



APPLICABILITY OF COMPETENCE BASED EDUCATION AND TRAINING CURRICULUM AND ACQUISITION OF EMPLOYABLE SKILLS AMONG VISUALLY IMPAIRED LEARNERS IN TVET INSTITUTIONS IN KENYA

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Abstract

According to the Kenyan Vision 2030, Technical and Vocational Education play a pivotal role in the social and economic development of a country. The objective of this study was to determine the influence of competence based education and training curriculum on 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 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, 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 applicability of CBET curriculum positively and significantly influenced the acquisition of employable skills among the visually impaired learners in TVET institutions in Kenya. The study further found out that core competencies as stipulated in the curriculum were the most challenging competencies to impart to the visually impaired learners when compared to basic and common competencies. This supported by the finding that quite a number of learners in the institutes were not declared competent at the end of their course work. The study therefore concluded that the level of acquisition of employable skills among the visually impaired learners in TVET institutions was considerably affected by the level of applicability of the CBET curriculum. The study recommends that curriculum developers should allocate more time for learning for the visually impaired learners as this could perfect their competencies and adaptation of the curriculum to meet their needs and consider their difficulties.

Keywords: Applicability, competence based education and training curriculum, employable skills, visually impaired learners.



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1.0 INTRODUCTION

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 Oko (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 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 economy 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 the 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 (CBET) at all levels of education.

Anane (2013) describes CBET as an industry and demand driven (outcomes-based) education and training programme based on well-defined industry generated standards (occupational standards). It first emerged in the US in the 1970s, in the United Kingdom and Germany, among others, in the 1980s and in Australia in the 1990s. CBET was later expanded and implemented in the New Zealand, South Africa, and a number of European countries (Anane, 2013). According to Ford (2014), there are different CBET models used within the developed countries though they have differences in terminologies, processes for the development of programmes and in assessment methods. Despite this, the characteristics, structure and

objectives of CBET are the same for all models. United Nations Educational Scientific and Cultural Organization (UNESCO) (2011) report indicates that the CBET model was largely introduced in developed countries in relation to TVET which were established to achieve desirable changes and ensure development of nations and stimulate employability among graduates.

2.0OVERVIEW OF APPLICABILITY OF COMPETENCE BASED EDUCATION AND TRAINING CURRICULUM AND ACQUISITION OF EMPLOYABLE SKILLS AMONG VISUALLY IMPAIRED LEARNERS

According to Kenya National Survey on PWDs (2016), poor transition from TVET institutions to work by the visually impaired graduates is a factor which has caused a lot of debate among scholars arguing that CBET is in line with the global UN Sustainable Development Goals (SDGs), though it is silent on its implementation to visually impaired learners. This is confirmed by Palmer (2017) in his study on decent livelihood in Kenyan rural informal economy. This trend of affairs suggests that CBET offered by the TVET institutions probably fail to develop the skills required for employment among visually impaired graduates within the country and beyond. Bunyi and Mumo (2015) on their part argue that CBET curriculum has not been shaped to endorse quality of service envisioned to be delivered to learners with special needs more so the visually impaired. Abban and Quarshie (2016) also highlight that among the challenges faced by learners with visual impairment is lack of adapted CBET curricular which hinder them from adequately attaining quality skill competence leading to unemployment upon graduating. These issues necessitated for a study to establish the relationship between applicability of CBET curriculum and the acquisition of employable skills among visually impaired learners (VILs) in TVET institutions in Kenya.

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 applicability of CBET curriculum in the context of persons with visual impairment, their acquisition of employable skills and ultimately their employability was not comprehensive. It was upon this criticism that this research was built.

3.0 METHODOLOGY

Kombo and Tromp (2006) notes that research design is a method that a researcher uses to carry out research collect data, measurement, analysis data and the research problems. This research applied a mixed methods research design where both qualitative and quantitative methods were applied. Purposive sampling technique was used to select the respondents of the study. The study used a sampling matrix comprising of 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.

