

**COMPETENCE BASED EDUCATION AND TRAINING AND
EMPLOYABILITY OF VISUALLY IMPAIRED LEARNERS IN TECHNICAL
AND VOCATIONAL EDUCATION AND TRAINING INSTITUTIONS IN
KENYA**

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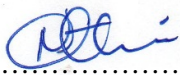
E83/7351/2016

**A RESEARCH THESIS SUBMITTED TO THE SCHOOL OF EDUCATION IN
PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE AWARD OF
THE DEGREE OF DOCTOR OF PHILOSOPHY IN CURRICULUM STUDIES
OF MACHAKOS UNIVERSITY**

OCTOBER - 2019

DECLARATION

This thesis is my original work and has not been presented for examination in any other university.

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DEDICATION

This thesis is dedicated to my daughter Maureen Mwendu who has been my constant source of encouragement and inspiration.

ACKNOWLEDGEMENT

I would like to acknowledge the high inspirational guidance of my supervisors Dr. Richard Kimiti and Dr. David Mulwa for their invaluable insights and constant constructive criticisms that enabled me to succeed in this endeavour. I wish also to acknowledge the support given to me by my employer, The Ministry of Education - State Department of Vocational and Technical Training. I cannot forget to thank my family members for encouraging me to take the course for my future engagements especially my parents John Muthini and Josephine Nthamba as well as my dearest uncle Bonaventure. My special gratitude goes to Fr. Joseph, Fr. Josephat and the late Fr. Michael who played a very important role towards the achievement of this goal. I do appreciate their support with inspiration. I am obliged to recognize all my lecturers, mentors and my colleague classmates for their motivation during the tough moments that led to this research. I extend my gratitude to Elizabeth, Jane, Bernard and Alphan who tirelessly typed, edited and printed my thesis. Last, but not least, I have to thank the Almighty God for His grace and strength during the period of study.

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ABSTRACT

Curriculum is the vehicle through which a nation empowers her people with the essential knowledge and skills, attitudes and values that allow them to be empowered for individual and general development. Therefore, the curriculum ought to meet the needs of an individual and also for the nation. This study explore competence-based education and training and employability of visually impaired learners in TVET institutions in Kenya; 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; examine the extent to which trainers' qualifications in CBET influence the acquisition of employable skills among visually impaired learners in TVET institutions in Kenya and establish the effect of competence based education and training on employability rates of the visually impaired graduates from TVET institutions in Kenya. The study was founded on job skilling theory by Dreyfus and Dreyfus and was complemented by apprenticeship skills formation theory by Brandt, Farmer, and Buckmaster as well as the ladder participation theory by Engestrom. The study applied a mixed methods research design. It targeted 2 principals, 20 Heads Of Departments (HODs), 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 Technical Vocational and Education Training (TVET) - Curriculum Development Accreditation and Certification Council (CDACC) officials, 10 Ministry Of Labour (MOL) officials, 10 members of civil society groups and 5 managers of industries giving a total of 269 respondents. The sample size was thus 49%. A census of the trainers was taken while purposive technique was used to sample the principals MOL officials, HODs, MOE officials, civil society groups and industry managers. Snowball technique was also used to select visually impaired graduates. Primary data was collected using questionnaires, interview schedules, and focused group discussion guide, visual images as well as observation schedules. Pilot study was conducted in Kerugoya Vocational Training for the Blind to test validity and reliability of the instruments. Qualitative data was analysed using content analysis majorly thematic analysis while quantitative data was analysed using descriptive and inferential analyses where Pearson correlation analysis was used to determine significant associations on the variables. Bivariate and multiple regression analyses were used in generating regression coefficients, t statistics and associated p values that guided the testing of the hypotheses. All tests were done at 0.05 level of significance. The study found that applicability of CBET curriculum ($\beta = 0.534$, $t = 7.294$, $p = .000$), adaptability of facilities used in CBET implementation ($\beta = 0.709$, $t = 9.459$, $p = .000$) and trainers' qualifications in CBET ($\beta = 0.881$, $t = 8.797$, $p = .000$) positively and significantly influenced the acquisition of employable skills among the visually impaired learners in TVET institutions in Kenya. The study also found that CBET positively and significantly influenced the employability rates of visually impaired graduates from TVET institutions in Kenya. The study further established that industry linkage and occupational standards had a significant moderating effect on the relationship between CBET and acquisition of employable skills among the visually impaired learners in these institutions. 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 also concluded that the adaptability of facilities used in CBET implementation and trainers' qualifications in CBET were key determinants of the acquisition of employable skills among these learners. Recommendations to MOE, MOL, TVET institutions, civil society groups, industries and VI graduates were made. Suggestions for further study were given.

LIST OF ABBREVIATIONS AND ACRONYMS

| | |
|----------------|--|
| CBET | Competence Based Education and Training |
| CDACC | Curriculum Development Assessment and Certification Council |
| CEO | Chief Executive Officer |
| COC | Centre of Competency |
| DTE | Directorate of Technical Education |
| EFA | Education For All |
| GOK | Government of Kenya |
| GS | Graduate School |
| HODs | Heads of Departments |
| IAE | Institute of Adult Education |
| ICT | Information Communication Technology |
| ILO | International Labour Organization |
| ITTEVI | Inclusive Technical Training Education for Visually Impaired |
| KNBS | Kenya National Bureau of Statistics |
| KNQA | Kenya National Qualification Authority |
| KQF | Kenya Qualifications Framework |
| KSB | Kenya Society for the Blind |
| KUB | Kenya Union for the Blind |
| KVTB | Kerugoya Vocational Training for the Blind |
| MOE | Ministry of Education |
| MOL | Ministry of Labour |
| MOP | Ministry of Planning |
| MTIB | Machakos Technical Institute for the Blind |
| NACOSTI | National Commission for Science Technology and Innovation |
| NCPWDs | National Council for Persons with Disabilities |
| NSPWDs | National Survey on Persons with Disabilities |
| OS | Occupational Standards |
| PPP | Private Public Partnerships |
| PWDs | Persons with Disabilities |
| SD | Sustainable Development |
| SDG | Sustainable Development Goals |
| SNE | Special Needs Education |

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| SPSS | Statistical Package for Social Sciences |
| STIDB | Sikri Technical Institute for the Deaf and Blind |
| TOTs | Trainers of Trainers |
| TVE | Technical and Vocational Education |
| TVET | Technical and Vocational Education and Training |
| TVETA | Technical and Vocational Education and Training Authority |
| UN | United Nations |
| UNCRC | United Nations Convention on the Rights of the Child |
| UNCRPD | United Nation Convention on the Rights of Persons with Disabilities |
| UNDP | United National Development Programme |
| UNESCO | United Nations Educational Scientific and Cultural Organization |
| UNICEF | United Nations Children’s Emergency Fund |
| USA | United States of America |
| USADF | United States of American Foundation |
| VI | Visual Impairment |
| VILs | Visually Impaired Learners |

CHAPTER ONE

INTRODUCTION

1.1 Background of the Study

The focus on development in the world today is directed towards Sustainable Development (SD). 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 (United Nations Educational Scientific and Cultural Organization (UNESCO), 2011) 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 Afeti (2014), 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 TVET, internationally, 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 local community (Anane, 2013). 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 and 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. Similarly, Anane (2013) described CBET as an industry and demand driven (outcomes-based) education and training programme based on well-defined occupational standards derived and generated from the industry. The idea of CBET 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 indicated 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.

Adding another angle to the outlined facts, Kufaine and Chitera (2013) stated that implementation of CBET in developed countries is geared to the attainment and demonstration of skills to meet industry specified standards. The developed countries are thus seeking to create an internationally competitive workforce by reforming its education and training systems. In line with changing structures of work and economy globally, these States 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. However, Abban and Quarshie (2016) view is that, components factored in CBET should inclusively consider diversified needs for visually impaired learners since after graduating, they have been unable to secure employment due to lack of competency and mismatch of the skills acquired and available jobs in the world of work. This is in line with the United Nation Convention on the Rights of Persons with Disabilities (UNCRPD) which stresses the empowerment of PWDs including the visually impaired. Article 24 of the Convention on Education identified the rights of PWDs to inclusive education without discrimination, to acquire life and social skills and access to employment (United Nations International Children's Emergency Fund (UNICEF), 2000).

Throughout the world, and in particular the countries of Sub-Saharan Africa, governments are renewing efforts to promote TVET with the belief that skill formation enhances productivity and sustains competitiveness in the global economy. According to Bhuwanee (2016), in recent years, concerns have been raised by most African countries about the move towards making TVET complementary to CBET. Abban and Quarshie (2016) pointed out that the paradigm shift towards practical skills training with TVET in Africa is increasingly being reshaped to make it more attractive, efficient and effective.

One of the most important features of CBET, as recognized by African 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 (Hegarty,

2011). The main challenge for the learners with visual impairment is related to lack of adapted CBET curricula, sophisticated workshop equipment, among others which hinder them from adequately attaining quality skill competence leading to unemployment upon graduating. It is clear that the uptake and utilizations of learners and graduates with visual impairment in TVET institutions in Africa receive limited attention especially with regard to their employability in the modern organizations and society.

The goals of education in Kenya indicate how TVET is integrated in determining solution of challenges associated with the development agenda of the country. The education goals 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, skills and 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 CBET at all levels of education. According to the Ministry of Planning (MoP) (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. The Kenya Policy Framework on Technical and Vocational Education and Training (2012) states that CBET is not flexible enough to meet the technological changes and diverse needs of the learners. Bunyi and Mumo (2015) contend that CBET curriculum has not been shaped to endorse quality of service envisioned to be delivered to learners with special needs and more so the visually impaired. This explains why in spite of the introduction of CBET in TVET institutions in Kenya, it has not attracted many visually impaired learners to enrol due to low of employment in their respective fields of training.

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 unfairness 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. In a similar vein, there was discontent among customers served by people with visual impairment since they are perceived as not competent (Palmer, 2017). This was a strong pointer which necessitated for a study to establish CBET and employability of visually impaired learners in TVET institutions in Kenya. 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).

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 acquired by 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.

In addition, the numbers graduating with visual impairment has not been fully accepted in the society as individuals having the capacity to perform acquired skills. This has created some partiality as more workforces were ignored due to disability. Furthermore, the employers have reservations in deploying people with visual impairment because they are alleged as burden in industry and as such that employers' trust is relatively low. In another reflection, visually impaired learners are capable of becoming entrepreneurs and self-employed; however, literature on this matter is quite scanty. Moreover, literature which is required to shed more light on matters related to visually impaired learners' training and employability is not comprehensive. It is upon this criticism that this research is built.

1.3 Purpose of the Study

The purpose of this study was to determine the influence of competence based education and training approach on the employability of visually impaired learners in technical and vocational education and training institutions in Kenya. The study further established the employability rate of visually impaired graduates who pursued training using CBET.

1.4 Objectives of the Study

The objectives of the study were:

- i. To determine the influence of applicability of competence based education and training curriculum on acquisition of employable skills among visually impaired learners in TVET institutions in Kenya.
- ii. 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.
- iii. To examine the extent to which trainers' qualifications in CBET influence the acquisition of employable skills among visually impaired learners in TVET institutions in Kenya.
- iv. To establish the effect of competence based education and training on employability rates of the visually impaired graduates from TVET institutions in Kenya.

1.5 Hypotheses

The following hypotheses were tested in this study;

- i. Ho₁: Applicability of CBET curriculum does not significantly affect the acquisition of employable skills among the visually impaired learners in TVET institutions in Kenya.
- ii. Ho₂: Adaptability of facilities applied in CBET implementation does not significantly affect acquisition of employability skills among visually impaired learners in TVET institutions in Kenya.
- iii. Ho₃: Trainers' qualifications in CBET do not significantly influence the acquisition of employable skills among visually impaired learners in TVET institutions in Kenya.
- iv. Ho₄: Competence based education and training does not significantly impact on employability rate of the visually impaired graduates in Kenya.

1.6 Significance of the Study

The results of this study would be of importance to various stakeholders. The study findings if adopted would be of great benefit to the Ministry of Education (MOE) and parties involved in the curriculum development for TVET institutions by providing evidence on the areas of the CBET curriculum that needed to be developed or reviewed to make it more applicable in the context of persons with disabilities and ensure that the number of visually impaired graduates from TVET institutions that were competent was increased. The findings would help the ministry to identify some of the gaps in the development of the curriculum which would ensure adequate reforms are undertaken

and effective strategies for implementing this curriculum enhanced towards increased the employability of the VI.

The study findings would also benefit the Government of Kenya by highlighting the needs of TVET institutions in ensuring that CBET is effectively implemented especially for persons with special needs and what strategies can be used to ensure efficient mobilization and allocation of resources to meet the objectives of this education reform. The study could be an eye opener for the GOK through the MOE to assess the preparedness of TVET institutions in terms of facilities and infrastructure and also staffing towards the implementation of the CBET programmes.

The findings would also help the Ministry of Labour to assess whether it has adequately developed the required occupational standards in conjunction with other stakeholders that are needed in guiding the skills taught in TVET institutions especially in the context of learners with visually impairments and whether the framework for ensuring that the existing standards are adhered to by all concerned parties are efficient.

The study findings would also help the management of the TVET institutions under study in evaluating the effectiveness of the strategies employed in implementing CBET based on whether they are able to produce graduates that are competent and well prepared for the job market. This study would help in the assessment of the strength and weaknesses of the strategies applied and what the institutions can do on their part to enhance the employability of their graduates.

The study findings would further assist the industry players in assessing whether they have offered adequate support to TVET institutions that ensures that their learners are adequately linked to industries and also whether they recognize the capabilities of the visually impaired persons that have been declared competent as per the CBET requirements. The study would assist these industry players in recognizing their role in ensuring that learners going through CBET are adequately prepared for the job market.

The study will also contribute to the expansion of the body of knowledge in this study area especially by providing a Kenyan perspective of the subject matter and the findings of the research could provoke further areas of research.

1.7 Limitations of the Study

The researcher encountered various limitations while conducting this research. First, the respondents were tempted to give socially acceptable answers thereby yielding biased data. To mitigate this challenge, the researcher clearly explained the purpose of this study and the benefits that would be reaped from the research. Some respondents also tended to conceal some information due to fear of victimization by the institutes' authorities. The researcher mitigated this obstacle assuring the respondents that confidentiality would be upheld and ensuring that the respondents gave their responses anonymously where personal identifiers such as the names of the respondents were not disclosed. The area of study was also quite expansive hence accessing the respondents was a great challenge. To deal with this hurdle, the researcher contracted research assistants who helped in the data collection exercise by ensuring that they booked appointments with the study participants in good time and administered the research

instruments in a time that was convenient for the respondents which minimized the need for follow ups. There was also limited literature related on CBET and employability of visually impaired graduates in Kenya as it was recently introduced. For this reason, most of the literature reviewed was drawn from studies carried outside Kenya.

Time was also a challenge as the institutions have a programmed timetable hence the trainers were busy. To solve this problem, the researcher collected data during free hours at break time, lunch time and after lessons. Given that the researcher was attached to one of the institutes considered in the study, their prior knowledge pertaining the institute could lead to opinions that were pre conceived leading to bias in selection of methods and in the process of drafting questions which could in turn affect the findings of the inquiry. To mitigate against this challenge, the researcher ensured that they remained focused and objective throughout the study. This was achieved by taking into consideration other researchers' views and findings. The other way they countered the challenge was by considering the comments of the helped to mitigate the challenge of the expansive area of study and in random sampling of the graduates.

1.8 Delimitations of the Study

This study was confined to determining the influence of competence based education and training approach on the employability of visually impaired learners in technical and vocational education and training institutions in Kenya. The study also established the employability rate of visually impaired graduates who had undergone CBET. The study only considered graduates from Machakos Technical Institute for the Blind and

Sikri Technical Institute for Deaf and Blind which enrolled visually impaired learners. The study majored on the visually impaired graduates who were employed.

1.9 Assumptions of the Study

This study was guided by four assumptions; it was assumed that the Institutes' administrators had documented information on trainers' academic and professional qualifications of visually impaired graduates who were taught using the CBET curricula. It was also assumed that the CBET curriculum, the facilities applied in its implementation and trainers' qualifications in CBET were relevant factors likely to affect the level of acquisition of employable skills among the visually impaired learners and their employability rates after graduating. The study likewise assumed that the findings obtained would be representative of visually impaired learners/graduates from TVET institutions in Kenya. The study further assumed that the respondents were knowledgeable about the study subject and that they would provide honest and objective responses to the questions asked besides being cooperative throughout the research process.

1.10 Theoretical Framework

The theory adopted in this study was the job skilling theory by Dreyfus and Dreyfus (1986) cited by Kitainge (2017). It was complemented by apprenticeship skills formation theory by Brandt, Farmer, and Buckmaster (1993) and the ladder participation theory by Engestrom (1999) cited by Ngure (2013). Job skilling theory explains the skills formation process which one must go through before reaching the level of expertise. The stages are as follows: The novice phase is the stage in which the

trainee acts only according to the instructions specified; the amateur stage is where he is guided to do something in a clear-cut way. The competent stage is where the trainee is able to perform the tasks assigned and the final stage is proficient level where trainees are able to see the important benefits of the skills, which can be demonstrated better while expert trainees are no longer, restricted as they are able to perform those tasks on their own.

Similarly, Brandt, Farmer, and Buckmaster explain the theory of apprenticeship skills formation through five stages which are different from those proposed by Dreyfus and Dreyfus cited by Kitainge (2017) but involve similar aspects of staging skills level. The apprenticeship skills formation model is divided into two stages i.e. cognitive modeling and behavioural modelling. Cognitive modelling entails the scrutiny of the characteristics of the trainee. This stage solely involves the scrutiny of the behaviour of the trainee. Gradually, the levels improve the ability of trainees hence they are finally able to perform according to the needs of the next level of self-directed learning. Behavioural modelling is the final stage when they are capable of generalizing the skills of the trainee in other responsibilities that entail analogous skills. The root for developing of these skills is founded on the concept of apprenticeship, which is derived from a variety of fields.

Ngure (2013) also discussed the ladder of participation theory based on learning to grow by Engestrom (1987). In the early stages, trainees imitate the behaviour studied. Then, they go to the next level where the trainees who were able to do things themselves with little error begin to dominate. Training for skills gives confidence to

the trainees, allowing them to enter the next stage. The final stage is reached when the trainees are capable of teaching the skills they have acquired to others. These three skills formation process trainees learn from instructors in stages. The skills upgrading method is seen solely in terms of individual skills while not gazing at the social processes that support the abilities development process (Ngunjiri, 2013).

