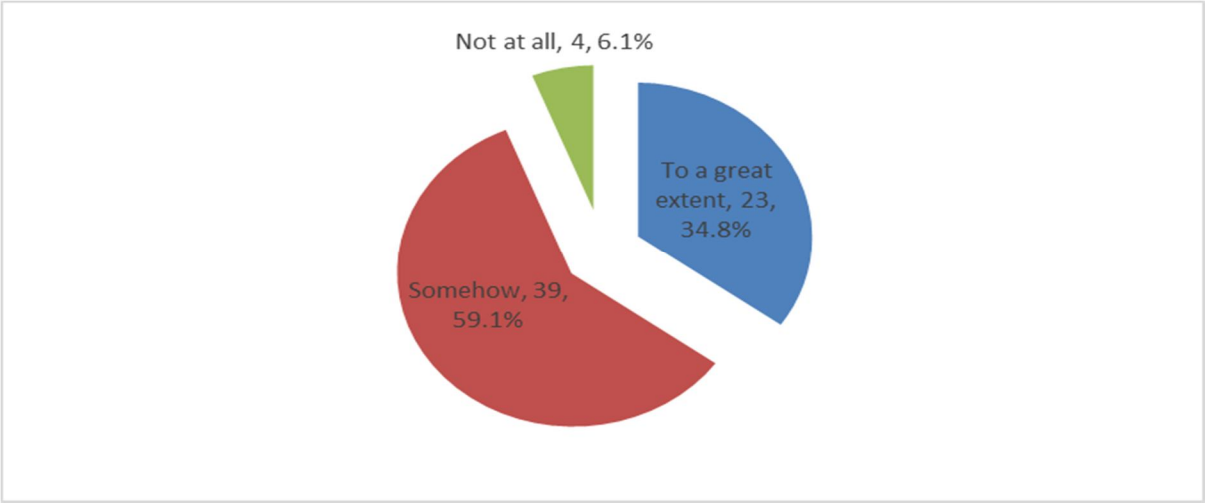


**Figure 2: Comparability of Training Equipment with those at Workplaces (Trainers)**

The visually impaired graduates were also asked to comment on how related the training equipment and tools used in the institutes were to the ones used in work place. From the interviews, it appeared that a majority of the visually impaired graduates noted that the equipment and tools used to train them in the institutes were somehow related to those used in their work places. It emerged that even

though the graduates were familiar with some or most the equipment and tools used in the industry, these equipment and tools were more advanced and complex compared to the ones they used in the institute. Furthermore, some of the facilities in the workplaces were not available in the institutes.