Primary data was collected using questionnaires, interview schedules, 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 with the aid of the statistical package for social sciences. Bivariate regression analysis was used generate regression coefficients, t statistic and associated p value that guided the testing of the stated hypothesis.

4.0 RESEARCH FINDINGS AND DISCUSSIONS

The study sought to determine the influence of the applicability of competence based education and training curriculum on acquisition of employable skills among visually impaired learners in Kenya. In addition, study assessed whether the trainers had received any special training to equip them with the requisite knowledge and skills to effectively implement the CBET curriculum in their institutions. The findings of the study showed that a majority of the trainers, 51 (78.5%) and the principal respondents had received special training on SNE. Therefore, the findings implied that most of the trainers in the TVET institutions were informed on the requirements of the CBET curriculum and hence had the basic knowhow needed in implementing this curriculum. A summary of the findings is presented in Figure 1. Below.

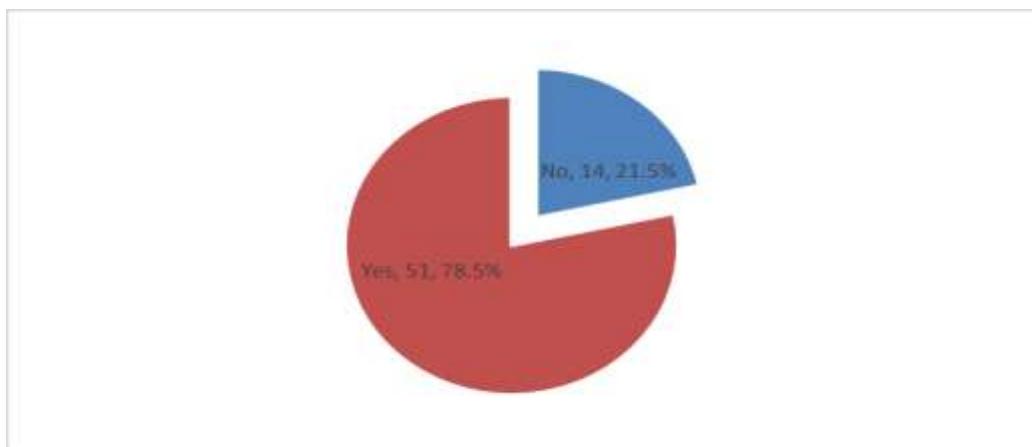


Figure 1: Special Training on Implementation of CBET Curriculum

According to Adebambo (2017), it was important for trainers and principals to possess working knowledge on what CBET entailed and how to adapt the curriculum to meet the diverse needs of the visually impaired learners if they were to adequately prepare the learners. The kind of special training to equip them trainers with requisite knowledge and skills to effectively implement the CBET curriculum was also assessed. The findings as outlined in Table 1 showed that 18 (35.3%) of the trainers had obtained training on technical and special needs education, 9 (17.6%) had been trained on refresher courses on curriculum implementation, 31 (60.8%) of the trainers also the majority had received training on competence based assessment (CBA) as trainers, assessors and verifiers, 15 (29.4%) had received training as trainers of trainers (ToT) in CBET while 6 (11.8%) of the trainers had obtained training on monitoring and evaluation from MOE and CDACC.

Table 1: Special Training obtained by Trainers in relation to CBET Implementation

Special Training Obtained	Frequency	Percentage
Technical and special needs education	18	35.3
Refresher courses	9	17.6
Training on competence based assessment	31	60.8
Trainer of trainers in CBET	15	29.4
Monitoring and evaluation	6	11.8

According to the data collected through interviews, the trainers explained that these special trainings enabled them to understand the basic principles regarding CBET and equipped them with the necessary skills needed in effectively implementing CBET. However, a concern was raised that in real class training, some conceptual skills were difficult for the visually impaired learners to understand.