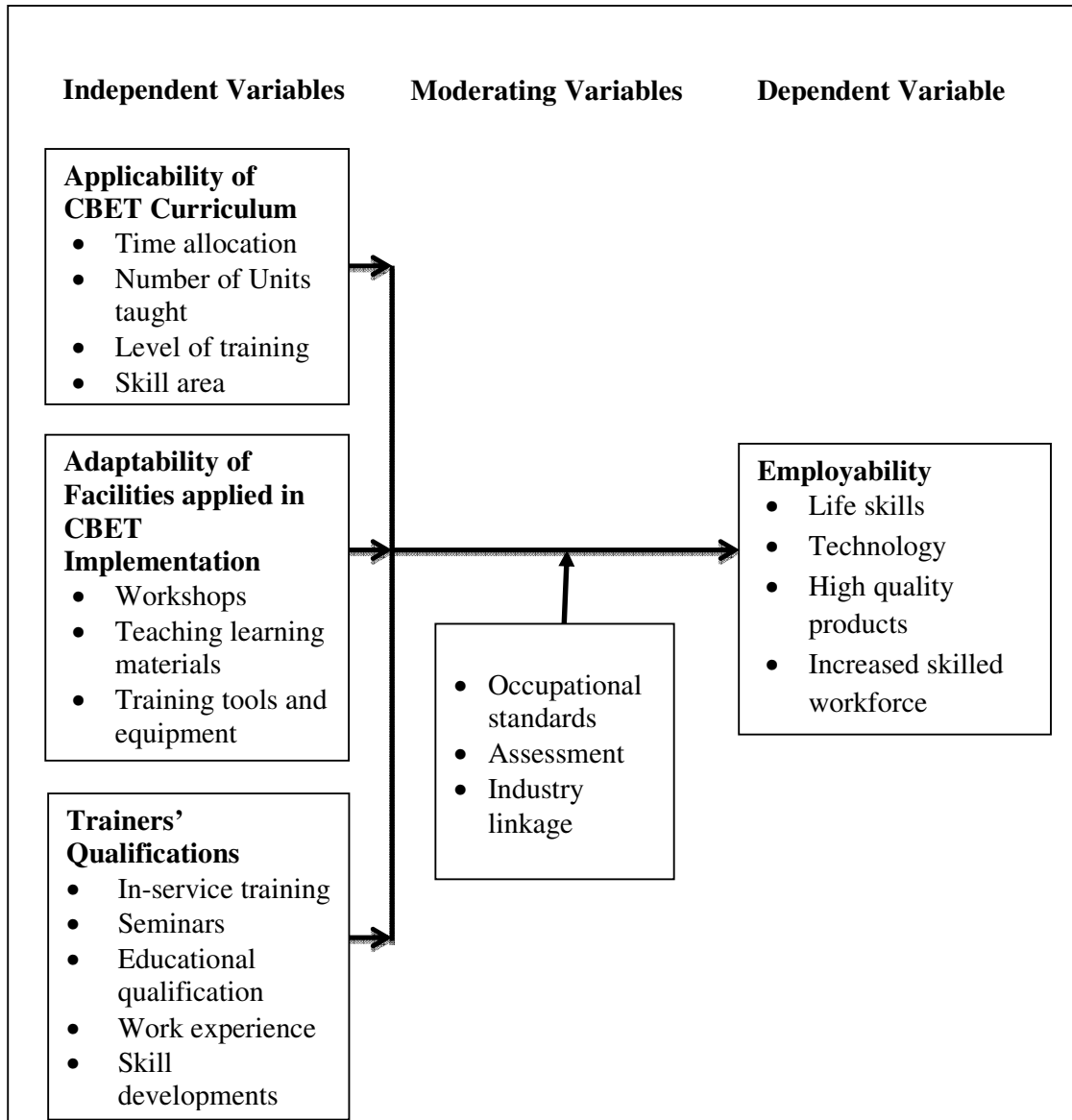
According to Tarno, Simiyu, Kitainge and Rono (2017), the field of vocational training emphasizes attaining of skills through experiential learning; this can be realized by teaching the skills in sequential stages. In line with this study, this means that the visually impaired learners will learn through practicing the skills in stages as suggested in the above discussed theories. To achieve this, the CBET curriculum content should be broken into small teachable tasks as a way of considering the VILs. Since visually impaired learners are unable to see, the trainers should explain what they are doing, as well as allowing the learners to demonstrate. They should also be given a chance to touch and feel the final products. This means the trainer should use appropriate teaching methods to meet the needs of the visually impaired learners.

Progressively, the trainer should allow the learners to practice the skills at their own pace. Here, the trainer will be guiding them as they perform the tasks. This to some extent calls for adapted facilities for easy acquisition of skills. The learning environment should also be least restrictive for easy mobility among VILs. Consequently, learning will have taken place for experience is based on the notion that individuals don't have the understanding of the elements of thought that remain otherwise unchanged but instead formed and reformed through experience. This

translates to acquisition of employable skills among VILs hence high chances of employment upon graduation.

1.11 Conceptual Framework

The study was conceptualized based on the variables used. The independent variables which were, applicability of CBET curriculum, adaptability of facilities and trainers' qualifications were expected to have an influence on the dependent variable which was employability of visually impaired graduates. Moderating variables were occupational standards and industry linkage which affected the strength of the relationship between independent variables and dependent variables. Indicators of competent graduate included; communication, technology, thinking, teamwork, reliability, integrity and work ethics. The conceptual framework is illustrated in Figure 1.1.



Source: Researcher 2019

Figure 1.1: Competence Based Education and Training and employability of visually impaired learners in Technical and Vocational Education and Training institutions.

1.12 Operational Definition of Terms

Adapted curriculum: This is where the regular curriculum is examined in detail to ascertain its applicability to a specific group of learners with special needs. It is then modified to suit the specific learners.

Competence: Possession and application of knowledge, skills and attitudes for visually impaired learners to perform work activities to the standard expected in the work place.

Competence based education and training: An approach to teaching and learning used in learning concrete skills than abstract learning in a special TVET institution.

Employability: A set of achievements, understandings and personal attributes that enable a visually impaired graduate to gain employment and perform successfully in the chosen occupations.

Employment: An act of involvement of VI graduates in an occupation with an aim of earning a living. The forms of occupations may either be informal or formal.

Facilities: Are resources provided to visually impaired learners to exploit every opportunity in acquiring taught skills. These include; workshops, training equipment, training tools, infrastructures, instructional materials and any other relevant material resource.

Technical and vocational education training: is a range of learning experiences which includes acquisition of practical skills, attitudes and knowledge relevant to the world of work

Training: Act of imparting particular skills to a trainee.

Visually impaired graduates: Blind and low vision persons who have attained CBET in special TVET institutions.

CHAPTER TWO

REVIEW OF RELATED LITERATURE

2.1 Introduction

This chapter focuses on contributions of other scholars on the following; overview of TVET and CBET in Kenya, applicability of CBET curriculum, adaptability of facilities of applied CBET implementation in TVET institutions, trainers' qualifications in CBET and relationship with the acquisition of employable skills among visually impaired learners in TVET institutions and employability rates of the visually impaired graduates in both private and public sector. Research gaps identified are also discussed in the chapter.

2.2 Overview of TVET and CBET in Kenya

Since independence in 1963, TVET in Kenya has experienced both structural and curricula changes that have had an impact on graduates and the national development plan. Over the years, the development plan of Kenya has consistently stated one major educational objective: producing a properly and effectively trained, disciplined and patriotic youth that can in turn make a positive contribution to the development of the nation. The development plan upholds the significance of TVET. On the other hand, TVET is a comprehensive term referring to the educational process. It involves, in addition to general education, the study of technologies and related sciences, and the acquisition of practice, skills and knowledge relating to an occupation in various sectors of economic and social life (UNESCO, 2011). TVET is therefore fundamental to the world of work in Kenya. TVET is thus one of the major key drivers to unlocking the problems of unemployment and accelerating the economy through skills development.

According to the Republic of Kenya (2018), the government recognizes TVET as one of the sub-sectors of education and training with great potential of transforming the growth of all other sectors of the economy. It plays a key role as a producer and supplier of all the technical and vocational skills that are required in manufacturing, extraction, agro- processing, infrastructure and energy production which are fundamental ingredients to economic development. In order to upscale the generation of these important skills, the Kenya Government has embarked on ambitious reforms which include increasing access through provision of modern and state of the art training equipment, curriculum review and capacity building of TVET trainers to ensure quality and relevance of TVET.

The role of TVET as an effective means of empowering society to engage in productive and sustainable livelihoods cannot be overemphasized. Comparing the diversity in the provision of TVET across and between countries, conclusions can be drawn about disparities in historical, political, educational, cultural and economic development. Thus, TVET has not escaped changes brought about as a result of political, economic and social pressures. Variations abound in terms of structures, operating conditions and outcomes. Thus, TVET curricula vary according to the level of training.

Despite the crucial role played by TVET, in the recent past, it is evident that there is skill mismatch issues that have impeded smooth training to employment transition for many graduates from TVET institutions (UNEVOC, 2013). To mitigate this challenge, CBET was introduced in TVET institutions in Kenya in the year 2015 and its policy

was launched on 24th October 2018. CBET is a mode of training where emphasis is placed on the acquisition of competence such as knowledge, skills and work behaviours. It is designed to meet the demands of industry and business. Consequently, CBET itself may be described as training which is performance and standards based and related to realistic workplace practices. It is focused on what learners can do rather than on the courses they have done. According to Kitainge (2017), CBET curriculum in Kenya is envisaged to lead to production of relevant skills that match the requirements of industry, thereby ensuring employability of TVET graduates. Thus, the aim of CBET is to prepare learners to become more effective in real workplaces, which means that the acquisition of competences takes into account the requirements of companies and industry.

In order to enhance quality in CBET, the Government of Kenya has set up and operationalized the TVET Curriculum Development, Assessment and Certification Council (CDACC) which is in charge of the development and reform of the TVET curriculum from demand to supply driven CBET which is equally flexible and in liaison with industry. In addition, TVET CDACC has coordinated the development of 88 occupational standards by industry experts and packaged 88 respective CBET curricula. Notably, the government has also set up the oversight and regulatory agencies which include TVET Authority (TVETA) to accredit institutions and assure quality in TVET.

Another perspective is that, the Kenya National Qualification Authority (KNQA) is also mandated to develop and implement the Kenya Qualifications Framework (KQF)

and carry out the equation of the foreign acquired certificates and qualifications (Bunyi & Mumo, 2015). Thus, CBET is revolutionizing Kenya's TVET landscape with an aim of enhancing development. Nevertheless, CBET curriculum is not clear on how it has been adapted to meet visually impaired learners needs who are enrolled in TVET institutions. This study established that lack of adaptability of the curriculum has negative effect on employability of VI graduates.

2.3 Applicability of CBET Approach on Acquisition of Employable Skills to Visually Impaired Learners

Curriculum is an instrument used by a nation to empower its people with the needed knowledge and skills, attitudes and values with the aim of realizing individual and general development. Therefore, curriculum must meet the requirements of both an individual citizen and the nation at large. Ayonmike, Okwelle and Okeke (2014) investigated the implications of competency based education and training in Technical and Vocational Education (TVE) on the sustainable national security and development in Nigeria. This was based on a desktop study where published reports and statistics were reviewed. According to the study, CBET was a stratagem whose focus was on vocational training envisioned to put much emphasis on skills acquisition and knowledge. The study described CBET as a training that was performance and standards based in order to achieve realistic work practices. CBET as pointed out by the study was also learner focused and functioned naturally with sovereign study and with the trainer who acted as a facilitator. This study by Ayonmike, Okwelle and Okeke (2014) argued that the introduction of CBET in TVE programmes helped to tackle the problem of lack of employable skills among TVE graduates from Nigerian institutions.

According to the study, TVE programmes reduced youth unemployment and by extension it helped to address various security and development challenges confronting Nigeria. The authors noted that CBET aimed at preparing learners more effectively for real workplaces, which meant that the acquisition of competences took into account the requirements of companies and industry. This study was different from this current research since it focused on TVET learners/graduates and the sustainable national security and development in Nigeria such that the outcomes cannot be automatically generalized. Hence, the current research focused on the visually impaired learners/graduates in Kenya since this group of learners faced different challenges and dynamics which influenced the extent to which CBET curriculum was relevant in enhancing their employability. This study was able to shed light on how CBET curriculum could be applied in the context of persons with special needs such as the visually impaired which was not covered in this previous study.

Moreover, learners who are visually impaired find different individual skills more difficult than others. In their study, Sullivan and Downey (2015) examined the shift in educational paradigms where a shift from traditional to competency-based education for diverse learners was assessed. This qualitative study used semi-structured interviews with school personnel to document perspectives of the programmatic shift. The data for this study was gathered from administrators and instructors in a small alternative school located in the Northwestern United States. The study found that CBE learning method allowed learners to acquire those individual skills they found challenging at their own pace, practicing and refining as much as they could.

Subsequently, as highlighted by the study, the learners were able to move swiftly through supplementary skills to which they were more adept. Thus, this type of learning required mastery of every individual learning outcome making it very well suited to learning credentials in which skills acquisition was very essential. This is in line with the Job skilling theory which states that the acquisition of skills takes place in stages. This study focused on CBE in the context of high school learners in Netherlands which was a different focus from this study which not only looked at competency based education but also considered training of learners in tertiary institutions specifically TVET institutions in Kenya. This current study had a different objective from that of Sullivan and Downey (2015) since it tested the effect of CBET curriculum not only on the acquisition of employable skills among learners but also their employability rates after graduating. However, the emphasis of this current study explored the relevance of CBET curriculum for learners with special needs in particular the visually impaired which was not considered in the previous study.

Kufaine and Chitera (2013) explored the role of competency based education and training in technical education problems and perspectives in Malawi. In the study, grounded theory analysis was employed. The study found that CBET was a human resource development approach which had given expectation to stakeholders that the gap between labour market and education would be reduced. The study emphasized that CBET approach was important since it helped the learners to acquire skills that were necessary for the industry; hence, the approach demanded involvement of industry during training so that the competence experiences may help the students to put into

practice the skills that were appropriate for the industry. The findings of this study were in line with that of Kaaya (2012) who examined how quality and competence of technical vocational education and training output could be improved through vocational school cooperation with industry. The study divulged that some individuals perceive CBET as the answer to the improvement of education and training to address the complexities of the current world. The study noted that CBET entailed training to industrial specific standards as opposed to relative personal achievements. The study applied a document analysis approach where the focus was on Uganda's current vocational school cooperation with industry.

Even though the studies by Kufaine and Chitera (2013) as well as Kaaya (2012) focused on CBET curriculum and its impact on employability of learners in TVET institutions, they did not delineate the relevance and effect of such curriculum on the employability of learners with visual impairments which was a glaring gap and a crucial focus of this current study. Furthermore, these studies were conducted in different contexts with an aim of improving vocational school cooperation with industry, and as such the findings of such studies could not be generalized to fit the case of TVET institutions in Kenya due to differences in situational conditions, particularly, the level of adaptation of the CBET curriculum to the needs of the visually impaired.

Remarkably, Kaaya (2012) provided further insight into the importance of CBET by summarizing that CBET was based on competency standards, focused on outcomes not inputs, involving industry, taking account of recognition of prior learning, modularized, self-paced, assessment based on demonstration of skills rather than knowledge,

assessment criterion referenced and ungraded, flexible delivery, makes the technical institutions autonomous and competencies are widely recognized. However, this study did not shed light on how CBET would help the persons with disability especially the visually impaired graduates from TVET institutions since it is learner centred, hence, a concern in this study. This study filled this gap by examining the influence of applicability of CBET curriculum on the acquisition of employable skills among visually impaired learners and also the employability rates of graduates from TVET institutions. This study also applied a different methodological approach from the one considered in this current study which adopted a mixed methods research design.

CBET is anchored on a number of objectives as noted in the study by Kavindi (2014) which investigated the implementation of competence based curriculum in certificate teachers' colleges in Tanzania. The study employed a comparative case design between two teachers' colleges (public and private) located in Mbeya region of Tanzania. The study was qualitative in nature and employed qualitative data collection methods, comprising interviews, focus group discussions, classroom observation and review of documents. The study highlighted that the main objectives of CBET were to: establish occupational standards which could be measured, train competent individuals with transferrable skills, link education and training to the skills needed by employers, establish a quality assurance system which will enhance confidence, promote lifelong learning through progression and knowledge transfer, encourage individuals to achieve their full potential and develop attitudes and abilities necessary to respond to the rapid changes.

The study suggested that regular curriculum reforms were inevitable so as to improve the quality of education offered in colleges so that the demands and needs of Education for All (EFA) could be met. It is deducible that the study carried out by Kavindi (2014) focused on the training of teachers or trainers such that its outcomes differ from the purpose of this current study. Moreover, this study had a different objective since it focused on the CBET curriculum at public and private colleges, while this current study assessed the applicability of CBET curriculum among visually impaired learners. Further, the current study focused on the acquisition and relevance of employable skills among learners in TVET institutions more particularly the visually impaired and their employability after graduation. Therefore, although the study carried out by Kavindi (2014) was about CBET curriculum, it depicted a glaring gap in relation to the target population as well as circumstantial setting and prevailing conditions from that of TVET institutions in Kenya.

In the same vein, Bunyi and Mumo (2015) explored competency-based education in Kenya focusing on how the constraints for successful implementation of the approach could be dealt with. This was a desktop study. The study noted that the development of a competency-based curriculum entailed clearly identifying the competencies that learners were required to attain at different points of their education and suggested that for the learners to attain these competencies, adaptation of the CBET curricula was necessary, even though they did not give in-depth details on the same. This was checked in this study since the influence of applicability of CBET curriculum on acquisition of employable skills among learners was tested. This previous study had a different objective from that of this study which focused on influence of applicability of

CBET curriculum on acquisition of employable skills among visually impaired learners and also their employability rates after graduating. The study was based on a desktop study while this study applied a mixed methods research design hence a methodological gap since this study was able to test the relationship between these variables empirically.

CBET programmes have distinctive characteristics. In their study, Norton (1987) assessed the importance of competency-based education and training as a humanistic and realistic approach to technical and vocational instruction. Norton summarized the characteristics of these programmes as follows: competencies are carefully selected, 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, methods of instruction involve mastery learning, the premise that all participants can master the required knowledge or skill, provided sufficient time and appropriate training methods are used, participants' knowledge and skills are assessed as they enter the program and those with satisfactory knowledge and skills may bypass education and training or competencies already attained. The author in support of CBET believed that competency-based training should be used as opposed to the "medieval concept of time-based learning" arguing that using the traditional education model for training was inefficient. This study provides a general discussion of the CBET curriculum but did not test the outcomes of implementing this curriculum which was the focus in this current study.

More characteristics of CBET are stated by Anane (2013). In her study on competency based training with a focus on the quality delivery for Technical and Vocational Education and Training institutions in Ghana, Anane (2013) highlighted that under CBET; learning should be self-paced, flexible training approaches including large group methods, small group activities and individual study are essential components, a range of support materials that may include audiovisual, print and simulations (models) keyed to the skills being mastered is normally utilized and therefore a satisfactory completion of education and training is anchored on achievement of all specified competencies. According to the study by Anane (2013), the testimonies from industry about the performance of the products of the pilot CBT programmes in the nation were enough evidence that if a nation emphasized on skills development through competency-based training, there was sustainable development for industries and the nation as a whole.