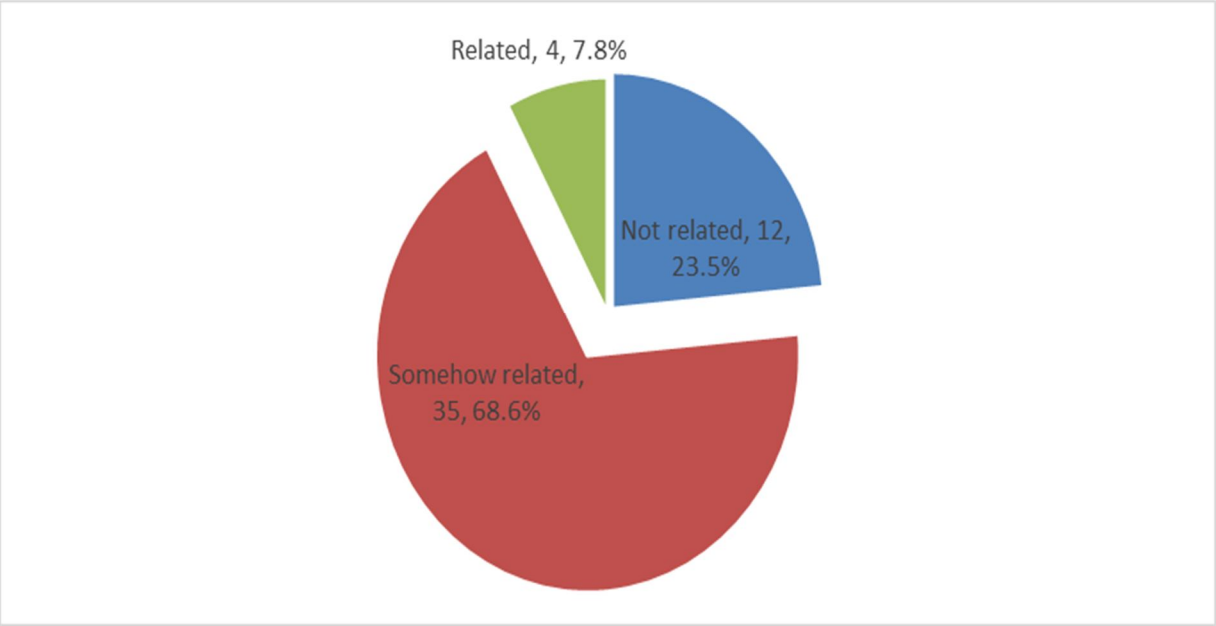


**Figure 3: Comparability of Training Equipment with those at Workplaces**

The above findings implied that the cases of mismatch between the skills acquired by the visually impaired learners in the institutes and those required in the market were greatly attributed to mismatch between the equipment and tools used to train VILs with those in workplaces. This had an implication on the employability of these graduates since when the machines, equipment and tools were different from the ones used in the institute, the graduates were not in a position to use them. This explained the finding where there was low absorption of visually impaired graduates across diverse industries in the country. The findings also implied that even when the graduates secured jobs in some industries, they struggled fitting in to these jobs which might be a turn off for employers who were not prepared to invest in-job trainings for these graduates.

### 3.1.5 Adaptability of Facilities in TVET Institutions in Imparting Employable Skills to Visually Impaired Learners

The HODs comments regarding the adaptability of the facilities in TVET institutions in imparting employable skills to visually impaired trainees were sought. The HODs in unison stated that there was a need for acquiring machines and tools and other facilities that were tailored to the needs of the visually impaired. One of the HODs noted that,

> *'There is need to adapt the facilities in form of lighting and color contrasting for the sake of low vision learners."*

Another HOD stated that,

> *"Facilities and training equipment within the institutions needed to be fitted to the needs of the visually impaired to give them a conducive environment for learning."*

While outlining some of the efforts in their institute so far, the HOD added that,

> *"Efforts were made to adapt institute and Kenya Institute of Special Education (KISE) buses, this is an indication that with more sensitization and involvement of the manufacturers, more equipment can be adapted as per the learners' needs."*

During the interview with the MOE official, they indicated that the facilities in the TVET institutions were not adequately adapted for use by visually impaired learners. As a result, they recommended the need for the government to benchmark with well-established economies to find out ways in which the needs of the visually impaired were catered for in the state of facilities in the institutions for continuous improvement.

### 3.1.6 Allocation of Funds by the Government to enhance Facilities in TVET Institutions

During the interview with the MOE official, the researcher enquired whether the government had allocated funds to enhance facilities in TVET institutions. The official indicated that these allocations were adequate. They further noted that the government released funds for maintenance of the facilities in TVET institutions yearly. The comments given by the MOE official seemed not in line with the views of the trainers, HODs and even the graduates who decried that most facilities in the institutions were inadequate and not well maintained which could be attributed to lack of financial resources needed to acquire new facilities (equipment, tools, machines, learning materials etc.) or maintain the existing ones. Ayonmike *et al.* (2013) noted that inadequate provision of infrastructural facilities was due to low levels of funding of educational institutions, particularly TVET institutions. They emphasized that appropriate installation of equipment in the institutes' workshop cannot be done without adequate fund.