The findings reported in the preceding paragraph implied that trainers in TVET institutions had received diverse kinds of training which ensured that they had diverse and holistic skills which adequately prepared them to implement all facets of the CBET curriculum. Training on technical and special needs education in particular was crucial since it ensured that the trainers were equipped with the necessary competencies which prepared them to adequately teach the CBET curriculum in the context where learners had disabilities in particular, visual impairments. Continuous refresher courses ensured that the trainers were always on track in implementing the curriculum and always bore in mind the fundamental principles of CBET curriculum. This was fundamental in ensuring that there was minimal deviation from the laid down requirements and objectives of the curriculum. The findings were in line with the suggestions of Capella (2011) that in order to effectively implement the CBET curriculum, trainers ought to attend refresher courses, in-service courses and capacity building workshops which prepared them to be highly qualified, competent and devoted in training learners. Kitainge (2017) also emphasized that in implementing the CBET approach, a high degree of competence and a sense of responsibility was fundamental which meant that pre-service and in service training for the TVET trainers was necessary. The findings support the recommendations by Kitainge that before trainers can embark on teaching CBET, they needed to undergo the requisite formal training for that curriculum and that regular in-service training was necessary in order to keep them up to date with new techniques.

During the focused group discussion with the Heads of Departments, it emerged that all of them were conversant with the CBET approach of teaching. In explaining the relevance of this training, one of the HODs pointed out that,

“This is a training that enables trainees to acquire the necessary skills, knowledge and attitude on specific fields. The learners are trained in relevant skills that they can perform.”

By having the requisite skills, knowledge and attitude on their areas of specialization, the trainers were able to teach the CBET curriculum with ease which motivated them to work towards the full implementation of this approach in their specific fields. Attitude towards the CBET curriculum was crucial in influencing the acceptability of the approach and hence the efficiency in its execution since cases of resistance and slow uptake of the approach were minimized. According to Kitainge (2017), incompetent trainers cannot ensure quality implementation of CBET. The findings support the views of Muneja (2015) that TVET trainers ought to possess several attributes for effective teaching since they were the main implementers of the CBET system. Jeanne (2014) emphasizes that the fundamentals for technical training require the trainer to have subject knowledge, pedagogic experience and practical skills.

The trainers were also asked to express their degree of agreement or disagreement with a number of statements related to the applicability of CBET curriculum in relation to the acquisition of employable skills among the visually impaired learners. The findings are shown in Table 2. The mean results were interpreted using a scale interval where a mean value of (5.000-4.500) was an indication of strongly agree, (4.499-3.500) indicated agree, (3.499-2.500) indicated neutral, (2.499-1.500) indicated disagree and (1.499-1.000) indicated strongly disagree.

Table 2: Applicability of CBET Curriculum

CBET Curriculum	Strongly Agree					Strongly Agree	Mean	Std Dvn.
	Disagree	Disagree	Neutral	Agree				
The time allowed for theory classes is adequate	3.10%	3.10%	3.10%	63.10%	27.70%	4.092	0.84	3
The practical time allocated is adequate	13.80%	16.90%	16.90%	38.50%	13.80%	3.215	1.28	1
There are adequate resources to implement the theory lessons	6.20%	32.30%	21.50%	24.60%	15.40%	3.108	1.20	1
There are adequate resources to teach the practical lessons	10.80%	27.70%	24.60%	18.50%	18.50%	3.062	1.28	5
Strategies used to	3.10%	10.80%	20.00%	36.90%	29.20%	3.785	1.08	

deliver the CBET curriculum content to the learners meet the required standards			%			2
The CBET curriculum is adequate to prepare the graduates for the job market	0.00%	6.20%	16.90%	52.30 %	24.60%	3.954 8
The assessment process used in the curriculum meet the required standards	3.10%	9.20%	21.50%	50.80 %	15.40%	3.662 7
The curriculum is adapted to meet visually impaired learners needs.	16.90%	26.20%	16.90%	15.40 %	24.60%	3.046 2 1.11
Average					3.491	5

The study found that on average, the trainers agreed that the time allowed for theory classes was adequate given ($M=4.092$, $SD=0.843$). The study also found that on average, the trainers had a neutral view regarding whether the practical time allocated was adequate given ($M=3.215$, $SD=1.281$) and whether there were adequate resources to implement the theory lessons as supported by ($M=3.108$, $SD=1.201$). Similarly, the trainers on average had a neutral opinion regarding whether there were adequate resources to teach the practical lessons as shown by ($M=3.062$, $SD=1.285$).