Further, the study by Anane (2013) recommended that the adoption of systematic and pragmatic strategies to ensure sustainability of CBT system was necessary. The study adopted a document analysis approach, while drawing attention to the support materials such as audiovisual, print and simulations. These support materials cannot be aptly applicable to learners with visual impairment and this explains why the current CBET curriculum is not sufficiently inclusive. Hence, the study by Anane (2013) did not discuss how the mentioned CBET characteristics and outcomes could translate in real learning situation especially for learners with special needs in particular the visually impaired. This is why this study sought to fill this knowledge gap by investigating the influence of applicability of CBET curriculum on the acquisition of employable skills

among the visually impaired learners and also their employability rates after graduating.

The study by Anane (2013) concluded that CBET assessment therefore measured whether a learner was competent or not yet competent. It signified that only two likely outcomes could be the product of the assessment process, for instance, they were competent or they were not yet competent. The assessment according to Anane was not designed to measure a learner who was 30% or 50% or 80% competent. If they did not meet the standards, they did more practice, after which they were assessed again. On this note, the study carried out by Anane (2013) did not clearly discuss how a visually impaired learner could be effectively assessed given that these learners had different needs and faced specific challenges when compared to sighted learners. This knowledge gap was filled in this study since it explored the level of acquisition of employable skills among the visually impaired learners who had gone through the CBET curriculum.

In the United States, based on a literature review, Ford (2014) traced some major landmarks in the growth of competency-based education including the development of concepts of curriculum mapping and competency frameworks, the current state of CBE implementation, and challenges remaining. The study identified that the structure of CBET as described by the nation's Educational Policy and Entrepreneurial Research outlined five essential elements of a CBET system which are: competencies to be achieved to be carefully identified, verified and made public beforehand, criteria to be employed in evaluating the achievement and the conditions under which the

achievements are going to be assessed are explicitly stated and made public in advance, the instructional program provides for the individual development and evaluation of each of the competencies specified, assessment of competency takes the participant's knowledge and attitudes into account but requires actual performance of the competency as the primary source of evidence and participants progress through the instructional program at their own rate by demonstrating the attainment of the specified competencies.

The study by Ford (2014) concluded that CBET curriculum emphasized demonstrable workforce relevant outcomes or the application of acquired knowledge. Similar to the study by Anane (2013), this study did not discuss how the mentioned CBET elements were translated in real learning situation especially for learners with special needs and particularly the visually impaired. This study sought to fill this knowledge gap by investigating the influence of applicability of CBET curriculum on the acquisition of employable skills among the visually impaired learners and also their employability rates after graduating.

Okwelle (2016) assessed employers' perceptions of the role of technical and vocational education (TVE) in sustainable development in Nigeria. The study used a descriptive survey design. The study indicated that the then TVET programmes did not prepare sufficient skilled and semi-skilled workers to satisfy the needs of Nigeria's workforce. In terms of the employability of TVET graduates, the study noted that employers in Nigeria upheld that TVET graduates were not well prepared to enter the competitive workplace and did not possess technical skills in their areas of specialization. The study

recommended that a balanced approach should be emphasized in the school curriculum through the integration of technical employability and entrepreneurial skills in TVET and that curriculum planners and implementers needed to enhance skill development strategies.

There is therefore a glaring gap ensuing from the study by Okwelle (2016) in that its focus was on employers' perceptions regarding technical and vocational education. The implication is that even though the study by Okwelle (2016) touched on the objectives of this current study, it did not delineate the impact of the CBET curriculum on the acquisition of employable skills among learners with special needs and their employability rates particularly those with visual impairments which was the focus of this study since the applicability of the CBET curriculum to the needs of different learners could be affected by different individual dynamics such as disability status. The study was also conducted in different context from that of this study, hence, generalizations could not be done without conducting research in the current context.

In addition, to determine whether a learner has imbibed what he or she has learnt, an assessment is organized for all learners. Killen (2010) while focusing on teaching strategies for quality teaching and learning with a particular concentration on South Africa's National Curriculum indicated that assessment was based on the learning outcomes specified in the learning unit specifications developed for each course. In CBET therefore, as highlighted by Anane (2013) in her study on the role of competency based training in quality delivery for TVET institutions, assessment is the process of collecting evidence of a trainee's performance, upon which appraiser judges whether or

not, or the extent to which a trainee has met the performance requirements of the learning outcome laid in a particular unit and then making a decision, based on these judgments as to whether a learner has achieved the learning outcomes as a whole or not. Expressly, it is the process of measuring learner's skills, knowledge and understanding against the occupational standards laid down for a particular unit. If the learner proves to be competent, they qualify for that unit. The study by Killen (2010) concentrated more on the features of the CBET curriculum which was a different focus in this current study since it not only explored the CBET curriculum but also investigated the outcomes of applicability of this curriculum particularly among learners graduates with visual impairments.

Deißinger and Hellwig (2011) on their part studied the structures and functions of competency-based education and training based on a comparative study approach where perspectives of CBET in Germany, England, Scotland and Australia were compared. The study indicated that CBET enabled employees not only to increase their knowledge and skills at the workplace but also to gain nationally accredited certificates for workplace-based learning. The study divulged that since CBET was an industry and demand driven education and training programme, its products had a high demand on the job market. Moreover, having gone through CBET, graduates from TVET institutions either went into self-employment because they had acquired the competences to set up their own businesses or were absorbed by the industries. This study even though similar to that of this study, was conducted in a different context and hence the findings could not be automatically generalized to fit the Kenyan case. In addition, the study by Deißinger and Hellwig (2011) did not reveal how CBET

curriculum could cater for the needs of persons with special needs particularly the visually impaired due to the specific challenges they faced due to their status which was the focus of this study.

Likisa (2018) explored the challenges and prospects of competency-based education focusing on Adama Science and Technology University alumni students and Hawas TVET College, Adama, Ethiopia. The study applied a descriptive survey design in order to examine whether the TVET curricula was clearly aligned with occupational standards to ensure graduates' employability. It also examined whether the curriculum was adequate to ensure entry-level competence. From the analysis of data, it was found that CBE was not clearly aligned with occupational standards, and as such it indicated that the alignment of CBE curriculum with occupational standards was challenging due to the fact that very few curriculum experts participated in curriculum development.

In addition, Likisa (2018) asserted that most teachers who participated in the curriculum development did not have the expertise in theories and principles of curriculum development. Also, teachers, Center of Competency (CoC) experts, and alumni students' awareness of the nature, focus, assessment, and curriculum development of CBE was found to be inadequate. This study showed the need to align CBE with occupational standards to ensure entry-level competence. The study also indicated that there was also a need to create awareness about the nature, focus, assessment and curriculum development of CBE among curriculum designers/teachers. The study recommended for continuous intensive and extensive training to be given on CBE curriculum to raise the awareness of teachers and experts who were supposed to

develop CBE curriculum. This study was conducted in a different setting with different contextual conditions from that of TVET institutions in Kenya hence the findings could not be generalized. In this current study, the moderating effect of occupational standards on the relationship between CBET and acquisition of employable skills among learners was explored, different focus from that of the study by Likisa (2018).

Ndile (2018) examined the influence of competency based technical training on youth employability focusing on technical training institutions in Nairobi. The study applied a descriptive study design where questionnaires were used for data collection. According to the findings, the mode of curriculum delivery for CBET approach was quite unique, being learner-based compared to that of conventional traditional approach which was less market driven and did not work to meet the occupational standards from the industry. The study further established that learners from CBET programmes performed better at the workplace as they had key and necessary skills and experience as opposed to traditional cohorts who had little exposure to the labour market. According to the study, in CBET training, the emphasis on learners acquiring knowledge, skills and the right attitude for the job market made it competitive and attractive.

The study by Ndile (2018) underscored that the CBET method and curriculum development was based on industry occupational standards that gave the student an upper hand in being employed faster as they were deemed as being more competent in a specific skill. In summary, the study showed that there existed a strong relationship between the mode of curriculum delivery and employability among the youth in Nairobi. This was attributed to CBET graduates who were highly absorbed into the

labour market compared to non-CBET graduates who were less recommended for jobs as shown by the responses from the employers and trainers.

Even though this study was related to the current study, it focused on learners in general without delineating the impacts of CBET on learners with special needs especially the visually impaired. This current study filled this gap by assessing the influence of applicability of CBET curriculum on the acquisition of employable skills among the visually impaired learners and their employability rates after graduating from the TVET institutions. This current study also focused on Machakos Technical Institute for the Blind and Sikri Technical Institute for the Deaf and Blind which were TVET institutions which enrolled learners with special needs located in Machakos and Kisumu counties respectively.

Wesselink, De Jong, and Biemans (2010) explored the aspects of competence-based education as footholds to improve the connectivity between learning in school and in the workplace in the Netherlands. This study applied a qualitative approach using case study design. The study indicated that as the curriculum and activities in the competence-based programmes were based on and connected to workplace requirements by integrating school-based practice with real work situations, graduates of competence-based programmes performed jobs effectively and were able to adjust easily to workplace reality. The study noted that the higher the realization of the CBET program, the better the performance of graduates in the workplace.

According to the study by Wesselink, De Jong, and Biemans (2010), graduates' potential was realized if vocational education programmes were implemented in accordance with CBE principles. The study indicated that for less developed countries, however, the full realization of competence-based education in the TVET domain of practice remained a challenge, given the complexity of implementing competence-based education. Although the study was closely related to the current study, it did not explore the extent to which TVET programmes were aligned with competence-based principles and the relationship between this and acquisition of employable skills among learners and also their employability rates which was an objective of this current study. This study also specified the effect of applicability of CBET curriculum in the employability of learners with special needs particularly visual impairments which was not considered in the study by Wesselink, De Jong, and Biemans (2010) which was also conducted in a different context from that of this study.

Hegarty (2011) in his study on education and persons with special needs focusing on transition from segregation to inclusion in India observed that curriculum developers and course designers should come with content and materials that were tailored towards meeting the needs of both the regular and learners with special needs. The learning materials prepared for learners with special needs could be used to enhance learning in an inclusive educational setting. In some situations, as pointed out by study, the teachers were condemned to use the regular learners' curriculum without adaptation, even when there were learners with special needs education in the same class.

In such situations, the needs of learners with special needs in education were not met. However, in the case of creative teachers, analysis and adaptation of instructional, learning materials and curriculum was done, thus reducing irrelevance and avoiding boredom for the learners with special needs in education. This study was conducted in a different setting and focused on curriculum development considering special needs' learners in general which was a different objective from that of this current study since it tested the impact of aligning the CBET curriculum in particular to the needs of learners with visual impairment in TVET institutions in Kenya.

In its policy brief on making TVET and skills systems inclusive of persons with disabilities, The International Labour Organization (2010) highlighted that at present, in many countries, these persons had limited access to mainstream TVET and skills programmes, and if they attended vocational training programmes, it was mainly in segregated centres catering only to persons with disabilities, where the type and level of training available provided poor employment or self-employment prospects. The study recommended that a review of the training courses and related materials from a disability perspective should be undertaken or commissioned. This would enable decision-makers to become aware of the curriculum changes required, and adaptations needed to training materials, tools and equipment to enable trainees with disabilities to use them. The policy brief also recommended that the methods of assessing and evaluating the performance of learners should be examined from a disability perspective and adapted to ensure that trainees with disabilities are not inadvertently prevented from demonstrating their capacity through the approaches used.

Furthermore, depending on the type of disability, providing reasonable accommodation which might take the form of technical aids, information in formats different from standard print ('alternative formats'), adaptations to training and assessment materials and equipment or flexibility in approaches used, such as rearranging space, so persons in wheelchairs might engage in an activity with others, or allocation of more time to complete tasks was recommended. It was therefore important to assess whether in the implementation of CBET curriculum in TVET institutions in Kenya, the needs of persons with disability especially the visually impaired had been considered and the outcome of existing structures on the employability of these learners focusing on their level of acquisition of employable skills and their employment rates. This was the main focus of this current study.

In their study on emerging trends and challenges in TVET in Sub-Saharan Africa, Tarno, Simiyu, Kitainge, and Rono (2017) argued that there was no doubt that having gone through CBET, graduates did not simply provide service in the working environment; they accomplished results and this was what the industries expect from its employees. The study applied a comparative study approach. However, this was not the case with visually impaired graduates from TVET institutions. In this era where emerging industries are in dire need of expertise to run their industries these graduates are still struggling to get employment despite existence of CBET (Palmer, 2017). However as much as scholars support CBET, it was crucial for in-depth studies to be conducted to assess how CBET was relevant to visually impaired learners since upon graduating, majority were going to their former occupations including begging.

Thus, the question is “what is ailing CBET offered to visually impaired graduates from TVET institutions?” This study therefore endeavored to answer the above question by establishing whether the CBET curricular was suitable for visually impaired learners as there was little research done on the same. It was important to bear in mind that educational goals are equally important to make visually impaired persons ready for social competence, effective communication, employability, and personal independence. However, to achieve these goals, visually impaired learners required definite interventions and modifications in their educational programmes.

2.4 Adaptability of facilities applied in TVET Institutions on Acquisition of Employable skills by Visually Impaired Learners

Facilities can be generally defined as buildings, properties and major infrastructure which include physical and material assets (Ayonmike, Chijioke and Okeke, 2014). Facilities in learning institutions are material resources that enhance teaching and learning thereby making the process meaningful and purposeful (Asiyai, 2012). Teaching facilities include infrastructure and all material resources that support the delivery of quality education. Infrastructure which is part of facilities refers to basic physical and organizational structures needed for the successful running of the institution (Omotayo, Ihebereme and Maduewesi, 2008). Other relevant facilities in the learning environment according to these authors include text books, workshop equipment, computer machines, seating facilities, supply of electricity and other technical and vocational facilities which are all paramount to the provision of quality education.

Bakare (2009) assessed the role of adequate teaching facilities in institutions of higher learning in the South Western Zone of Nigeria. The study investigated the availability, adequacy and condition of facilities in these institutions. The study applied a descriptive survey research design and found that the status of facilities in these institutions affected the quality of education and that even though facilities were generally available, they were largely not in good condition and others were not appropriate. Additionally, the study emphasized that facilities in learning institutions were the physical and spatial enablers of teaching and learning which increased the production of results and served as pillars of support for effective teaching and learning. This study was conducted in a different context from that of this current study hence its findings could not be automatically generalized to fit the situation in TVET institutions in Kenya. Also the current study focused particularly on the adaptability of facilities used in CBET implementation and acquisition of employable skills among learners with special needs, specifically visually impaired learners. It is crucial to note that the study by Bakare (2009) examined the status of facilities and learning and teachings in institutions of higher learning in general but did not explore how these facilities were adapted to the implementation of specific curricula such as CBET which was a fundamental focus in the current study.

Akinsolu (2004) while assessing the provision and management of facilities in Nigerian primary schools found that good quality and standard institution of learning depended largely on the management of educational facilities. The study reiterated that poorly managed school facilities affected implementation of sound educational curriculum. The study employed a survey research design. Similarly, Asiyai (2012) who assessed

school facilities in public secondary schools in Delta State, Nigeria noted that school facilities were fundamental in teaching and learning while the inadequate and poor maintenance of these facilities resulted to poor teaching and learning. According to the study, when facilities in learning institutions were inadequately maintained, they constituted health hazards to students and teachers who use the facilities. These studies by Akinsolu (2004) and Asiyai (2012) only related the status of facilities and sound curriculum implementation in schools in general but the current study was particular in assessing of the adaptability of facilities as crucial in the implementation of CBET curriculum which was more complex and had its own characteristics which demanded particular facilities. The context of these studies was different from that of this current study since it focused on TVET institutions in Kenya.

Olabiyi, Adigun, and Adenle (2008) conducted an assessment of the adequacy of training facilities used for vocational and technical education in colleges of education in South West Nigeria. A survey was conducted. The study revealed that a significant relationship existed between TVET institution environment and learners' attitude to skills acquisition. The study highlighted that the condition of facilities in TVET institutions had a strong effect on skills acquisition among learners where achievement of learners who were taught in institutions with modernized facilities was consistently higher across a range of standardized tests. Olabiyi, Adigun, and Adenle (2008) reported that TVET institutions with well-coordinated planning and maintenance practices recorded better learners' performance. This study affirmed that many educators were of the view that learning occurred best through participation.

The usage of training facilities helped learners to actively participate in learning. This was because, they learned by discovery as the teacher could not have full knowledge on what the learner has to know. The psychological relevance of individualized instruction also necessitated the use of various approaches to cover the different abilities and perceptions of students. The study concluded that nothing else could help in effective teaching in the classroom than educationally certified training facilities and techniques. The current study was more particular on the adaptability of facilities used in implementing the CBET approach within the context of TVET institutions in Kenya unlike the study by Olabiyi, Adigun, and Adenle (2008) which focused on the impact of the state of facilities in TVET institutions in Nigeria on learning in general.

Anindo (2016) assessed the institutional factors that influenced the acquisition of employable skills by students in public technical and vocational education and training institutions in Nairobi County, Kenya. The study adopted descriptive survey design. The study targeted three TVET institutions in Nairobi County. The study findings revealed that the TVETs had inadequate provision of training equipment especially in technical courses. In addition, the institutions did not have modern equipment which was relevant to those used in the industries. The study argued that the relevance of training equipment influenced acquisition of employable skills. The study noted that when institutions operated with inadequate training equipment, the relevance of taught skills to market skill needs in industries and business organizations was compromised. The findings of this study showed that most of the training equipment found in TVET institutions was not technologically in tandem with equipment found in industries and business organizations which eroded the relevance of taught skills to market skill needs.

The study by Anindo (2016) concluded that there was urgent need to modernize equipment and provide adequate training equipment to ensure that graduates coming out of TVETs acquired employable skills relevant to the employment market skill needs in industries and business organizations. Since CBET was recently introduced in Kenya, there was a need to assess if the government had built or renovated workshops for effective teaching and with a particular consideration of persons with disabilities especially the visually impaired. This was achieved by establishing 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. The context of the study by Anindo (2016) was also different from that of this current study since it focused on Machakos Technical Institute for the Blind and Sikri Technical Institute for the Deaf and Blind which were TVET institutions which enrolled learners with special needs located in Machakos and Kisumu counties respectively.

Baraki and Negash (2016) evaluated the implementation of competence-based education and training system in TVET institutions in Ethiopia. The study adopted a mixed methods research design. The study found that the quality of implementation of CBET was hampered due to gaps in institutional capacity especially among smaller TVET institutions. This was linked to among others gaps in tools, materials and machineries. The study pointed out that 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. CBET requires numerous training on specific experience for the

learner to form right habits of doing and thinking to a degree necessary for securing employment. It was thus evident that in implementing CBET, instructional facilities or teaching and learning materials were indispensable for the attainment of the goals. This study was conducted in a different setting and focused on learners in general while this study focused on the adaptability of facilities applied in the implementation of CBET in the context of learners with visual impairments in TVET institutions in Kenya.