### 3.1.7 MOE Official's Comments on State of Facilities in TVET Institutions

The ministry of education official was asked to give his assessment of the state of facilities in TVET institutions in Kenya. According to the official, the workshops and training equipment in these institutions were adequate while the teaching/learning resources and training tools were inadequate. The sentiments of the MOE official partly contradicted that of trainers, HODs and graduates who opined that the training equipment and workshops in these institutions were inadequate. According to Kitainge (2017), in Kenya, facilities for TVET institutions were very limited, especially the workshop equipment. This was because they were very expensive and their maintenance cost was very high. Further, there was no capacity to repair the imported equipment, and few know how to use them. The study findings also supported that of Ayonmike et. al. (2013) which showed that lack of infrastructural facilities was a problem for most learning institutions.

**Table 3: MOE Official's Comments on State of Facilities in TVET Institutions**

| Facilities | Comment |
|---|---|
| Workshops | Adequate |
| Training equipment | Adequate |
| Teaching/learning resources | Inadequate |
| Training tools | Inadequate |

When asked how the above state of facilities in TVET institutions affected the implementation of CBET pertaining to the visually impaired learners, the MOE official indicated that,

> *"Inadequate facilities lead to requirement for more time for learning among these learners which is not provided for the in the curriculum. This slows down the pace of its implementation."*

Consistent with Emetarom (2004), facilities in learning institutions which included the infrastructure and all material resources served as pillars of support for effective teaching and

learning towards delivery of quality education. Asiyai (2012) also identified the importance of school facilities in quality teaching and learning emphasizing that when facilities in learning institutions were inadequately maintained, they constituted health hazards to students and teachers who used the facilities hindering skills acquisition among students. Asiyai observed that achievement of students who were taught in modernized buildings was consistently higher across a range of standardized tests.

The study findings supported the warning by Umar and Ma'aji (2010) that where the facilities, equipment and tools were not adequate and in good condition for use, the acquisition of skills among TVET students was low which resulted to production of unskilled personnel who were unemployable and unproductive. The study findings are also in agreement with that of Mkpa (2001) which indicated that in all levels of educational system, instructional facilities or teaching and learning materials were an indispensable factor in the attainment of the system's goals.

### 3.1.8 Suggestions of Improvement in regards to State of Facilities

The trainers were asked to give their suggestions on the areas of improvement of facilities in their institutes towards acquisition of employable skills among the visually impaired learners. The findings as presented in Table 5 showed that 53 (81.5%) of the trainers noted that facilities needed to be adapted and improvised to be visually impaired friendly, 41(63.1%) noted that there was need for acquisition of more facilities so as to ensure they were enough as per the number of trainees to be assessed while 27 (41.5%) of the trainers recommended for more dormitories to accommodate more visually impaired learners. It was emphasized that there was need to redesign and improve both the facilities and strategies for content delivery. The findings implied that for there to be enhanced acquisition of employable skills among the visually impaired learners in TVET institutions, the acquisition of adequate facilities and equipment which are adapted to the needs of the learners ought to be prioritized.

**Table 4: Suggestions of Improvement in regards to State of Facilities**

| Suggestions of Improvement | Frequency | Percent |
|---|---|---|
| Facilities to be adapted and improvised to be visually impaired friendly. | 53 | 81.5 |
| More facilities should be acquired to ensure they are enough as per the number of trainees to be assessed. | 41 | 63.1 |
| Need more space for workshops and enhanced specialized infrastructure. | 27 | 41.5 |
| More dormitories to accommodate more visually impaired learners | 3 | 4.62 |

### 3.1.9 Acquisition of Employable Skills among the Visually Impaired Learners

The trainers were asked to give their assessment of the employability skills acquired by their visually impaired graduates and the findings are summarized in Table 5.