The findings on the other hand showed that on average, the trainers were in agreement that the strategies used to deliver the CBET curriculum content to the learners met the required standards as shown by ($M=3.785$, $SD=1.082$). The trainers also agreed that the CBET curriculum was adequate to prepare the graduates for the job market on average given ($M=3.954$, $SD=0.818$). Similarly, the trainers were in agreement that the assessment process used in the curriculum met the required standards on average as supported by ($M=3.662$, $SD=0.957$). The findings further showed that on average, the trainers had a neutral view regarding whether the curriculum was adapted to meet visually impaired learners needs as shown by ($M=3.046$, $SD=1.452$). The findings revealed that the highest mean of responses was associated with the statement ‘The time allowed for theory classes is adequate’ ($M=4.092$, $SD=0.843$) while the lowest mean was associated with the statement “The curriculum is adapted to meet visually impaired learners needs” ($M=3.046$, $SD=1.452$).

Sullivan (2015) underscores that CBET programs require that; supporting theory is integrated with skill practice, essential knowledge is learned to support the performance of skills, detailed training materials are keyed to the competencies to be achieved and are designed to

support the acquisition of knowledge and skills, that methods of instruction involve mastery learning, there is provision sufficient time and appropriate training methods are used, participants' knowledge and skills are assessed. The findings agreed with the study by Anane (2013) which noted that CBET programs require flexible training approaches and a range of support materials that may include audiovisual, print and simulations (models) keyed to the skills being mastered. Bunyi and Mumo (2015) also emphasized that if the objectives of CBET were to be achieved in regards to the visually impaired, adaption of the curricula was necessary.

The response of the Heads of Departments regarding the adaptability of the CBET curriculum towards employability of the visually impaired graduates was also sought. The HODs noted that it was a good approach though there was a need for the curriculum to be adapted to the needs of the visually impaired. According to one of them,

"It is a good approach to training the visually impaired learners on the skills they can accomplish. It reduces the cases of persons with visual impairments depending on handouts."

In emphasizing the need for the curriculum to be adapted to the needs of these learners, another HOD noted that,

"It has not done much in helping graduates secure other forms of employment other than self-employment. Hence, there is need for the curriculum's more focus on self-employment and programs for public sensitization on employing the visually impaired."

The findings implied that even though the CBET curriculum that was being implemented at the moment was beneficial in ensuring that learners were prepared to be absorbed in the job market, its continuous review was necessary. According to Ayonmike, Okwelle and Okeke (2014), CBET was a training that was performance and standards based and might be linked to realistic work practices since it emphasized on skills acquisition and knowledge. Kufaine and Chitera (2013) underlined that CBET was a human resource development approach which allowed the learners to acquire skills that were necessary for the industry. The findings were also in congruence with that of Anane (2013) who posited that graduates from TVET who had gone through CBET acquired competencies which enabled them to set up their own businesses or were absorbed by the industries.

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 4. 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) ($M=4.169$, $SD=1.009$).

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.