Umar and Ma'aji (2010) conducted a study on how the facilities in technical college workshops could be repositioned for efficiency in North Central Nigeria. A descriptive survey design was adopted and found that workshop facilities namely workshop structures, working materials, teaching materials, workshop tools and equipment in these colleges were inadequate. This according to the study adversely affected the development of useful skills among learners. The study as result warned that where the facilities, equipment and tools were not adequate and for use by the TVET students', their acquisition of skills was low leading to production of unskilled personnel who were unemployable and unproductive. The study therefore concluded that inadequacy of workshop facilities in technical college programmes deterred skills acquisition in TVET institutions.

This research by Umar and Ma'aji (2010) focused on the impact of the state of facilities in TVET institutions in Nigeria on learning in general which was different from the current study which was more particular on the adaptability of facilities used in implementing the CBET approach within the context of TVET institutions in Kenya

and also focused on learners with special needs (visually impaired learners) which was not considered in the previous study.

In response to the question about reforming education and training, and drawing lessons from development of vocational education and training in Kenya, Kitainge (2017) observed that 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 knew how to use them. This posed risk for some of this equipment becoming relics of previous industrial requirements. This scenario was alarming in 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. This study established if facilities in TVET Institutions in location of study were adequate or not and whether they were well maintained or not. In line with the above scholarly discussions, it was evident that there was relationship between facilities and implementation of CBET in TVET Institutions. However, none of the reviewed studies had unearthed literature on adaptability of facilities in TVET Institutions for visually impaired learners. This was a major concern dealt with in this current study.

Msuya (2016) explored facilitators and learners' perceptions on the implementation of competence-based curricula in adult education programmes in Tanzania. The study employed a case study design under qualitative research approach. The findings indicated that the effective implementation of the competence based curricula at the

Institute of Adult Education (IAE) programmes was hampered by insufficient teaching and learning resources. The findings revealed that, IAE was faced with the problem of shortage of teaching and learning materials. Facilitators and students mentioned materials such as books as the mostly deficient at IAE. Furthermore, there was the problem of teaching and learning facilities such as computers, PowerPoint projectors, printers, photocopiers and internet. It was observed that there were only eight computers at the IAE library and twenty computers at the institute's computer laboratory. Furthermore, it was noted that implementation of CBET curricula at the IAE was hampered by inadequate of library space and library services in general. The library had no capacity to accommodate the number of students registered at the institute. The study recommended that for the smooth CBET curricula implementation, the Institute of Adult Education should ensure availability of teaching and learning resources. The findings were conducted in a different setting from this current study and hence its findings could not be automatically generalized to fit the situation in the TVET institutions in Kenya. Furthermore, this current had a different objective which was to determine the adaptability of facilities used in CBET implementation in the context of learners with special needs particularly the visually impaired hence a conceptual gap.

Geressu (2017) assessed the impact of competence-based training on employability of Technical and Vocational graduates in Ethiopia. The study applied a mixed-method research design, and the results showed that technical and vocational education and training (TVET) colleges in Ethiopia had been performing below expectations in developing demand-based curriculum and implementing competence-based training in

TVET colleges and industries. The study found that TVET colleges were not granted adequate resources for implementation of competence based learning approach which hindered its successful implementation. This situation meant that TVET colleges in the country were not able to produce competent graduates who had required employability skills, knowledge and ability that consequentially led to graduate unemployment and dissatisfaction of different categories of stakeholders. The study also identified that the weak collaborative work culture among TVET colleges and that of industries limited the opportunity of exploiting the potential of all stakeholders that enabled them to be successful in bringing about the expected output to meet the expectation of respective stakeholders and win their commitment in its real sense. The study recommended increased funding to these institutions for them to acquire the needed resources. This study also exhibits the gaps found in the study by Msuya (2016).

Wongnaa and Boachie (2018) studied the perception and adoption of competency-based training by academics in Ghana. A descriptive survey research design was employed where data was collected using structured questionnaires. The study found that the availability of teaching aids or resources for use of Competence Based Training (CBT) had a positive and significant effect on adoption of CBT. This is because a decision to use CBT in teaching needed be complemented by certain teaching and learning materials, and therefore, when these materials were not present, faculty members were discouraged from employing it. According to the study, the lack of effective workshop and laboratory tools and other resources was a major cause of low patronage of CBT by the staff of tertiary institutions.

The implication is that workshop facilities that were required to enhance practical training had been progressively degrading, forcing facilitators to make their teaching more theoretical than practical. The study noted that the provision of appropriate teaching and learning resources that complemented adoption of CBT enhanced the adoption of competency-based education methodologies. The study recommended for close collaboration between academia and industry/practitioners aimed at providing the needed resources for implementation of CBT and also practitioners contributing to the development of curricula for CBT syllabi. The research gaps identified in the studies by Geressu (2017) and Msuya (2016) were also observed in this study.

Mbugua, Muthaa, and Sang (2012) assessed the challenges facing technical training in Kenya. The study used a descriptive survey research design. The study found out that training facilities used by the technical institutions were inferior to facilities used in industries and business organizations. The study discovered that these institutions operated without adequate physical facilities, did not have adequate training tools and lacked adequate training materials. This resulted to graduates who possessed very irrelevant skills in relation to skill needs in industries and business organizations. The study also found that a majority of the learners did not have adequate opportunities for industrial attachment which implied that the learners were not privy to technology and information used in industries and business organizations which were perceived to be superior to those used in the technical institutions.

Moreover, lack of attachment opportunities for learners denies them the interactive opportunity to learn and appreciate latest technology. Even though this study focused

on the state of facilities in TVET institutions in Kenya, it did not explore the condition of these facilities in relation to CBET implementation in the context of learners with special needs especially the visually impaired which was a major objective of this study which limited itself to Machakos Technical Institute for the Blind and Sikri Technical Institute for the Deaf and Blind which were TVET institutions enrolling learners with special needs.

Ndonye (2016) sought to find out the challenges of inclusive technical training education for learners with visual impairments in Machakos, Kenya. A mixed-method research approach was used. Questionnaires, interviews, and observations schedules were used to collect data. The study revealed that there was lack of enough specialist adapted instructional materials for the learners with visual impairments which affected the quality of Inclusive Technical Training Education for Visually Impaired (ITTEVI) in Machakos Technical Training Institute for the Blind (MTTIB). The study findings showed that there were several challenges in workshops and in the practical technical classes with integrated learners who were visually impaired. The visually impaired learners narrated that they faced challenges such as lack of enough tactually adapted teaching and learning materials. The practical lessons were challenging due to lack of specialized support, and protective devices in the workshops.

The study by Ndonye (2016) concluded that Machakos Technical Institute for the blind did not have enough modern specialist supportive instructional material in most of its workshops and departments. The trainers and trainees improvised most of the needed instructional material to supplement for the quality modern ones. The study therefore

recommended that the institution should establish adequate instructional materials on provision of ITTEVI in MTTIB for a better teaching and learning process. Even though this study was conducted in one of TVET institutions considered in this study, its main focus was on the state of facilities in relation to inclusive education and training which was different from this study which related the state of facilities used in implementing competence based education and training and employability of learners from the institution. Hence, a conceptual gap was found.

Anindo, Mugambi, and Matula (2016) explored the relationship between training equipment and acquisition of employable skills by trainees in public technical and vocational education and training institutions in Nairobi County, Kenya. The study adopted descriptive survey design targeting three TVET institutions in Nairobi County. The research instruments were questionnaires for tutors and students and an interview guide for principals. The study found that inadequacy of training equipment was one of the main challenges facing public TVET institutions. This was attributed to among others inadequate funds from the government and limited support from the industries and donors in providing relevant training equipment to the institutions. The study noted that the training equipment were not technologically modern to the ones used in industries especially in the engineering, applied science and ICT courses. The equipment were found to be completely out of tune with facilities used in industries especially the technical subjects. According to the study, the inadequate provision of training equipment affected the learners negatively in acquiring practical skills and they were not confident enough to handle machinery used in industries. The study therefore concluded that the availability of training equipment played a big role in influencing

skills acquisition by students as preparation for the world of work. It was suggested that there was high need for the stakeholders to support the institutions in providing technologically modern training equipment.

The study also recommended that industries should support TVET institutions by providing industrial attachment programmes and linkages for both students and teachers in order to enhance their professional development and gaining knowledge on new technologies and market skills needs especially where institutions lacked the necessary equipment. This study differed from this current study in its objectives since the latter study sought to assess the adaptability of facilities used in CBET implementation and how it affected the acquisition of employable skills among learners with special needs in this case, visual impairments which was not considered in the former study.

Woyo (2013) explored the challenges facing technical and vocational education and training institutions in producing competent graduates in Zimbabwe. This was a desktop study based on a review of existing literature on the subject. In summation, the study noted that TVET institutions in Zimbabwe were not ready to effectively implement CBET reforms as required mainly because they were not well equipped in terms of training equipment and facilities. According to the study, the literature reviewed, highlighted a number of salient points. TVET was rather an expensive form of training in comparison with academic education and thus it was generally affected by the high cost that was attached to it and this probably explained why TVET institutions in Zimbabwe were not well equipped. The study also noted that the synergy between industry and academia in Zimbabwe was weak and as a result, there was a wider

variation of what TVET did and what industry and commerce expected. Efforts to link industry and academia as pointed out by the study had not yet bore the fruits that had been witnessed in the advanced market economies.

The study accentuated that efforts by TVET institutions to access industrial opportunities via Private Public Partnerships had also been erratic and of no benefit in driving the CBET agenda in Zimbabwe. Hence, there was a variance between the competencies a graduate acquired at a TVET institution and what industry generally expected and thus reducing the chances of employability. Even though this study touched on some of the major issues handled in this current study, it was carried out in a different context and did not explore the subject taking into consideration learners with special needs which was a major highlight for this current study which concentrated on learners and graduates with visual impairments. In line with the above scholarly discussions, it is evident that there is a relationship between facilities and implementation of CBET in TVET institutions. However no scholar has unearthed literature on adaptability of facilities in TVET institutions for visually impaired learners hence the major concern for this research.

2.5 Influence of Trainers' Qualifications in CBET on Acquisition of Employable Skills Among Visually Impaired Learners in TVET Institutions in Kenya

The purpose of introducing CBET in vocational training is to ensure an efficient training while reducing early specialization, but in parallel view, trainers must instruct and mentor graduates so as to be versatile and to excel in practice by bringing closer educational institutions and businesses. In addition, firms witness the incorporation of

new technologies, which urges trainers to revise training programmes, taking into account the requisite skills. Muneja (2013) explored the secondary school teachers' experience in the implementation of the competency-based curriculum in the Arusha Region, Tanzania. The study employed a case study design where eight participants provided in-depth data through face-to-face interviews, non-participant observation and document analysis. The study found that the teachers had little understanding of the competence based curriculum.

The study pointed out that it was necessary for teachers to possess the following attributes for effective teaching of the competence based curriculum: An understanding of how students learn, apply learning principles to teaching, supervise the students learning other than controlling the learning process, impart to the learners critical thinking attributes thereby supporting their knowledge acquisition processes, encourage and motivate learners responsibility for learning, monitor learners learning progress and provide feedback on progress through self and teacher assessment, encourage individualized learning depending on learners needs and to measure progress as well as anticipate learner's advancement in performance during the period of study. The study recommended that teachers needed to be enrolled in short courses or be assisted in applying for further education. This way, they would be better placed to implement this curriculum. This study was conducted in secondary schools whose curriculum was somehow different from that implemented in TVET institutions and did not consider the aspect of training. The study was also conducted in a different setting and did not explore outcomes among learners with different dynamics such as disability which was considered in this study.

Adebambo (2017) on the other hand explored vocational and technical education and training in Nigeria. The study found that TVET principals and trainers' awareness and knowledge on CBET significantly affected skills acquisition among learners. The study pointed out that TVET principals and trainers could help learners prepare for the world of work in a number of ways. To do so effectively, however, they should have a working knowledge on what CBET entailed as well as adapting the curriculum to meet diversified needs of learners. To achieve this, it was suggested that the trainers should go for refresher courses, in-service courses and capacity building workshops. In turn this would help learners gain an understanding of themselves and their abilities, interests and values; gain an understanding of the world of work; and acquire effective decision-making skills.

In the same view, the study noted that TVET Principals could promote the importance of staff member attendance and input at transition planning meetings as trainers were an integral part of forming and implementing many of the students' goals, and they could provide valuable feedback and recommendations about the strengths and interests of their students. According to the study, it was also imperative for trainers to support learners' career development as stipulated in CBET. Trainers should incorporate real-world applications into their instruction and discuss how the skills that are being taught are used in occupations that are of high interest to students (Kaane, 2014). This study was conducted in a different setting and considered learners in general while this study assessed trainers' competencies in CBET implementation taking in to consideration learners who had special needs in this case visual impairments since trainers were likely

to encounter different challenges when training visually impaired learners and sighted learners.

Notably, the main implementers of CBET system are trainers, but there is a very big challenge in the preparation and recruitment of the trainers. Jeanne (2014) examined the link between a national certification initiative for employment support professionals in the US and promotion of quality integrated employment services. The examination presented findings from a preliminary survey study of 93 professionals who had been certified. According to the study, the fundamentals for technical training required the trainer to have subject knowledge, pedagogic experience and practical skills. The study noted that the existing situation in the majority of technical institutions did not put into consideration the possession of the three basic requirements. The study findings indicated that trainers were employed based solely on possession of subject knowledge after excelling in their university degree, even though lacking pedagogical and technical skills.

The study by Jeanne (2014) noted that the responsibility was bestowed to the employer to offer them short term on the job training on pedagogy which habitually did not yield the expected impact as trainers were already influenced by the long time knowledge that was based on the system in their prior education systems. This was reflected in the study conducted Muneja (2015) in Arusha, Tanzania which observed that teachers had limited understanding of the CBE and were happy in their teaching profession regardless of challenges faced when teaching following CBE curriculum to sighted students. This study had a different objective from that Jeanne (2014) as shed more

light on the mentioned challenges which were related to teaching CBET to visually impaired learners in TVET institutions but not the sighted ones. The study also examined if the trainers have attained Special Needs Education (SNE) for effective teaching to visually impaired learners as none of the reviewed studies explored this aspect.

Kitainge (2017) in his study on reforming education and training using lessons from development of vocational education and training in Kenya found that in order to ensure quality teaching on CBET, TVET trainers must be highly qualified, competent and devoted employees. This was a desktop study. The study indicated that the competency of the trainer was crucial in delivering any set curriculum in an educational system. The study argued that in order to ensure a high degree of competence and a sense of responsibility, both the pre-service and in-service training of the trainers must be accepted as necessary. Kitainge thus recommended that before any TVET trainer embarked on teaching CBET, they must undergo the requisite formal training for that curriculum. In addition, regular in- service training was necessary in order to keep them up to date with new techniques. This proved why often there had been an outcry among the VI graduates from TVET institutions and the employers due to the trend of poor performance in work place as incompetent trainers could not ensure quality CBET. This study did not explore how TVET trainers' qualifications influenced CBET implementation in the context of persons with special needs to be specific, the visually impaired learners which was a gap filled in this study which explored the influence of trainers' qualifications in CBET implementation on the acquisition of employable skills among visually impaired learners in TVET institutions in Kenya.

Kanyonga, Mtana, and Wendt (2019) investigated the implementation of competence-based curriculum in technical colleges in Arusha City, Tanzania. This study aimed at finding out how technical college trainers implemented CBET curriculum in Arusha city, Tanzania. The study adopted a qualitative approach through the use of case study design. The findings indicated that, though majority of the trainers got in-service training, more than half had limited awareness and understanding about the meaning and aim of the CBET curriculum. Also, trainers showed little knowledge and skills for employing CBET teaching and learning methods as well as conducting students' assessment and evaluation.

The study also found that technical colleges in Arusha city had inadequate human and material resources for effective implementation of the CBET curriculum. It was concluded from the findings that, CBET was introduced without relevant and necessary preparations. In addition, the training provided to trainers about CBET curriculum did not meet the demands since the training sessions were too short, went through the cascade model and only focused on some aspects of the CBET curriculum. The training according to the study was also not tailored to meet the demands of different participants and was not provided on continuous basis. This study was conducted in a different setting and did not explore the subject in the context of learners with special needs which was the objective pursued in this current study which delimited itself to learners with visual impairments.

Komba and Mwandangi (2015) carried out a study on reflections on the implementation of competence based curriculum in Tanzanian secondary schools. The study applied a descriptive survey research design. The findings indicated that the majority of the sampled teachers did not have the proper understanding of the objectives of competence based curriculum. In addition, the majority of the reviewed lesson plans did not reflect the qualities of a competence based lesson plan. Moreover, the involvement of students in classroom activities by the teachers who were observed was, in overall, very low. Lastly, teachers practiced formative students' assessments in less than 50% of the observed classroom sessions. In view of these findings, it seemed that the implementation of competence based curriculum in the selected schools was ineffective. Considering these findings, it was recommended that regular training for in-service teachers should be conducted in order to enable them acquire up-to-date teaching skills as required by the changes introduced in the school curricula. This study like that of Muneja (2013) was conducted in secondary schools whose curriculum was somehow different from that implemented in TVET institutions and did not consider the aspect of training. The study was also conducted in a different setting and did not explore outcomes among learners with different dynamics such as disability which was considered in this study.

The study by Deißinger and Hellwig (2011) explored the structures and functions of competency-based education and training (CBET) based on a comparative study approach where perspectives of CBET in Germany, England, Scotland and Australia were compared. The study argued that trainers needed to understand the context of the current CBET system in terms of the role, key characteristics, advantages and

limitations, components and potential alternatives also, to know how well trainers could design a CBET programme, acquire learning materials and resources, use appropriate facilities, develop procedures for managing CBET and foster partnerships between education and industry. The study highlighted that trainers ought to be aware of the process of selecting suitable teaching methods that matched with the contents to be taught or skills that needed to be developed among students during the process of teaching and learning.

The study emphasized that the methods that trainers need to select should foster the acquisition of knowledge, skills, understanding and wider attributes for students as these were addressed in the CBET curriculum. Therefore, trainers needed to have knowledge and skills on the ability to practice well learner-centred methods rather than teacher-centred methods. This study did not assess the subject of trainers' qualifications when implementing CBET in the context of learners with disabilities which was a major focus for this current study which concentrated on learners with visual impairments. The study was also conducted in a different setting from that of this current study.

Smith (2010) conducted a review of twenty years of competency-based training in the Australian vocational education and training system. The author reflected, both as an academic researcher and as a senior practitioner, on the experience of competency-based training (CBT) in the Australian vocational education and training system. The study sought to draw conclusions about the Australian experience using a typology drawn from the academic literature which focused on the philosophical, educational,

technical and market aspects of CBT. The study concluded that, despite many improvements over the past 10 years, some potential problems remained. According to the study, the system was controlled overly tightly by the interests of industry and it also exhibited some inflexibilities. Both of these acted to disadvantage some groups of learners. The study noted that teachers and trainers did not have adequate skills to work skillfully and critically with CBT, leading to thin pedagogy and a narrow focus on assessment of individual items of performance. The gaps identified in the study by Deißinger and Hellwig (2011) are also observed in this study.