**Table 5: Employability Skills Acquired by Visually Impaired Learners**

| Employability Skills Acquired by Visually Impaired Learners | Strongly Disagree | Disagree | Neutral | Agree | Strongly Agree | Mean | Std Dvn |
|---|---|---|---|---|---|---|---|
| Basic skills (reading, writing, listening, speaking, mathematics) | 3.10% | 4.60% | 4.60% | 46.20% | 41.50% | 4.185 | 0.950 |
| Thinking skills (creative thinking, effective decision making, problem solving, reasoning skills, ability to learn) | 0.00% | 0.00% | 10.80% | 64.60% | 24.60% | 4.138 | 0.583 |
| Personal qualities (taking responsibility for actions, goal oriented, friendly, open, honest, meeting customer demands). | 0.00% | 3.10% | 9.20% | 66.20% | 21.50% | 4.062 | 0.659 |
| Integrity (honest, sound moral character and values) | 3.10% | 0.00% | 3.10% | 69.20% | 24.60% | 4.123 | 0.740 |
| Resource management (identifying, organizing, planning, and allocating resources; prioritizing; time and project management) | 0.00% | 7.70% | 24.60% | 44.60% | 23.10% | 3.831 | 0.876 |
| Interpersonal skills (working well with others as a team, openness to diversity, excellent customer service skills) | 3.10% | 0.00% | 1.50% | 69.20% | 26.20% | 4.154 | 0.734 |
| Systems management (understand and effectively work with social, organizational, and technological systems) | 3.10% | 1.50% | 29.20% | 49.20% | 16.90% | 3.754 | 0.867 |
| Technology use (working with computers and other technology, selecting right tools, equipment, hardware, and software for a job, and application of knowledge to tasks) | 0.00% | 15.40% | 24.60% | 50.80% | 9.20% | 3.538 | 0.867 |
| Adaptability (ability to adapt to changing work environments) | 0.00% | 3.10% | 23.10% | 50.80% | 23.10% | 3.938 | 0.768 |
| Work ethics (performing the assigned duties according to the laid down regulation, ability to design/make needed customer items within the set time) | 3.10% | 0.00% | 10.80% | 47.70% | 38.50% | 4.185 | 0.864 |
| Professionalism (acting in a responsible manner, maturity, self-confidence) | 4.60% | 4.60% | 1.50% | 47.70% | 41.50% | 4.169 | 1.009 |
| **Average** | | | | | | **4.007** | **0.811** |

The study found that on average, the trainers agreed that the visually impaired graduates from their institutions had acquired basic skills (reading, writing, listening, speaking, mathematics) given *(M=4.185, SD=0.950).* The trainers also on average agreed that the graduates had acquired thinking skills (creative thinking, effective decision making, problem solving, reasoning skills, ability to learn) *(M=4.138, SD=0.583),* personal qualities (taking responsibility for actions, goal oriented, friendly, open, honest, meeting customer demands) *(M=4.062, SD=0.659)* and integrity (honest, sound moral character and values) *(M=4.123, SD=0.740).*

The findings further showed that on average, the trainers agreed the visually impaired graduates had acquired Resource management skills (identifying, organizing, planning, and allocating resources;