Table 4: Employability Skills Acquired by Visually Impaired Learners

Employability Skills Acquired by Visually Impaired Learners	Strongly Disagree				Strongly Agree				Mean	Std Dvn
	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%	4.18	0.95			
Thinking skills (creative thinking, effective decision making, problem solving, reasoning skills, ability to learn)	0.00%	0.00%	10.80%	64.60%	24.60%	4.13	0.58			
Personal qualities (taking responsibility for actions, goal oriented, friendly, open, honest, meeting customer demands).	0.00%	3.10%	9.20%	66.20%	21.50%	4.06	0.65			
Integrity (honest, sound moral character and values)	3.10%	0.00%	3.10%	69.20%	24.60%	4.12	0.74			
Resource management (identifying, organizing, planning, and allocating resources; prioritizing; time and project management)	0.00%	7.70%	24.60%	44.60%	23.10%	3.83	0.87			
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%	4.15	0.73			
Systems management (understand and effectively work with social, organizational, and technological systems)	3.10%	1.50%	29.20%	49.20%	16.90%	3.75	0.86			
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%	3.53	0.86			
Adaptability (ability to adapt to changing work environments)	0.00%	3.10%	23.10%	50.80%	23.10%	3.93	0.76			
Work ethics (performing the assigned duties)	3.10%	0.00%	10.80%	47.70%	38.50%	4.18	0.86			

according to the laid down regulation, ability to design/make needed customer items within the set time)							
Professionalism (acting in a responsible manner, maturity, self-confidence)	4.60%	4.60%	1.50%	47.70 %	41.50 %	4.16 9	1.00 9
Average						4.00 7	0.81 1

A Correlation analysis was carried out in order to establish the association between applicability of CBET curriculum and acquisition of employability skills among visually impaired learners in TVET institutions in Kenya. The direction, strength and significance of the correlation between these two variables was tested. The findings outlined in Table 5 show that there was a strong, positive and significant correlation between the applicability of CBET curriculum and acquisition of employability skills among visually impaired learners in TVET institutions in Kenya ($r=0.677$, $p=0.000$, $p<0.05$).

Table 5: Correlation between Applicability of CBET Curriculum and Acquisition of Employability Skills among Visually Impaired Learners

		Acquisition of Employability Skills among Visually Impaired Learners	Applicability of CBET Curriculum
Acquisition of Employability Skills among Visually Impaired Learners	Pearson Correlation Sig. (2-tailed)	1	
	N	65	
Applicability of CBET Curriculum	Pearson Correlation Sig. (2-tailed)	.677** 0.000	1
	N	65	65

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

The findings implied that the applicability of CBET curriculum and acquisition of employability skills among visually impaired learners in these institutions were significantly associated and hence changed in the same direction. The findings were in agreement with that Anane (2013) who found that having gone through CBET, graduates either went into self-employment because they had acquired the competences to set up their own businesses or were absorbed by the industries whose skills requirement they had met by nature of their training.

Table 6 outlines the model summary results for applicability of CBET curriculum. The findings showed that the applicability of CBET curriculum explained a significant proportion of the changes in the acquisition of employable skills among visually impaired learners in TVET institutions in Kenya. This is explained by the coefficient of determination (R Square) of 0.458 which meant that 45.8% of the changes in the acquisition of employable skills among the visually impaired learners in TVET institutions under study was attributed to changes in the applicability of applicability of CBET curriculum in these institutions. The rest of the changes, 54.2%, were attributable to other factors not considered in this model.

Table 6: Model Summary for Applicability of CBET curriculum

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.677a	0.458	0.449	0.404336

a Predictors: (Constant), Applicability of CBET curriculum

5.0 CONCLUSIONS

The study concluded that without continuous training, the trainers in TVET institutions were equipped to implement the CBET curriculum especially for learners with visual impairments. Similarly it was concluded that competence based education and training curriculum influenced acquisition of employable skills among visually impaired learners in TVET institutions in Kenya

6.0 RECOMMENDATIONS

Based on the findings and conclusion drawn, the study made the following recommendations two;

the TVET institutions should put in place measures that ensure that the visually impaired learners with challenges in acquiring all the recommended competencies as per the curriculum requirement are assisted to be fully competent and the CBET curriculum should be fully adapted to the needs and concerns of the visually impaired graduates.

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