Solomon (2016) investigated the efforts towards competence-based technical-vocational education and training in Ethiopia. The study sought to determine the extent to which TVET trainers were prepared by means of pre-service teacher training for competence-based TVET and what professional development activities did the TVET trainers undertake to improve their knowledge and practice for implementing competence-based TVET. The study results showed that although the TVET curriculum was competence-based, TVET trainer training programmes were not. This suggested that the TVET and TVET trainer training program curriculums lacked coherence in terms of curriculum design and practices. The TVET trainer training program curriculum was not based on a careful analysis of what professional competencies trainers required to teach in TVET and the knowledge and skills gap of incumbent trainer trainees. As the results showed, most of the instructional practices in TVET trainer education such as assessment, integration of knowledge, skills and attitudes, self-reflection, and students' independent learning, which were critical in competence-based TVET, were not well fostered in practice. The lack of an industrial

practice program (industrial internship) for a sustained period of time had reduced the opportunity for trainer training students to practice what they had learned in the colleges in authentic workplace settings. Given all this, the study concluded that it was difficult to claim that TVET teacher training students were adequately prepared to effectively handle complex teaching duties and roles in competence-based TVET. Although this study focused on issues addressed in this current study, it was carried out in TVET institutions in a different country and hence its findings could not be automatically generalized to fit the Kenyan case. Also, the study did not assess the issues examined in the context of institutions handling learners with special needs which was a focus of this current study.

2.6 Employability Rates of the Visually Impaired Learners in both Public and Private Sector

Employment is essential for every human being, not only for the sake of money and for economic independence, but also because it contributes to self-esteem and self-dignity leading to an abiding joy for life. In their study on perspectives in disability and rehabilitation in India, Pandey and Advani (2015) discovered that employment for persons with disabilities was more important as the self-esteem and financial gains generated out of it would offset to a great extent the negative impact of disdainful attitude of the society that disabled persons did not have the capacity to work and be productive like abled persons. This study was conducted in a different context from this study and assessed the employment of persons with disabilities unlike this study which focused on the visually impaired in Kenya.

Randolph (2014) utilized data from the disability supplement of the 2010 Behavioural Risk Factor Surveillance System to examine the impact of disability status on predicting employment status and income in the United States. The study found that disability status was the variable that presented the strongest negative correlation with employment in the sample. The author determined that disability status more so, visual impairment was a strong negative predictor of employment, particularly of being competitively employed. He found that visually impaired graduates with CBET were less likely to be employed as the machines available in most industrial companies were sophisticated, hence, this group could not cope up with such machines. This current study provided detailed findings by comparing the kind of equipment/machines used when teaching CBET in the context of visually impaired learners and the ones used in industries. This helped to ascertain whether the TVET institutions used similar or different equipment with industries which influenced the relationship between CBET and employability of visually impaired graduates. The findings of Randolph (2014) could not be automatically generalized to fit the Kenyan case due to contextual differences hence the need for carrying out this current study.

An empirical study by Ozawa and Yeo (2016) on work status and work performance of people with disabilities compared the employment outcomes of graduates with CBET who were blind and those with low vision with those having no disability also in the United States. The results revealed that the rate of employment was inversely proportional to the degree of disability. From the group of respondents with no disability, 83.04% were employed, while those who were blind and those with low vision were employed at 51.54% and 69.94%, respectively. These authors found, as did

Randolph (2014), that disability affected two main aspects of work performance: the likelihood of working and monthly earnings. The probabilities of working were significantly less for respondents with blindness than for those with low vision or with no disability. Monthly earnings of both respondents with blindness and with low vision were lower than those of people with no disability.

The study by Mitra and Kruse (2016) explored whether workers with disabilities were more likely to be displaced. This was a longitudinal study which documented the gap in job displacement rates across disability status in the United States over the 2007–2013 period using data from the 2010, 2012 and 2014 Displaced Worker Supplements of the Current Population Survey. According to the study, not only the chances of obtaining a job and earnings were negatively correlated to disability status, but also job mobility. Workers with disabilities and more so, VI graduates with CBET in USA were more likely to experience involuntary job changes than non-disabled workers.

In addition, study by Ajaegbu (2012) on employment of the blind showed that the rates of employment for individuals who were visually impaired in the United Kingdoms had been low for decades. For most people, individuals who were visually impaired in the UK had long suffered high rates of unemployment. However, the study noted that many graduates who were visually impaired and had attained CBET had strained to obtain competitive employment and good wages. Results of this study observed that the employment rate for individuals who were visually impaired was 37%. Ajaegbu disseminated his findings based on the situation at hand at UK which was a developed

country whereas, this study sought to establish the state of affairs on in Kenya which was among the developing countries hence allowed for comparison.

The employability challenge for visually impaired persons is also pointed out in the study by Wittich, Watanabe, Scully, and Bergevin (2013) which investigated the development and adaptation of an employment integration program for people who were visually impaired in Quebec, Canada. The research analyzing Quarterly Labour Force Survey found that low employment rates had decreased further: 3.9% between 2010 and 2013 among people with visual impairment, compared to the general workforce, which has had a reduced rate of 0.2% for the same period. The study highlighted that the concerns about employment were among the list of worries for adolescents who were visually impaired.

According to United National Development Program (UNDP) (2010), TVET graduates in Kenya are crucial to the modernization of Kenya's employment profile. Having attained CBET, majority of TVET graduates are self-employed or absorbed by different companies. In 2015, the Kenya National Bureau of Statistics (KNBS) estimated the total labour force to be 14 million - out of which only 1.9 million (13.75 %) were documented to be formally employed and eight million (57.14 %) were estimated to be informally employed, bringing the total to 70 %. The number of unemployed TVET graduates was estimated to be about two million, with a rise to 14 million projected for 2020. According to Kenya's 2016 National Survey on Persons with Disabilities found that 3.6% of youth aged 15 to 24 had disabilities. In the week preceding the survey, out of the visually impaired graduates from TVET institutions who had attained CBET,

only 1% had worked for pay, and 0.15% had worked on the family business. Over 50% had not worked. Thus, unemployment rate of these graduates continues to soar up in spite of the efforts of teaching CBET in TVET institutions in Kenya. In line with the above, this study sought to examine this current situation.

2.7 Research Gaps Identified

The literature review uncovered various gaps by the scholars who had researched on similar area as follows; they failed to clarify whether the CBET curriculum was applicable for VI learners. Adequate in-depth information on the areas the curriculum ought to be adapted to suit VI learners was not presented. The existing studies did not discuss the extent to which facilities in TVET institutions were adapted for use by VI learners' going through the CBET curriculum. The existing literature also failed to clarify the extent to which trainers' qualifications influenced teaching CBET to VI learners and also did not clearly bring out impact of CBE and training on the employability rate of VI graduates.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter discusses the research design, location of study, target population, sampling technique and sample size, research instruments, pilot study, validity of the instruments, reliability of the instruments, data collection procedures, data analysis and ethical consideration.

3.2 Research Design

In this study a mixed methods research design was used since the researcher applied both quantitative and qualitative approaches. The quantitative approach was descriptive in nature while the qualitative approach comprised of two case studies. This research design was appropriate since the study used both quantitative and qualitative data. According to Johnson, Onwuegbuzie and Turner (2007), a mixed methods research design involves the collection of both qualitative (open-ended) and quantitative (closed-ended) data in response to research questions or hypotheses. It includes the analysis of both forms of data. The procedures for both qualitative and quantitative data collection and analysis need to be conducted rigorously (e.g., adequate sampling, sources of information, data analysis steps). The two forms of data are integrated in the design analysis through merging the data, connecting the data, or embedding the data. As noted by Creswell (2014), the key assumption of this approach is that both qualitative and quantitative data provide different types of information, often detailed views of participants qualitatively and scores on instruments quantitatively and together they yield results that should be the same.

3.3 Location of the Study

The study was carried out in Machakos and Kisumu Counties; in particular, at Machakos Technical Institute for the Blind (MTIB) and Sikri Technical Institute for the Deaf and Blind (STIDB) respectively. Machakos County is 63 kilometres South-East of Nairobi. It covers an area of 6,208 km² and has an altitude of 1000-2100 meters above sea level. It stretches from latitudes 1°31' 0.01" S North and longitudes 37°16' 0.01" E. It is semi-arid with hilly terrain and elevation. Subsistence agriculture is mostly practiced with maize and drought resistant crops. It has hilly scenery which is perfect for tourist related activities. Machakos is close to Nairobi and hosts important industrial and residential centres which are Athi River and Mlolongo. It boasts of livestock, minerals, wild game (Lukenya), range land (Kapiti) and space for expansion. This has made it to be selected for upcoming Konza Technology City.

Kisumu County is located in Western Kenya. It covers an area of 2085.9km² and it stretches from latitude 0° 06' 7.96" N and longitude 34° 45' 42.16" E. It is located at an elevation of 1188 meters that is equal to 3,898 feet. The climate of the entire county is dependent on Lake Victoria modifications. The county is warm throughout the year with mean temperature of 23.0°c. The temperature ranges between 20°c and 35°c but seldom falls below 19°c. The humidity is relatively high throughout the year. The county has a diverse background comprising of urban and rural set ups as well as rich ethnic, racial and cultural diversity with Luo being the dominant community. The major economic mainstay of residents in this County includes fishing, farming (rice and sugarcane growing) and trade.

These counties were ideal for this study since the above mentioned TVET institutions which offered CBET were located there and they enrolled visually impaired learners. In addition, enrolment had increased in both institutions due to the collaboration between the Government and development partners who had subsidized fees for the vulnerable, marginalized and persons with disabilities in the spirit of enhancing access, equity, quality and relevance in TVET training.

3.4 Target Population

According to TVETA records (2018), MTIB and STIDB had 90 trainers; 20 trainers were HODs. The two institutions had 150 visually impaired learners who had graduated on completion of CBET programmes. Records from Ministry of Labour (MOL) (2017) showed that five industries had absorbed visually impaired learners who had graduated on completion of CBET programmes, while others were self-employed or employed in private the sector. Thus, five managers from these industries and the visually impaired employees were part of the target population as well as the self-employed and those employed in the private sector. In addition, MOE; TVET section consisted of one director and one CEO of CDACC. These officials were among the target population. Moreover, other subjects included; 10 MOL officials stationed at Machakos County and Kisumu County and members of civil society groups (10). Table 3.1 shows the distribution of the target population.

Table 3.1 Target Population

| Category | Number |
|---|---------------|
| Principals (also trainers) | 2 |
| Ministry of Education officials (TVET- director and CEO of CDACC) | 2 |
| Ministry of Labour officials | 10 |
| HODs | 20 |
| Trainers | 70 |
| Graduates with visual impairments | 150 |
| Civil society groups under visual impairment (KUB and NCPWD) | 10 |
| Industries (managers) | 5 |
| Total | 269 |

3.5 Sampling Technique and Sample Size

This study applied various techniques in selecting the sample. In both institutions, the two principals (from MTIB and STIDB) and all 70 trainers were included because of the small number which was manageable for the research. Purposive sampling technique was used to select those subjects who by nature of their placement had information being sought by the study. These subjects included; MOE officials; one director and one CEO CDACC, MOL officials, HODs, Civil society groups (KUB and NCPWD) and Industry managers. This technique was ideal for this study as the subjects had the particular information the researcher was seeking based on the researcher's judgment. Snowball technique was used to select the visually impaired graduates. This technique was ideal for the study as employed VI graduates referred the researcher to other colleagues employed in other sectors. Table 3.2 provides a summary on how the sample size of the subjects was arrived at.

Table 3.2: Sample Size

| Category | Target Population | Sample size | Sampling Technique |
|--------------------------------------|--------------------------|-----------------------------|---------------------------|
| Principals | 2 | 2 | Purposive |
| Ministry of Education officials | 2 | 2 | Purposive |
| HODs | 20 | 10 | Purposive |
| Trainers | 70 | 70 | Census |
| Graduates with visual impairments | 150 | 60 (30 from each institute) | Snowball |
| Ministry of Labour officials | 10 | 2 | Purposive |
| Civil society groups (KUB and NCPWD) | 10 | 2 | Purposive |
| Industries (managers) | 5 | 5 | Purposive |

3.6 Research Instruments

In this study, the following research instruments were used: questionnaires, focused group discussion, interview schedules, visual images and observation schedules.

3.6.1 Principals' Competence Based Education and Training Questionnaire (PCBETQ)

The questionnaire was semi-structured. The information sought through this questionnaire included; applicability of CBET curriculum, adaptability of facilities applied in CBET implementation and trainers' qualification in CBET implementation, the role of occupational standards and industry linkage, acquisition of employable skills among visually impaired learners in TVET institutions and employability rates of the visually impaired graduates. This research instrument was ideal for this study since the principal was the accounting officer as far as curriculum implementation is concerned hence the custodian of all data.

3.6.2 Trainers' Competence Based Education and Training Questionnaire (TCBETQ)

Furthermore, the researcher drafted a questionnaire which was filled by the trainers in the TVET institutions. These subjects were conversant with CBET curriculum for they were the implementers. The questionnaires had open and closed ended questions. The information sourced included; applicability of CBET curriculum, adaptability of facilities applied in CBET implementation and trainers' qualification in CBET implementation, the role of occupational standards and industry linkage, acquisition of employable skills among visually impaired learners in TVET institutions and employability rates of the visually impaired graduates. This research tool was appropriate for this study as it gave the respondents a chance to give their responses without fear since they did not indicate their names.

3.6.3 MOE Officials' Competence Based Education and Training Interview Schedule (MOCBETQ)

The information sourced included; applicability of CBET approach to visually impaired learners, adaptability of facilities of visually impaired TVET institutions in teaching competence based education and training, trainers' qualification influence on teaching competence based education and training to visually impaired learners in TVET institutions and employability rates of the visually impaired graduates. These subjects were the ones who formulated the CBET framework and they were interested in assessing the success of the same.

3.6.4 Ministry of Labour Officials' Competence Based Education and Training Interview Schedule (MLOCBETQ)

The information sourced included; applicability of CBET approach to visually impaired learners, adaptability of facilities of visually impaired TVET institutions in teaching competence based education and training, trainers' qualification influence on teaching competence based education and training to visually impaired learners in TVET institutions and employability rates of the visually impaired graduates. The collected data from this ministry was vital as it gave the real picture on employability of visually impaired graduates.

3.6.5 Visually Impaired Graduates CBET Interview Schedule (VIGCBETIS)

Interview schedule are pre-defined questions asked orally (Kombo & Tromp, 2006). The information to be sought through interview schedule include; applicability of CBET approach to visually impaired learners, adaptability of facilities of visually impaired TVET institutions in teaching competence based education and training, trainers' qualification influence teaching competence based education and training to visually impaired learners in TVET institutions and employability rates of the visually impaired graduates. Interview schedule were more adaptive and questions can be rephrased to achieve the set objectives. This kind of research tool was ideal for the study because in – depth information was sourced.

3.6.6 Industry Managers CBET Interview Schedule (IMCBETIS)

Semi structured interviews schedules guided the researcher interview the managers from the industries where visually impaired graduates were employed. The questions

sought information on applicability of CBET approach to visually impaired learners, adaptability of facilities of visually impaired TVET Institutions in teaching competence based education and training, trainers' qualification influence teaching competence based education and training to visually impaired learners in TVET institutions and employability rates of the visually impaired graduates. This kind of research tool was ideal for the study because; the reliability of the information gathered was high as the researcher intensively investigated a particular objective before moving to the next hence getting a complete and detailed understanding of the objectives from the subjects.

3.6.7 Civil Society Groups CBET Interview Schedule (CSGCBETIS)

Interviews were also conducted among the civil society groups such as KSB, KUB and NCPWDs. These societies played a crucial role of ensuring education and employment rights for PWDs was not violated. Information sought with this tool included; applicability of CBET approach to visually impaired learners, adaptability of facilities of visually impaired TVET Institutions in teaching competence based education and training, trainers' qualification influence on teaching competence based education and training to visually impaired learners in TVET institutions and employability rates of the visually impaired graduates. This tool was appropriate for this study as in-depth data was sourced as the researcher probed the interviewees to give detailed information related to the study.

3.6.8 HODs' Competence Based Education and Training Focused Group Discussion Guide

The information sourced included; applicability of CBET curriculum, adaptability of facilities applied in CBET implementation and trainers' qualification in CBET implementation, acquisition of employable skills among visually impaired learners in TVET institutions and employability rates of the visually impaired graduates. This research tool was appropriate for this study as HODs were fully involved in developing and validating the CBET curricula.

3.6.9 Visual Images

Visual images are pictures taken by means of film in the camera on light sensitive or paper. In this study, the researcher employed visual images which enabled collection of in-depth exploration on concerns related to the study objectives. This tool was ideal for this study as photograph replaced a great deal of verbal description and therefore saved on time.

3.6.10 Researcher CBET Observation Schedule (RCBETOS)

The researcher utilized an observation schedule to record what they observed during the process of data collection. What was observed mainly related to adaptability of facilities in sampled TVET institutions. The practical lessons undertaken and quality of finished products made by visually impaired graduates was also observed. This tool was ideal for this study since direct observation allowed the researcher to assess the state of facilities thereby analyzing it better.

3.7 Pilot Study

Pilot study involves testing of research instruments to assess their validity and reliability. The purpose of the pilot study was to establish the suitability of research instruments as data collection tools for the study. The institution selected for the pilot study was Kerugoya Vocational Training for the Blind (KVTB) in Kirinyaga County. This institution had similar characteristics with those of MTIB and STIDB however it was not part of the main study. Five VI graduates from this institution were sampled for the pilot study as well as the principal, three trainers and four HODs. One MOE official was also included in the pilot study.

3.7.1 Validity of the Instruments

In this study, content validity was ensured. The researcher was thus guided adequately while developing and revising the research instruments especially the questionnaires, through suggestions, relevant comments and discussions by her supervisors and other experts from the department of educational management and curriculum studies. In addition, comments and suggestions made by respondents during pilot study in regard to areas of the instruments that needed improvement were addressed accordingly.

Since the study also involved qualitative methods, the validity of instruments used in this process was ensured by documenting all the procedures and methods, allowing the respondents to cross check the data to confirm whether their views were presented as given and were not tainted and also through triangulation where the researcher described in detailed the responses given, clarified any probable partiality, integrated all

information given whether negative or conflicting besides spending adequate time collecting the data.

3.7.2 Reliability of the Instruments

Pilot study which was used to test and to check the reliability of the instruments was undertaken at two different times in a span of two weeks to the same group of individuals to assess the reliability. The scores from both testing periods were correlated to determine the reliability or the consistency of the results. The Pearson's product moment test formula was used to compute correlation co-efficient in order to establish degree of consistency. The Pearson's product moment test formula was used as follows;

$$r = \frac{N\sum XY - (\sum X)(\sum Y)}{\sqrt{[N\sum X^2 - (\sum X)^2][N\sum Y^2 - (\sum Y)^2]}}$$

Where: N=number of respondents

X= scores of test one

Y= scores of test two

Test-retest reliability of 0.7 and above qualified the instrument for use in the study (Kerlinger, 2013). In this study, the reliability coefficient related to the principal's questionnaire was 0.769 while for trainers was 0.791. This was based on the criteria given by Kerlinger. These instruments were therefore termed as reliable and fit for use in the main data collection exercise.