prioritizing; time and project management) *(M=3.831, SD=0.876)*, that they had acquired interpersonal skills (working well with others as a team, openness to diversity, excellent customer service skills) *(M=4.154, SD=0.734)* as well as systems management skills (understand and effectively work with social, organizational, and technological systems) *(M=3.754, SD=0.867)*. Similarly, the trainers agreed that their VI graduates had acquired technology use skills (working with computers and other technology, selecting right tools, equipment, hardware, and software for a job, and application of knowledge to tasks) *(M=3.538, SD=0.867)*, and that they had acquired adaptability skills (ability to adapt to changing work environments) as shown by *(M=3.938, SD=0.768)*. The trainers were on average in agreement that their graduates had acquired work ethics skills (performing the assigned duties according to the laid down regulation, ability to design/make needed customer items within the set time) *(M= 4.185, SD=0.864)* and also professionalism (acting in a responsible manner, maturity, self- confidence) *(M=4.169, SD=1.009)*.
According to Ayonmike, Okwelle and Okeke (2014), CBET can be viewed as a way of approaching (vocational) training that puts much emphasis on skills acquisition and knowledge. The findings supported the study by Kufaine and Chitera (2013) which found that CBET approach helped the learners to acquire skills that were necessary for the industry. The findings implied that CBET curriculum allowed the government to empower its people with the needed knowledge and skills, attitudes and values which enabled them to be empowered for both individual and general development in line with Ayonmike, Okwelle and Okeke (2014).
In his study, Chatsworth (2012) outlines twelve important issues of employability such as problem solving, leadership skills, analytical thinking skills, organizational and cooperative building, communication skills, competence, commerciality, work achievement, flexibility, customer focus and developing skills and training people; these outline helped to bridge the need of graduates to enhanced soft and technical skills characteristics.

### 3.2 Correlation between Adaptability of Facilities applied in CBET Implementation and Acquisition of Employability Skills among Visually Impaired Learners

The association between the adaptability of facilities applied in CBET implementation and acquisition of employability skills among visually impaired learners in TVET institutions in Kenya was also evaluated. The findings as outlined in Table 6 showed that adaptability of facilities applied in CBET implementation was positively and significantly correlated with the acquisition of employability skills among visually impaired learners in these institutions as shown by *(r=0.766, p=0.000, p<0.05)*. The correlation between these variables was also strong.
The findings implied that the adaptability of facilities applied in CBET implementation and the acquisition of employability skills among these learners changed together in the same direction. According to Mkpa (2001), CBET provided for the acquisition of technical knowledge and vocational skills needed in the market place. Hence, in all levels of the educational system, instructional facilities or teaching and learning materials were an indispensable factor in the attainment of these goals.

**Table 6: Correlation Between Adaptability of Facilities applied in CBET Implementation and Acquisition of Employability Skills among Visually Impaired Learners**

| | | Acquisition of Employability Skills among VILs | Adaptability of Facilities applied in CBET Implementation |
|---|---|---|---|
| Acquisition of Employability Skills among Visually Impaired Learners | Pearson Correlation | 1 | |
| | Sig. (2-tailed) | | |
| | N | 65 | |
| Adaptability of Facilities applied in CBET Implementation | Pearson Correlation | .766** | 1 |
| | Sig. (2-tailed) | 0.000 | |
| | N | 65 | 65 |

** Correlation is significant at the 0.01 level (2-tailed).

### 3.3 Regression Analysis between Adaptability of Facilities applied in CBET Implementation and Acquisition of Employability Skills among Visually Impaired Learners

Bivariate regression analysis was undertaken to establish the relationship that existed between adaptability of facilities applied in CBET implementation and acquisition of employability skills among visually impaired learners in TVET institutions in Kenya. This helped the researcher in determining the effect of adaptability of facilities applied in CBET implementation on acquisition of employability skills among these learners. To this end, the following null hypothesis was tested;

**$Ho_1$**: Adaptability of facilities applied in CBET implementation does not significantly affect the acquisition of employability skills among visually impaired learners in TVET institutions in Kenya.

#### 3.3.1 Model Summary

The model summary results presented in Table 7 indicated that the adaptability of facilities applied in CBET implementation was attributed to 58.7% of the variance in the acquisition of employable skills among the visually impaired learners in TVET institutions in Kenya given R square of 0.587. The rest of the variance in the acquisition of employable skills among these learners, 41.3%, was attributed to other factors not included in the model. The findings implied that the adaptability of facilities applied in CBET implementation was a significant variable in explaining the acquisition of employable skills among these learners in TVET institutions in Kenya.