The reliability of instruments used in conducting the qualitative part of the study was enhanced by documenting all the procedures applied, checking the written responses from the interviews and focused group discussions for obvious mistakes, making sure there was no drift in definitions of codes or their applications during the coding process and ratifying that all the communications made during the meetings were documented. Corroboration of the study findings with that of other scholars who had undertaken independent studies on the subject matter was also done.

3.8 Data Collection Procedure

The researcher was cleared for data collection exercise by the Graduate School (GS) of Machakos University. Thereafter, the researcher obtained permission to collect data from National Commission for Science Technology and Innovation (NACOSTI). The research permit was presented to County Commissioner and County Director of Education for authorization to carry on with the research in the locations of study. The researcher then visited the selected TVET institutions for the study for coordination purposes with the respective principals.

The researcher made appointments on the days to visit each institute for the purpose of data collection. On the appointment day, the researcher administered questionnaires to the principals and trainers. The researcher followed the same procedure upon visiting each institute. In every institute, the researcher took at least two days. Thereafter, the researcher visited the VI graduates and their employers (managers) for data collection. This was important since they were able to confirm the activities these graduates were doing in the workplaces and observe the quality of some of the products and services

offered. This was also done to instil trust since they were able to assure the respondents that the research was in deed for academic purposes only.

3.9 Data Analysis

This study utilized both qualitative and quantitative approaches which complemented each other, though quantitative approach was mainly used. On qualitative data, the researcher used content analysis approach which emphasized on thematic analysis. This helped in deriving useful and detailed information from interview notes, focused group discussion and views obtained from observations. The data was classified into different themes guided by the stated research objectives and links between the analyzed data identified and derived from key patterns that emerged. Thereafter, the researcher presented the data in narrative form which was reinforced by suitable interpretations.

Analysis of quantitative data obtained from the structured questions was divided into two, descriptive analysis and inferential analysis. The descriptive analysis helped the researcher to describe the basic characteristics of the data collected using frequencies, percentages, means and standard deviations. Inferential analysis helped the researcher to determine the association and relationships that existed between CBET and acquisition of employable skills among visually impaired learners and the moderating effect on industry linkage and occupational standards on the relationship between these two variables. Inferential analysis was also instrumental in analyzing the influence of CBET on the employability rates of visually impaired learners.

Pearson correlation analysis helped the researcher to determine if there were significant associations between applicability of CBET curriculum, adaptability of facilities used in CBET implementation and trainers' qualifications in CBET and acquisition of employable skills among visually impaired learners and also their associations with the employability rates of visually impaired graduates. The strength, direction and significance of the associations were assessed. This step was crucial since it guided the researcher in determining the variables that are suitable to be included in the regression models.

Bivariate and multiple linear regression analyses were undertaken in order to assess the strength, direction and significance of the effect of each independent variable on the dependent variable. The overall regression models used are as specified below;

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \mathcal{E} \dots\dots\dots$$

(Model 1)

Where:

Y = Acquisition of employable skills among visually impaired learners from TVET institutions.

{ β_i ; $i=1,2,3$ } = The coefficients for the various independent variables

X_1 = Applicability of CBET curriculum

X_2 = Adaptability of facilities applied in CBET implementation

X_3 = Trainers' qualifications in CBET

\mathcal{E} = Error term

The following model was used in assessing the link between CBET and employability rate of visually impaired graduates from TVET institutions.

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \mathcal{E} \dots\dots\dots$$

(Model 2)

Where:

Y = Employability rate of visually impaired graduates from TVET institutions

{ β_i ; i=1,2,3} = The coefficients for the various independent variables

X_1 = Applicability of CBET curriculum

X_2 = Adaptability of facilities applied in CBET implementation

X_3 = Trainers' qualifications in CBET

\mathcal{E} = Error term

In order to determine whether industry linkage moderated the relationship between CBET and acquisition of employable skills among visually impaired learners in TVET institutions in Kenya, the following model was specified;

$$Y = \beta_0 + \beta_1 X + \beta_2 M + \beta_3 X * M + \mathcal{E} \dots\dots\dots (Model 3)$$

Where;

Y is the Acquisition of employable skills among the visually impaired learners from TVET institutions in Kenya

X is Composite for all the independent variables

M = Industry Linkage (Moderating Variable)

X*M = Moderator Multiplied by the Composite (Interaction)

\mathcal{E} = Error term

In testing the intervening moderating effect of occupational standards on relationship between CBET and acquisition of employable skills among visually impaired learners in TVET institutions in Kenya, the following model was also specified;

$$Y = \beta_0 + \beta_1X + \beta_2M + \beta_3X*M + \epsilon \dots\dots\dots$$

(Model 4)

Where;

Y is the Acquisition of employable skills among the visually impaired learners in TVET institutions in Kenya

X is Composite for all the independent variables

M = Occupational standards (Moderating Variable)

X*M = Moderator Multiplied by the Composite (Interaction)

ε= Error term

The findings of the study were presented in tables and charts. In testing the study hypotheses, the *beta* coefficients, t-statistics and their associated p values were examined after conducting bivariate regression analyses where the individualized effect of each independent variable on the dependent variable was conducted. The following models were specified;

$$Y_1 = \beta_0 + \beta_1X_1 + \epsilon \dots\dots\dots \text{(Model 5)}$$

5)

$$Y_2 = \beta_0 + \beta_2X_2 + \epsilon \dots\dots\dots \text{(Model 6)}$$

6)

$$Y_3 = \beta_0 + \beta_3X_3 + \epsilon \dots\dots\dots \text{(Model 7)}$$

7)

Where

Y₁, Y₂, Y₃= dependent variables which are measures of acquisition of employable skills among the VILs in TVET institutions in Kenya for each aspect of CBET assessed.

X_1 = Applicability of CBET curriculum

X_2 = Adaptability of facilities applied in CBET implementation

X_3 = Trainers' qualifications in CBET

$\beta_1, \beta_2, \beta_3$ = coefficients for which the researcher was trying to predict the value of Y.

β_0 = constant.

ϵ = Error term

The *F*-statistic and associated *p* values were examined to establish the models' fitness. This enabled the researcher to assess whether the independent variables were good predictors of acquisition of employable skills among visually impaired learners in TVET institutions in Kenya and also the employability rates of visually impaired graduates from these institutions. All tests were undertaken at the 95% confidence level.

3.10 Ethical Considerations

In the contemporary research, it is imperative to articulate the significance of ethical concerns in order to ensure protection of respondents because ethical issues are integral part of a research and thus, ethics permeates the course of the research process (Mwinzi, 2012). This is because research involves learning from human behaviour as the primary element, and the dignity of those human beings must be protected. It is mandatory that the researcher must be cautious not to embarrass, perpetrate pain, or impose other disastrous effects on the respondents. Hence, it is fundamental that an overriding moral attention on the researcher is that the respondents are human persons and moral agents who cannot be reduced to be objects or as means to an end (Mwinzi,

2012). According to Mwinzi (2012), an adherence to ethical principles in research is closely linked to assuring the quality and rigour of the study, in terms of its credibility and dependability". The purpose of ethical considerations is to regulate that the moral principles and moral rules are maintained relative to pursuing an apt outcome of the study, reducing the magnitude of harm, and respecting the respondents. In an attempt to protect the respondents in this research, the researcher observed four ethical principles which included the right to voluntary consent, the principle of anonymity, the implication of confidentiality, and the substance of data protection.

3.10.1 Voluntary Consent

The purpose of voluntary consent is to ensure that respondents are not coerced to participate in a research and thus respondents ought to sign an informed consent form which comprises of the nature, procedures, and possible risks that are involved in a specified research. In this research, the researcher briefed the respondents about the key elements such as the purpose, procedures, time frame, risks and the possible benefits to the system of education and to the entire country. In this study, the researcher presented a consent form to all the respondents from the sampled institutions and respective offices to sign (ref. appendices).

At the beginning of the interviews, the respondents were given an additional opportunity to assent in participating in the study or to decline. The visually impaired graduates were given the consent forms in braille to be able to understand the contents; they used their thump print to sign hence their consent. It is illegal and unethical for a researcher to put the respondents in a situation which might lead them into a risk or

harmful condition as a result of their participation in a study. The word 'harm' can be described as both physical and psychological injury (Mwinzi, 2012). This entails that each of the selected respondents was free to be involved or reject participating in the study about competence based education and training and employability of visually impaired learners in technical and vocational education and training institutions in Kenya. This freedom of participation was a momentous cause to intensify the level of trustworthiness in this study.

3.10.2 Anonymity of Respondents

Anonymity of respondents is based on strict a standard which guarantees their privacy in participating in the research. This is realized by protecting the identity of individuals and institutions involved by replacing their real names with pseudonyms (Mwinzi, 2012). Therefore, in this study, the researcher assured the respondents at the beginning of data collection that their names will not be revealed. Therefore, the researcher used hypothetical or pseudonym names to represent one hundred and fifty three respondents involved in this study. This aspect of anonymity was crucial because it enabled the respondents to respond to the research items without fear.

3.10.3 Confidentiality

A researcher is required to maintain confidentiality since most studies involve human persons and their views. It is for this ethical factor that the researcher reminded each respondent that the information obtained from them is entirely meant to support the study. This implies that all the information gathered was used for the research and the individual names and official titles were excluded in the report or elsewhere. The issue

of confidentiality was also maintained in the interviews and focus group discussion in which Mwinzi (2012) contends that in a setting of interviews and focus group discussion, there is a close collaboration and confidentiality is an important ingredient to build trust without a risk of harm to the respondents.

In this study, it was a fundamental responsibility of the researcher to ensure that the respondents are protected from any physical or psychological harm caused in the study of competence based education and training and employability of visually impaired learners in technical and vocational education and training institutions in Kenya.

3.10.4 Protection of Data

It is the obligatory that information obtained from the respondents should be protected. In this case, the data is securely kept such as personal data, facts and opinions about an individual respondent (Kombo & Tromp, 2006). According to Kombo and Tromp (2006), protection of data is crucial in research because it includes the regulations for processing personal information. The necessity of protecting data compels the researcher to avail the final report to the respondents in order to allow them to make their comments. The researcher construes from Mwinzi (2012) that an involvement of the respondents in this study of competence based education and training and employability of visually impaired learners in technical and vocational education and training institutions in Kenya is indispensable. An involvement of the respondents in this study compels the researcher to put emphasis on the procedures used to facilitate the process of collecting information.

CHAPTER FOUR

DATA ANALYSIS, INTERPRETATION AND DISCUSSIONS

4.1 Introduction

This chapter outlines the study findings based on the data collected, their interpretation and also their implications. This is done as guided by the specific objectives of the study. The study sought to determine the influence of competence based education and training approach on the employability of visually impaired learners in TVET institutions in Kenya. Findings related to the applicability of CBET curriculum, adaptability of facilities applied in CBET implementation to the needs of the visually impaired learner, and trainers' qualifications in CBET in relation to the employability of the visually impaired graduates from these institutions are discussed. The level of acquisition of employability skills among the VI graduates as well as their employability rates was also discussed. Content analysis, descriptive analysis and inferential analysis were conducted. The findings were compared with that of existing studies in order to establish whether they were congruent or contradictory.

4.2 Response Rate

This study involved several categories of respondents. The researcher issued 70 questionnaires to the trainers, out of which 63 of the questionnaires were adequately filled and returned. A similar questionnaire was also administered to the 2 principals who also took part in the training where they adequately filled and returned them. This represented 90.3% successful response rate for the trainers and principals combined given that a similar questionnaire was administered to them.

The researcher also set out to conduct a focused group discussion with 10 HODs, 5 from each institute. All of them were available for the FGD, hence a 100% response rate. The researcher was also able to interview all the 5 industry managers who were chosen to take part in the study hence a 100% response rate. Furthermore, the researcher set out to interview 60 visually impaired graduates, 30 from each institute. Out of these, 51 were available at the time of carrying out the study hence a successful response rate of 85%. Even though the researcher set to interview 2 Ministry of Education officials, only one was available during the study process. Similarly, only one Ministry of Labour official was available to take part in the study even though the researcher had set to interview two officials. This was also the case for the civil society groups' officials under visual impairment KUB and NCPWD.

The response rates for all these categories of respondents were considered adequate in line with the assertions by Kothari (2013) who considered a response rate of 50.0% and above adequate for analysis and reporting. The findings also implied that the data collection strategies applied by the researcher were efficient. The response rate results are summarized in Table 4.1.

Table 4.1: Response Rate

| Category of Respondents | Research Instrument | Response | Frequency | Percent |
|---|-----------------------------------|--------------|-----------|--------------|
| Trainers (inclusive of principals) | Questionnaire | Returned | 65 | 90.3 |
| | | Unreturned | 7 | 9.7 |
| | | Total | 72 | 100.0 |
| HODs | Focused group discussion schedule | | 10 | 100.0 |
| Industry managers/employers | Interview schedule/guide | | 5 | 100.0 |
| Visually impaired graduates | Interview schedule/guide | Available | 51 | 85.0 |
| | | Unavailable | 9 | 15.0 |
| | | Total | 60 | 100.0 |
| Ministry of Education officials | Interview schedule/guide | Available | 1 | 50.0 |
| | | Unavailable | 1 | 50.0 |
| | | Total | 2 | 100.0 |
| Ministry of Labour officials | Interview schedule/guide | Available | 1 | 50.0 |
| | | Unavailable | 1 | 50.0 |
| | | Total | 2 | 100.0 |
| Civil society groups' officials under visual impairment (KUB and NCPWD) | Interview schedule/guide | Available | 1 | 50.0 |
| | | Unavailable | 1 | 50.0 |
| | | Total | 2 | 100.0 |

4.3 Demographic Information of Respondents

This section presents a discussion of the basic information of the study participants. Some of the demographics explored include the gender, age, academic qualifications, and also the number of years the respondents had served in particular position.

4.3.1 Gender of Respondents

The gender of the respondents was explored. The findings as presented in Table 4.2 revealed that the majority of the trainers inclusive of the principals in the 2 TVET institutions which took part in the study, 45 (69.2%) were male while the rest 20 (30.8%) were female. In particular, one of the principals was male and the other was a

female. These findings imply that government gender mainstreaming policies in regards to the placement of trainers in TVET institutions particularly the National Gender Policy and the One Third Gender Rule was poorly implemented. The study also found that a majority of the industry managers, 4 (80.0%), were male while 1 (20.0%) was female. The Ministry of Education official who took part in this study was also a male.

Table 4.2: Gender of Respondents

| Gender Category | Trainers (inclusive of principals who were also trainers) | Managers/Employers |
|------------------------|--|---------------------------|
| Male | 45 (69.2%) | 4 (80.0%) |
| Female | 20 (30.8%) | 1 (20.0%) |
| Total | 65 (100.0%) | 5 (100.0%) |

4.3.2 Age of the Respondents

The age of the study participants was also investigated and the results are as presented in Table 4.3. The study found that 16 (24.6%) of the trainers were aged 23 to 35 years, 22 (33.8%) were aged between 36 to 45 years while 15 (23.1%) and 12 (18.5%) of the trainers were aged between 46 to 55 years and above 55 years respectively. Specifically, for the principals, one was aged 41 to 50 years while the other was above 50 years. The study also found that 1 (20.0%) of the industry managers was aged 23 to 35 years, 2 (40.0%) were aged 36 to 45 years while 2(40.0%) were aged 46 to 55 years. Furthermore, a majority of the visually impaired graduates, 31 (60.8%) were aged 23 to 35years. The MOE who participated in this study was between the age of 31 to 40 years.

The findings implied that most of the trainers in the TVET institutions and also the industry managers were relatively old and mature. This was very crucial since they

were able to handle the visually impaired learners in a more caring and understanding manner especially given the sensitivity of the needs that these learners had. The findings also implied that most of the visually impaired graduates who took part in the study were youths.

Table 4.3: Age of Respondents

| Gender Category | Trainers (inclusive of principals who were also trainers) | Managers/ Employers | Visually Impaired Graduates |
|------------------------|--|----------------------------|------------------------------------|
| 23 to 35years | 16 (24.6%) | 1(20.0%) | 31 (60.8%) |
| 36 to 45years | 22 (33.8%) | 2 (40.0%) | 20 (39.2%) |
| 46 to 55years | 15 (23.1%) | 2 (40.0%) | - |
| Above 55years | 12 (18.5%) | - | - |
| Total | 65 (100.0%) | 5 (100.0%) | 51 (100.0%) |

4.3.3 Highest Academic Qualification of Respondents

The highest academic attainment of the respondents was further examined. The findings as outlined in Figure 4.1 showed that 14 (21.5%) of the trainers had a master’s degree, 24 (36.9%) of the trainers had obtained a bachelor’s degree, 22 (33.8%) had a diploma while 5 (7.7%) of the trainers had other qualifications in particular a certificate. Specifically, all the 2 principals had attained a master’s degree. The MOE official who took part in the study had education up to the PhD.

These findings implied that given that a majority of the respondents had attained a bachelor’s degree and above, they were in a position to adequately comprehend the issues under study and make articulate responses that were informed. They were in a position to provide the relevant information that the researcher sought in this study. The

level of education of the trainers in particular was also a crucial pointer of their level of competency or qualification in training the learners.

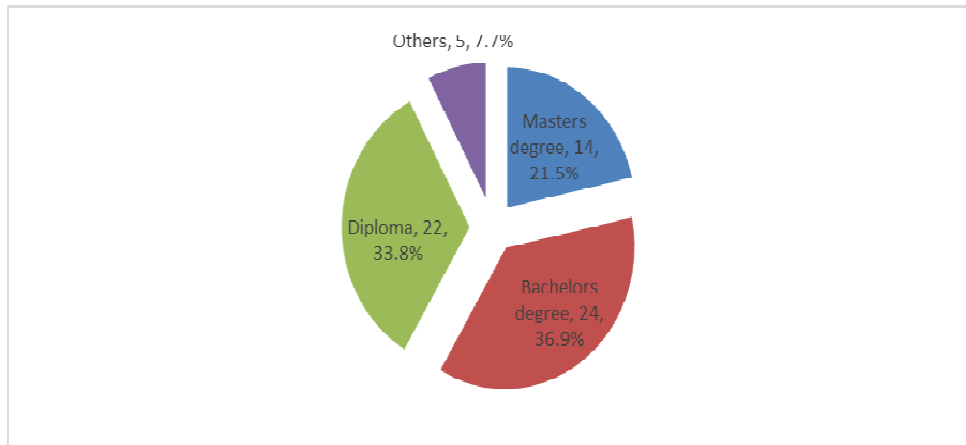


Figure 4.1: Highest Academic Qualification of Trainers

4.3.4 Years of Serving in a certain Position

The findings presented in Figure 4.2 show that 22 (33.8%) of the trainers had served in the position for between 1 to 5 years, 8 (12.3%) had served in the position for 6 to 10 years, while 10 (15.4%) and 25 (38.5%) of the trainers had served in the stated position for between 11 to 15 years and more than 15 years respectively. A particular focus on the principals showed that one of them had served as a principal in their institute for between 6 to 10 years while the other had served in this position for 1 to 5 years. As for the MOE official, they had served in this position for 6 to 10 years. It was further found that 3 (60.0%) of the managers had been running their companies for 1 to 5 years while the rest 2 (40.0%) had run the firms for 6 to 10 years. These findings implied that since a majority of the respondents had served in their positions for a relatively long period, they had the necessary experience related to the issues under study and hence, they were able to provide rich information regarding the implementation of CBET approach and employability of the visually impaired graduates.

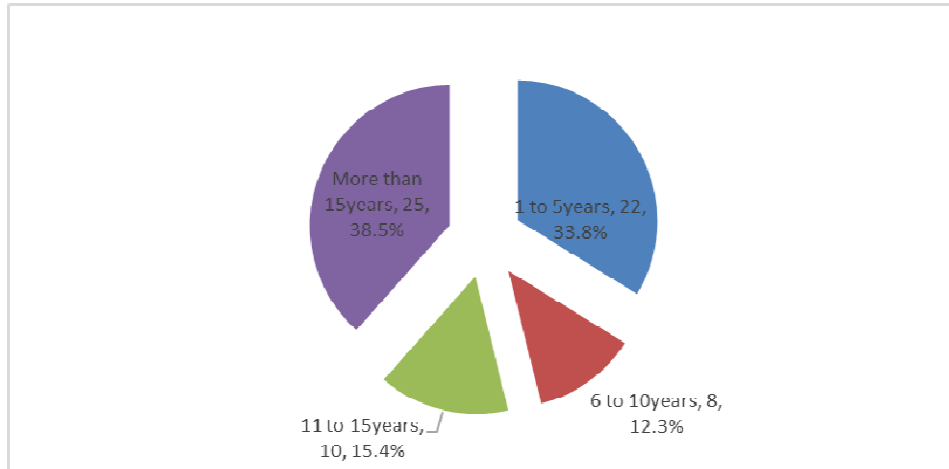


Figure 4.2: Years of Serving as a Trainer

4.4 Applicability of CBET Curriculum

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. The trainers were presented with a series of questions related to CBET Curriculum in relation to its contribution towards acquisition of employability skills among VILs.

4.4.1 Special Training on Implementation of CBET Curriculum

The 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 are presented in Figure 4.3. It was found that a majority of the trainers, 51 (78.5%), had received the training. The two principals in particular had received this special training. These findings implied that most of the trainers in the TVET institutions were informed on the requirements/details of the CBET curriculum and hence had the basic knowhow needed in implementing this

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.

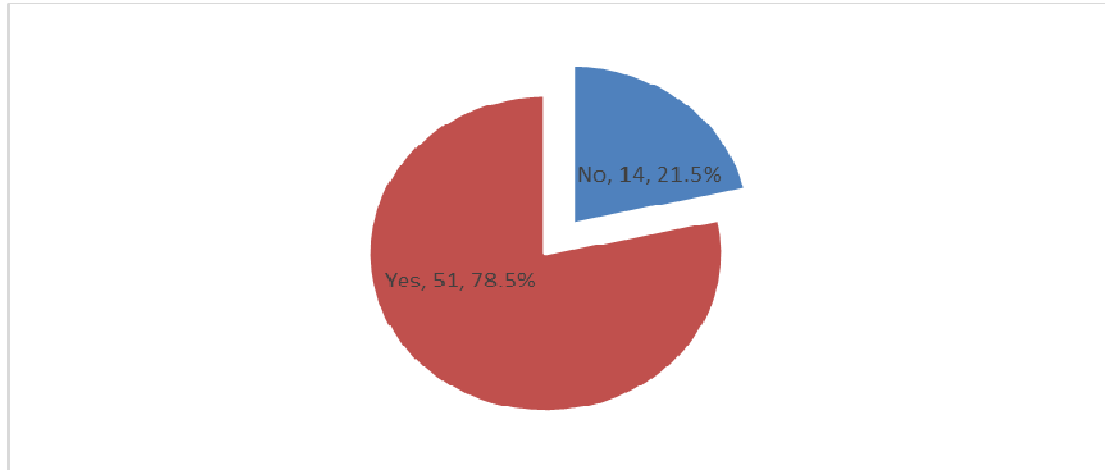


Figure 4.3: Special Training on Implementation of CBET Curriculum

4.4.2 Special Training obtained by Trainers in relation to CBET Implementation

The trainers who had undergone special training to equip them with requisite knowledge and skills to effectively implement the CBET curriculum were asked to indicate the kind of training obtained. The findings as outlined in Table 4.4 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.

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 though a concern was raised that in real class training, some conceptual skills were difficult for the visually impaired learners to understand. The study also found that the trainings were crucial in enhancing the acceptance of the CBET approach among the trainers as noted by one of the principal who was also a trainer.

The findings 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 implied that continuous capacity development for trainers in TVET institutions cannot be ignored if success in the implementation of CBET curriculum was to be achieved.

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. Kitaiinge (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 Kitaiinge 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.

Table 4.4: 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 |

During the focused group discussion with the Heads of Departments, it emerged that all of them (10 in number) 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 trainers ought to possess several attributes for effective teaching since they were the main implementers of the CBE system. Jeanne (2014) emphasizes that the fundamentals for technical training require the trainer to have subject knowledge, pedagogic experience and practical skills.

4.4.3 Descriptive Analysis on Applicability of CBET Curriculum

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 employability of visually impaired graduates. The findings are outlined in Table 4.5. 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.

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 programmes 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 programmes 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.

Table 4.5: Applicability of CBET Curriculum

| CBET Curriculum | Strongly Disagree | Disagree | Neutral | Agree | Strongly Agree | Mean | Std Dvn. |
|--|--------------------------|-----------------|----------------|--------------|-----------------------|--------------|-----------------|
| The time allowed for theory classes is adequate | 3.10% | 3.10% | 3.10% | 63.10% | 27.70% | 4.092 | 0.843 |
| The practical time allocated is adequate | 13.80% | 16.90% | 16.90% | 38.50% | 13.80% | 3.215 | 1.281 |
| There are adequate resources to implement the theory lessons | 6.20% | 32.30% | 21.50% | 24.60% | 15.40% | 3.108 | 1.201 |
| There are adequate resources to teach the practical lessons | 10.80% | 27.70% | 24.60% | 18.50% | 18.50% | 3.062 | 1.285 |
| Strategies used to deliver the CBET curriculum content to the learners meet the required standards | 3.10% | 10.80% | 20.00% | 36.90% | 29.20% | 3.785 | 1.082 |
| 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 | 0.818 |
| The assessment process used in the curriculum meet the required standards | 3.10% | 9.20% | 21.50% | 50.80% | 15.40% | 3.662 | 0.957 |
| The curriculum is adapted to meet visually impaired learners needs. | 16.90% | 26.20% | 16.90% | 15.40% | 24.60% | 3.046 | 1.452 |
| Average | | | | | | 3.491 | 1.115 |

4.4.4 Acquisition of Competencies by VILs as Stipulated in CBET Curriculum

The trainers were asked to give their comments on acquisition of competencies by visually impaired learners as stipulated in CBET curriculum in a number of areas.

4.4.4.1 Trainers Opinions on Basic Competencies

The trainers' comments on acquisition of basic competencies among the visually impaired learners in their institutions are summarized in Table 4.6. It was found that 33 (50.8%) of the trainers believed that basic competencies were fairly well catered for in the CBET curriculum, 39 (60.0%) pointed out the need for early introduction and assessment of basic competencies among learners so as to ascertain the strength and weaknesses of the training provided while 41 (63.1%) thought that there was need for more time and resources towards imparting basic competencies to the learners. Furthermore, 25 (38.5%) of the trainers noted that their visually impaired learners had been sufficiently equipped with basic competencies which enabled them to quickly acquire other competencies and also enabled them to cope with hardships in life.

These findings implied that basic competencies were a significant foundation in the successful implementation of the CBET approach since it was fundamental in building the required self-esteem of learners to acquire other technical competencies as one progressed in the training. They also ensured that the trainers had an easy time when imparting the other competencies. The findings also implied that there was room for improvements in ensuring that the visually impaired learners acquired the necessary basic competencies as stipulated in the CBET curriculum.

Table 4.6: Trainers Opinions on Basic Competencies

| Comments on Basic Competencies | Frequency | Percent |
|--|------------------|----------------|
| Fairly well catered for in the CBET curriculum | 33 | 50.8 |
| Early introduction and assessment | 39 | 60.0 |
| Need for more time and resources | 41 | 63.1 |
| VIL have sufficiently been equipped | 25 | 38.5 |

Comments regarding the acquisition of basic competencies by the visually impaired learners as stipulated in the CBET curriculum were also sought from the HODs. The HODs emphasized the importance of these competencies in laying foundation for acquisition of other competencies. One of the HODs noted that;

“They are quite appropriate in assisting learners to acquire other kinds of knowledge. There is need to emphasize on these competencies since we build on them in imparting other competencies.”

Another HOD pointed out that;

“They help learners in quickly comprehending theory lessons.”

The need for more resources in developing these competencies among learners was emphasized where one of the HODs noted that,

“Appropriate and more learning resources are critical for enhanced acquisition of basic skills among the visually impaired. There is much to be done in the areas of communication and professionalism among our visually impaired learners.”

These findings re-emphasize the role of basic competencies in the implementation of the CBET curriculum by preparing the visually impaired learners to acquire other competencies which underscore the importance of their early introduction and assessment as suggested by the trainers. However, continuous improvement is required to enhance the acquisition of these competencies by the visually impaired learners especially through setting aside more resources particularly time and learning materials.

4.4.4.2 Trainers Opinions on Common Competencies

The trainers' comments in relation to acquisition of common competencies among the visually impaired learners in their institutions are summarized in Table 4.7. The findings showed that 13 (20.0%) of the trainers noted that their learners had been able to fit within the society after acquiring these competencies. 27 (41.5%) of the trainers noted that there was a need for tailoring the training needed in acquisition of common competencies to market demands and the needs of the visually impaired learners. The findings also showed that 16 (24.6%) of the trained recommended the introduction and development of common competencies at all levels of transition among the learners, 32 (49.2%) felt that more resources and time was needed for learners to be adequately equipped with these competencies while 43 (66.2%) of the trainers believed that there was need for adaptability of training resources through regular upgrading if learners were to be adequately equipped with common competencies. The findings further revealed 11 (16.9%) of the trainers thought it was crucial to enhance the number of trainers, 26 (40.0%) believed that their learners had acquired common competencies as specified in the curriculum while 22 (33.8%) noted that training these skills posed minimal challenge to them.

These findings showed that common competencies were also very fundamental in laying the foundation for upgrading to specialized core competences and were crucial in ensuring that the visually impaired learners were able to stand for themselves in the society. They enhanced the self-esteem of these learners and motivated them to pursue other technical competencies without fear or feeling inferior to other abled learners.

Table 4.7: Trainers Opinions on Common Competencies

| Comments on Common Competencies | Frequency | Percent |
|--|------------------|----------------|
| Enabled learners to fit within the society | 13 | 20.0 |
| Tailoring training to market demands and learner's needs | 27 | 41.5 |
| Introduction and development at all levels of transition | 16 | 24.6 |
| More resources and time needed | 32 | 49.2 |
| Adaptability of training resources through regular upgrading | 43 | 66.2 |
| Enhance number of trainers | 11 | 16.9 |
| Attained per specifications | 26 | 40.0 |
| Training these competencies posed minimal challenge | 22 | 33.8 |

During the focused group discussion with the HODs, it was argued that common competencies had helped the visually impaired learners to interact with the society.

According to one of the HODs,

“They use them to stand by themselves in all aspects. If well-adjusted, they will make learners to comfortably fit in the society.”

In support, another HOD noted that,

“These competencies help in leadership and interrelationship with others.”

These findings underline the role of common competencies in equipping the visually impaired learners with the right posture to fit in the society which is a step towards minimizing the stigma these persons faced. In so doing, the learners were able to have the confidence to compete with other abled persons within the society in various positions.

4.4.4.3 Trainers Opinions on Core Competencies

The trainers’ comments on the acquisition of core competencies among their visually impaired learners are provided in Table 4.8. The findings showed that 9 (13.8%) of the trainers noted that there was need for curriculum touching on core competencies to be holistic before its implementation, 34 (53.3%) noted that training core competencies

posed a great challenge when dealing with visually impaired learners while 58 (89.2%) of the trainers noted that there was need for more materials and improved equipment that met training standards.

The study also found that 51 (78.5%) of the trainers called for more resources in terms of specialized tools and equipment when imparting core competencies, 47 (72.3%) noted the need for competencies imparted to be tailored or adapted to needs of visually impaired learners, 39 (60.0%) called for allocation of more time for learners to acquire these skills while 6 (9.2%) of the trainers argued that some of the core competencies were not achievable by the visually impaired learners. The findings further showed that 32 (49.2%) of the trainers indicated that most learners had not sufficiently acquired core competencies, 2 (3.1%) stated that the core competencies acquired varied with the areas of training, 13 (20.0%) indicated that the core competencies acquired had helped learners to perform their duties diligently while 17 (26.2%) stated that there was need for the core competencies taught to be structured to enable learners produce items for use and sale.

The findings implied that core competencies were the most challenging to impart when implementing the CBET curriculum especially where learners were disabled and that much efforts and measures to ensure that the curriculum was adapted to make it easy for the visually impaired learners to acquire these competences where necessary. To minimize this challenge, Engestrom cited by Ngure (2013) on Job skilling theory explains how the skills formation process takes place in stages. Trainers can follow this procedure to help VIL acquire the core competencies. The stages according to

Engestrom are as follows: The novice phase is the stage in which the trainee acts only according to the instructions specified; the amateur stage is where he is guided to do something in a clear-cut way. The competent stage is where the trainee is able to perform the tasks assigned and the final stage is proficient level where trainees are able to see the important benefits of the skills, which can be demonstrated better while expert trainees are no longer, restricted as they are able to perform those tasks on their own. The findings also implied that the trainers needed more capacity development in areas touching on core competencies for them to adequately teach the visually impaired learners and hence without such training, the implementation of this curriculum was constrained.

Table 4.8: Trainers Opinions on Core Competencies

| Trainers Comments on Core Competencies | Frequenc y | Percent |
|---|-----------------------|----------------|
| Need to be holistic before implementation | 9 | 13.8 |
| Posed serious challenge in their training | 34 | 52.3 |
| Need for more materials and improved equipment that meet training standards | 58 | 89.2 |
| More resources in terms of specialized tools and equipment | 51 | 78.5 |
| Need to be tailored or adapted to needs of visually impaired learners | 47 | 72.3 |
| Need for more time | 39 | 60.0 |
| Some are not achievable by the visually impaired learners | 6 | 9.2 |
| Most learners have not sufficiently acquired them | 32 | 49.2 |
| Vary depending on area of training | 2 | 3.1 |
| Helped learners to perform their duties diligently | 13 | 20.0 |
| Need to be structured to enable learners produce items for use and sale | 17 | 26.2 |

4.4.5 Possession of Recommended Elements of Core Competencies among VILs

According to CBET curriculum, in each training unit, a learner is supposed to have a minimum of three (3) to a maximum of five (5) elements of core competencies before

they are declared as competent. The study sought trainers' views regarding whether their visually impaired learners met this requirement. The study found that 38 (58.5%) of the trainers noted that their visually impaired learners had met this requirement. The findings implied that even though slightly more than half of the visually impaired learners in TVET institutions were competent, a large number of the learners were yet to be competent by end of their training which meant that measures to ensure that all learners acquired core competencies were necessary. This finding can be attributed to the fact that core competencies were the most challenging to impart when implementing the CBET curriculum especially where learners were visually impaired and are in line with the sentiments that most learners had not sufficiently acquired them and that some core competencies were not achievable by the visually impaired learners.

Bell (2014) emphasized that CBET assessment measured whether a learner was competent or not which signified that only two likely outcomes could be attained in the process of assessing the learners, that they were competent or were not yet competent. Hence, if learners did not meet the set standards, they were required to do more practice after which they were assessed again. Anane (2013) also argued that a satisfactory completion of education and training was anchored on achievement of all specified competencies which meant that at times, some of the visually impaired learners did not successfully complete their training. A survey by World Bank (2014) on youth employment in Sub-Saharan Africa revealed that employers were still concerned about the alarming lack of relevant job competencies among the technical education graduates (World Bank, 2014).

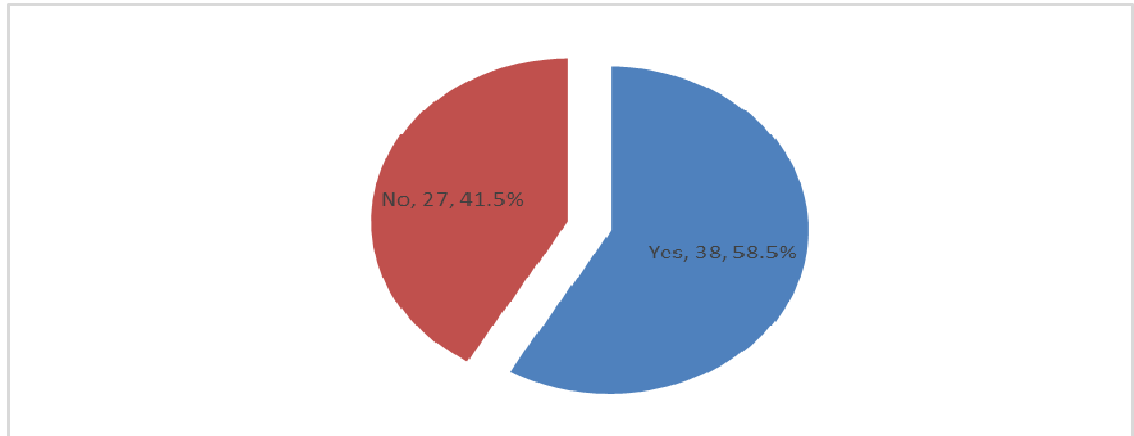


Figure 4.4: Possession of Recommended Elements of Core Competencies among VILs

Failure of a large number of visually impaired graduates to meet the recommended CBET curriculum requirement on core competencies meant that the chances of most of these graduates securing jobs were lowered since they were not competent in some fields. This was confirmed by one of the self-employed graduate who remarked that;

“Some customers request for knitted items of particular patterns and since I was not able to acquire that skill, I just tell them to seek services elsewhere.”

The findings support that of a study by Abban and Quarshie (2016) who found that after graduating, visually impaired learners had been unable to secure employment due to lack of competency and mismatch of the skills acquired and available jobs in the job market. The findings support the recommendation of this study that components factored in CBET needed to inclusively consider the diversified needs for visually impaired learners.