**Table 7: Model Summary for Adaptability of Facilities applied in CBET Implementation**

| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate |
|---|---|---|---|---|
| 1 | .766a | 0.587 | 0.58 | 0.352968 |

a Predictors: (Constant), Adaptability of Facilities applied in CBET Implementation

#### 3.3.2 Analysis of Variance

The fitness of the model used to show the relationship between adaptability of facilities applied in CBET implementation and acquisition of employability skills among visually impaired learners in TVET institutions in Kenya was assessed using the analysis of variance test. The findings as outlined in Table 8 showed that the model was fit or significant given $F(1, 63) = 89.479$, $p = .000 < 0.05$. The findings also implied that the adaptability of facilities applied in CBET implementation was a good predictor of the acquisition of employability skills among visually impaired learners in TVET institutions in Kenya.

**Table 8: Analysis of Variance**

| Model | | Sum of Squares | df | Mean Square | F | Sig. |
|---|---|---|---|---|---|---|
| 1 | Regression | 11.148 | 1 | 11.148 | 89.479 | .000b |
| | Residual | 7.849 | 63 | 0.125 | | |
| | Total | 18.997 | 64 | | | |

a Dependent Variable: Acquisition of Employability Skills among Visually Impaired Learners
b Predictors: (Constant), Adaptability of Facilities applied in CBET Implementation

### 4.3.3 Regression Coefficient for Adaptability of Facilities applied in CBET Implementation

The regression output presented in Table 9 showed that the acquisition of employable skills among the visually impaired learners in TVET institutions in Kenya was positively and significantly affected by the adaptability of facilities applied in CBET implementation as shown by $\beta = 0.709$, $t = 9.459$, $p = .000$, $p<0.05$. The findings implied that a unit increase in the adaptability of facilities applied in CBET implementation in these institutions would result to increased acquisition of employable skills among these learners by 0.709 units. The null hypothesis was therefore rejected and an inference made that the adaptability of facilities applied in CBET implementation significantly affected the acquisition of employable skills among visually impaired learners in TVET institutions.

The findings agreed with that of Mbugua, Muthaa, and Sang (2012) who found that the availability of modern and relevant training equipment affected the relevance of employable skills acquired by students to market skills needed. According to this study, the lack of training facilities compromised the relevance of taught skills to market skill needs in industries and business organizations.

The following model was fitted;

*Acquisition of Employability Skills among Visually Impaired Learners in TVET Institutions in Kenya = 1.312 + 0.709 Adaptability of Facilities applied in CBET Implementation to VILs' needs*

**Table 10: Regression Coefficient for Adaptability of Facilities applied in CBET Implementation**

| Model | | Unstandardized Coefficients | | Standardized Coefficients | t | Sig. |
|---|---|---|---|---|---|---|
| | | B | Std. Error | Beta | | |
| 1 | (Constant) | 1.312 | 0.288 | | 4.551 | 0.000 |
| | Adaptability of Facilities applied in CBET Implementation to VILs' needs | 0.709 | 0.075 | 0.766 | 9.459 | 0.000 |

a Dependent Variable: Acquisition of Employability Skills among Visually Impaired Learners

## 4.0 CONCLUSIONS

The study concluded that there was general shortage of facilities especially equipment, tools, machines and other reference materials needed in adequately implementing the CBET approach in regards to the visually impaired in TVET institutions. The study also concluded that low admission rates in technical areas of specialization had resulted to underutilization of facilities in some departments within these institutions. The study further concluded in most workplaces, the equipment, tools and machines used were more advanced and different from those the visually impaired learners had used in their trainings in the institutes. The study also concluded that most

facilities within the institutes were not adequately adapted to the needs of the visually impaired learners. The study further concluded that the suitability of facilities in terms of training equipment and tools, resource materials and workshops within the institutes in training visually impaired learners on preparation for job market was watered down by their inadequacy and poor maintenance. The study concluded that the adaptability of facilities used in CBET implementation was a key determinant of the acquisition of employable skills among these learners.

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