4.4.6 Actions to ensure VILs meet Recommended Requirement on Core Competencies

The trainers were asked to state some of the actions taken to ensure that visually impaired learners from their institutions met the recommended CBET curriculum requirement on core competencies. The findings as summarized in Table 4.9 showed that 18 (75.0%) of the trainers noted that more time and adapted resources were provided for learners to perfect these competencies, 9 (37.5%) indicated that improvement and adjusting or adapting the curriculum to meet the needs of learners and which considered their difficulties was carried out while 2 (8.33%) of the trainers indicated that they ensured that there was holistic assessment of the core competencies acquired by the learners.

These findings implied that the TVET institutions under study were committed to ensuring that their visually impaired graduates were not half baked and ensured that even when the learners did not acquire all the relevant competencies in the first phase of training, they had a chance of going back to the institute to perfect them or learners were given more time to learn. DeiBinger and Hellwig (2011) points out that CBET is a study program with clearly defined, concrete and measurable objectives of which every student participating in the program must have demonstrated mastery upon program completion. Bunyi and Mumo (2015) also notes that CBET is a mode of training where the emphasis is placed on the acquisition of competence in performing skills. The findings supported the recommendation by Bell (2014) that if learners did not meet the required standards, they needed to do more practice after which they could be assessed again.

Table 4.9: Actions to ensure VILs meet Recommended Requirement on Core Competencies

| Category of Respondents | Frequency | Percent |
|---|------------------|----------------|
| Provision of more time and adapted resources for learners to perfect the competency | 18 | 75.0 |
| Adapting the curriculum to meet their needs and consider their difficulties | 9 | 37.5 |
| Holistic assessment | 2 | 8.33 |

The responses of the trainers were in line with the views given by the HODs during the focused group discussion. The HODs unanimously noted that learners were given more time to perfect their competencies in cases where they did not meet the recommended CBET curriculum requirement on core competencies.

“We always encourage the learners to go back and continue with learning to acquire the unattained competencies, that is, a second chance to perfect their competencies.”

Another HODs stated that,

“The periods of training may be extended based on individual education programme.”

In explaining the need for more time for training on an individual basis, another HOD highlighted that;

“The degree of disability and individual difference among VIL influence their ability to acquire some skills. Thus, by giving the VIL opportunities to repeat areas where they were yet to be competent, many were able to acquire the skills. However, there were cases when some learners did not acquire the skills even after repeating; hence they ended up skipping those areas.”

The findings implied that the acquisition of core competencies was at times determined by individual characteristics such as the severity of their visual impairment and hence an all fits approach to training might not be efficient. These findings underscored the need for individualized training programmes and allocation of sufficient time and resources to ensure that the needs of the slow learners were catered for. Some of the

sentiments given during the FGD implied that some core competencies were not achievable by some of the visually impaired learners as highlighted by a number of trainers.

The findings were partly in line with the Kenya Policy Framework on Technical and Vocational Education and Training (2012) which stated that CBET was not flexible enough to meet the diverse needs of the learners. Under the CBET system as highlighted by Ford (2014), participants progress through the instructional program at their own rate by demonstrating the attainment of the specified competencies. Kaaya (2012) also emphasized that CBET as a self-paced learning method allowed learners to acquire those individual skills they found challenging at their own pace, practicing and refining as much as they could.

4.4.7 Adaptability of the CBET Curriculum towards Employability of the VILs

The thoughts of the Heads of Departments regarding the adaptability of the CBET curriculum towards employability of the visually impaired graduates were 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 hand outs.”

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 programmes 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. This would ensure that the needs of persons with special needs were catered for in order to enhance the applicability of the CBET approach in enhancing the employability of the visually impaired. These graduates must be equipped and empowered for them to be marketable in the labour markets which are skewed towards skill orientation and hence when their needs were not catered for in the curriculum, their chances of getting employment were meagre especially where technical skills were demanded.

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.

In line with the study's emphasis on continuous review of CBET curriculum to ensure that the needs of persons with special needs were catered for, Palmer (2017) argued that in this era where emerging industries were in dire need of expertise to run their industries, these graduates were still struggling to get employment despite existence of CBET. The study findings also agreed with that of Bunyi and Mumo (2015) who added

that CBET curriculum had not been shaped to endorse quality of service envisioned to be delivered to learners with special needs more so the visually impaired. The findings further supported the views by Abban and Quarshie (2016) who pointed out that the main challenge for the learners with visual impairment was related to lack of adapted CBET curricular among others which hindered them from adequately attaining quality skill competence leading to unemployment upon graduating.

4.4.8 Adequacy of CBET Approach in preparing Learners for the Job Market

The visually impaired graduates were asked to state whether CBET as the current mode of training in TVET institutions adequately prepared the visually impaired for the job market. The findings as summarized in Figure 4.5 showed that a majority of the graduates who took part in the study, 39 (76.5%), indicated that this approach in deed prepared them for the job market. Those who felt that the approach did not adequately prepare the graduates attributed this to the short duration of courses which meant that some of the content was not fully covered. During the interview with the MOE official, they highlighted that as ministry, they had made efforts to ensure that skills being taught to visually impaired trainees were in line with the industry demands through getting advice from industry stakeholders when advising the committee in charge of developing the curriculum. These findings underscore the importance of CBET towards enhancing the participation of the visually impaired graduates in the job market. According to Kavindi (2014), the main objective of CBET is to train competent individuals with transferrable skills and link education and training to the skills needed by employers. Anane (2013) also viewed competence based education and training as a strategy to preparing learners more effectively for the real workplaces by taking into

account the industry requirements. CBET approach as perceived by Kufaine and Chitera (2013) helped learners to acquire skills that were necessary for the industry.

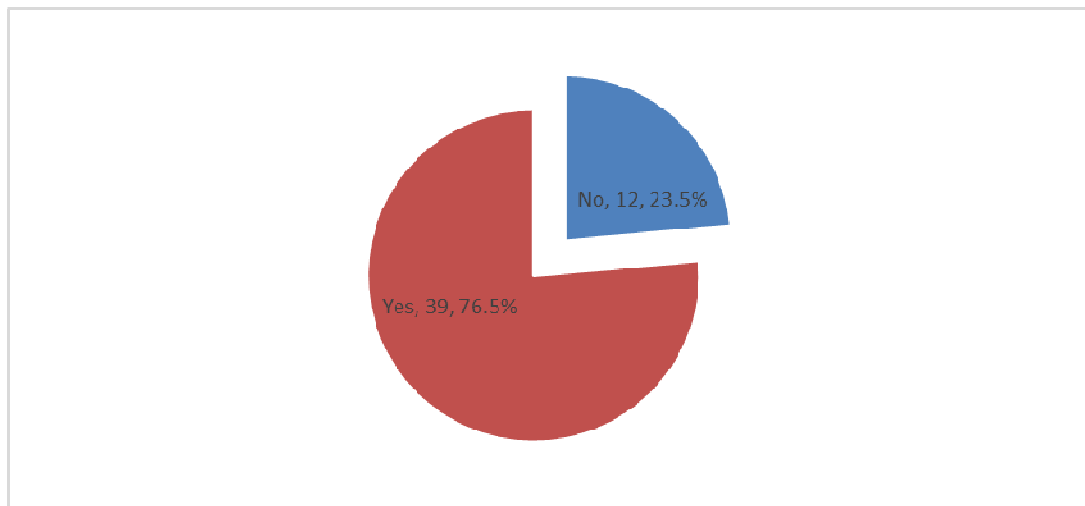


Figure 4.5: Adequacy of CBET Approach in preparing Learners for the Job Market

The graduates were asked to state the knowledge imparted to them through the CBET approach. During the interviews, the graduates indicated they had acquired knowledge on how to market their businesses, general business management, entrepreneurship knowledge, knowledge on how to communicate, treat and handle their customers as well as knowledge on business planning, how to execute business ideas and how to fit within the society. These findings implied that through the CBET approach, the visually impaired graduates were able to acquire diverse kinds of knowledge which were especially very crucial in preparing the graduates for self-employment.

The findings supported the assertions by Ayonmike et al. (2014) that CBET aimed at preparing learners more effectively for real workplaces, which meant that the acquisition of competences took into account the requirements of companies and

industry. The findings also supported the study carried out by Mkpa (2001) which showed that CBET provided the technical knowledge and vocational skills which imparted the necessary skills for self-employment or absorption by industries.

4.4.9 Areas of Improvement in regards to CBET Curriculum

The trainers were asked to give their suggestions regarding the areas that needed improvement in regards to CBET curriculum and the findings are outlined in Table 4.10. It was noted that 16 (24.6%) of the trainers called for more trainers for smooth delivery of CBET content, 58 (89.2%) noted that more resources and time were needed in learning, 27 (41.5%) of the trainers called for increased integration of theory content with practical lessons, 3 (4.6%) recommended enhanced clarity of curriculum for the visually impaired learners while 1 (1.5%) recommended the awarding of certificates in special skills.

The findings further showed that 9 (13.8%) of the trainers suggested the development of occupational standards in relation to content taught to the visually impaired learners, 13 (20.0%) argued that areas that needed machine operation needed to be tailored to the needs of visually impaired learners, 31 (47.7%) called for regular review and modification of CBET curriculum to meet the needs of the visually impaired, 19 (19.2%) of the trainers called for enhancing of the strategies used in delivering CBET curriculum content to the visually impaired learners in particular core competencies, 2 (3.1%) noted that exams needed to be set considering the needs of the visually impaired learners, 46 (70.8%) of the trainers recommended for more CBET curriculum materials and resources while 21 (32.3%) of the trainers called for the updating of content related

to technology. Last but not least, 13 (20.0%) of the trainers emphasized that there should be strict evaluation (integrity of examiners) of learners.

The findings implied that there were several areas of improvement which could be made to make the CBET curriculum more applicable in enhancing the employability of the visually impaired graduates and hence continuous review of the curriculum and structures for its implementation was inevitable. Bunyi and Mumo (2015) suggested that for CBET objectives to be achieved by VI learners, adaption of the curricula was necessary.

Table 4.10: Areas of Improvement in regards to CBET Curriculum

| Improvements in CBET Curriculum | Frequency | Percent |
|---|------------------|----------------|
| More trainers for smooth content delivery | 16 | 24.6 |
| More resources and time needed in learning | 58 | 89.2 |
| Increase integration of theory content with practical lessons | 27 | 41.5 |
| Clarity of curriculum for the visually impaired learners | 3 | 4.6 |
| Awarding certificates in special skills | 1 | 1.5 |
| Developing occupational standards in relation to content taught to visually impaired learners | 9 | 13.8 |
| Areas that need machine operation need to be tailored to needs of visually impaired learners | 13 | 20.0 |
| Regular review and modification of curriculum to meet needs of the visually impaired | 31 | 47.7 |
| Enhance strategies used in delivering CBET curriculum content in particular core competencies | 19 | 29.2 |
| Setting exams considering needs of the visually impaired learners | 2 | 3.1 |
| More CBET curriculum materials and resources | 46 | 70.8 |
| Updating content related to technology | 21 | 32.3 |
| Strict evaluation (integrity of examiners) of learners | 13 | 20.0 |

4.4.10 Correlation Between Applicability of CBET Curriculum and Acquisition of

Employability Skills among VILs

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. Pearson correlation coefficient was used in this study and it ranged from -1 to +1. The strength of these coefficients were interpreted using the criteria outlined by Sedgwick (2012) as follows: +/- .00 to .19 is very weak, +/- .20 to +/- .39 is weak, +/- .40 to .59 is moderate, +/- .60 to .79 is strong while +/- .80 to 1.0 is very strong. The tests were conducted at the 95% confidence level or the 0.05 significance level. The rule of the thumb was that a calculated p value greater than the critical p value which was set at 0.05 for this study implied that the correlation between the variables was insignificant and vice versa.

The findings outlined in Table 4.11 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 ($r=0.677$, $p=0.000$, $p<0.05$). 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 4.11: Correlation Between Applicability of CBET Curriculum and Acquisition of Employability Skills among VILs

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

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

4.4.11 Regression Analysis between Applicability of CBET Curriculum and Acquisition of Employability Skills among VILs

The study carried out bivariate regression analysis to show the relationship between applicability of CBET curriculum and acquisition of employability skills among visually impaired learners in TVET institutions in Kenya. The main aim was to quantify the effect of applicability of CBET curriculum on acquisition of employability skills among these learners. The following hypothesis was therefore tested:

H₀₁: Applicability of CBET curriculum does not significantly affect the acquisition of employable skills among visually impaired learners in TVET institutions in Kenya.

4.4.11.1 Model Summary

Table 4.12 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. The findings implied that the applicability of CBET curriculum was a satisfactory predictor in explaining the acquisition of employable skills among visually impaired learners in TVET institutions in Kenya.

Table 4.12: 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

4.4.11.2 Testing for Model Fitness

The study tested the significance of the model for the relationship between applicability of CBET curriculum and acquisition of employability skills among visually impaired learners in TVET institutions in Kenya. In order to establish whether the model used in the study fitted the population or provided a better fit to the data, the F statistic was generated and its associated p value were generated. If the significance (p value)

associated with the F value was less than 0.05, the model was considered significant, otherwise insignificant. The findings as shown in Table 4.13 showed that the model used in showing the link between applicability of CBET curriculum and acquisition of employability skills among the visually impaired learners in TVET institutions in Kenya was statistically significant given $F(1, 63) = 53.197, p = .000 < 0.05$. The findings also implied that applicability of CBET curriculum was a satisfactory predictor of the acquisition of employability skills among VILs in TVET institutions in Kenya.

Table 4.13: Model Fitness Results for Applicability of CBET curriculum

| Model | | Sum of Squares | df | Mean Square | F | Sig. |
|-------|------------|----------------|----|-------------|--------|-------|
| 1 | Regression | 8.697 | 1 | 8.697 | 53.197 | .000b |
| | Residual | 10.3 | 63 | 0.163 | | |
| | Total | 18.997 | 64 | | | |

a Dependent Variable: Acquisition of Employability Skills among VILs
b Predictors: (Constant), Applicability of CBET Curriculum

4.4.11.3 Regression Coefficient for Applicability of CBET Curriculum

The regression output as presented in Table 4.14 helped the researcher in determining whether the applicability of applicability of CBET curriculum had a significant effect on the acquisition of employability skills among visually impaired learners in TVET institutions in Kenya. This was done by observing β coefficient and its associated t statistic and p value. The findings showed that the applicability of CBET curriculum had a significant positive effect on the acquisition of employability skills among visually impaired learners in TVET institutions under study given $\beta = 0.534, t = 7.294, p = .000, p < 0.05$.

The findings implied that a unit increase in the applicability of CBET curriculum in these institutions would result to increased acquisition of employability skills among visually impaired learners in TVET institutions by 0.534 units holding all other factors constant. These results led to the rejection of the null hypothesis and hence an inference made that the applicability of CBET curriculum had a significant effect on the acquisition of employability skills among the visually impaired learners in TVET institutions in Kenya.

The findings agreed with that of a study by Boahin and Hofman (2013) which while focusing on TVET institutions in Ghana found a strong and statistically significant effect of competence based training on the acquisition of employability skills citing that these skills were best acquired in teaching and learning environments that involved more student-centred learning which is the basis for CBET. The findings were also incongruence with that of Ayonmike, Chijioke, and Okeke (2014) who while focusing on TVET institutions in Nigeria found that the introduction of CBET in TVE programmes helped in tackling the problem of lack of employable skills among TVE graduates.

The following model was therefore fitted;

Acquisition of Employability Skills among Visually Impaired Learners in TVET Institutions in Kenya = 2.080 + 0.534 Applicability of CBET Curriculum

Table 4.14: Regression Coefficient for Applicability of CBET Curriculum

| Model | | Unstandardized Coefficients | | Standardized Coefficients | t | Sig. |
|-------|----------------------------------|-----------------------------|------------|---------------------------|-------|-------|
| | | B | Std. Error | Beta | | |
| 1 | (Constant) | 2.080 | 0.269 | | 7.734 | 0.000 |
| | Applicability of CBET Curriculum | 0.534 | 0.073 | 0.677 | 7.294 | 0.000 |

a Dependent Variable: Acquisition of Employability Skills among VILs

4.5 Adaptability of Facilities applied in CBET Implementation

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

4.5.1 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 4.15. The findings as presented in Table 4.15 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 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.

Table 4.15: 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 |

4.5.2 Number of Learners During Practical Lesson

The study assessed the number of learners they had during practical lessons and the findings are as outlined in Figure 4.6. 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.

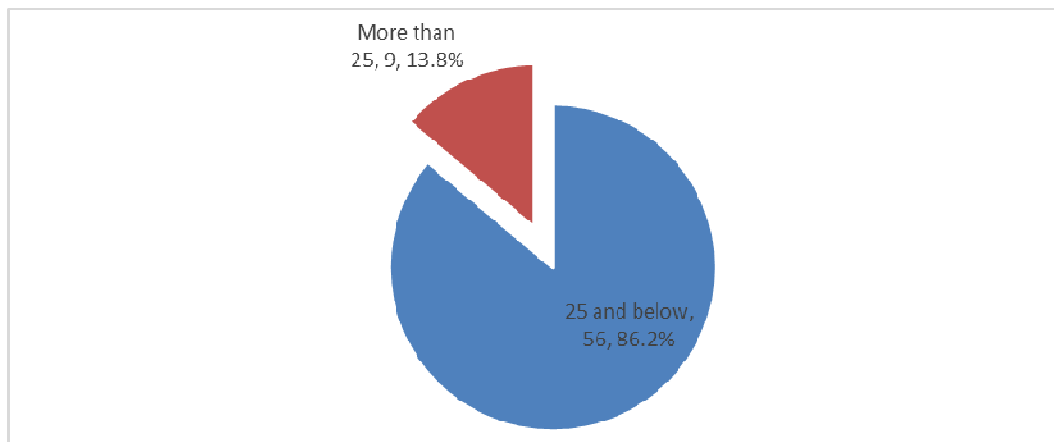


Figure 4.6: Number of Learners during Practical Lesson

4.5.3 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 displayed in Table 4.16 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 while 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 citing 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 in most practical classes, the number of equipment was not enough since 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 for 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 4.16: 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) |

4.5.4 Challenges faced while Implementing CBET Curriculum

During the focused group discussion with the HODs, they were asked to indicate some of the challenges they had faced while implementing the CBET curriculum in relation to theory teaching/training materials and also resources for practical sessions.

4.5.4.1 Challenges related to Theory Teaching/Training Materials

The main challenges highlighted by the HODs included lack of adequate reference materials, lack of enough resources, communication challenges with learners, adequate space, and also resources/materials that were not adapted to the needs of the visually impaired learners. One of the HODs alluded that,

“Theory teaching has been a challenge especially as it pertains to reference materials and training equipment because they are quite expensive. We also lack adequate learning space in the institute. There are few resources but mainly more trainees.”

In support, another HOD asserted that,

“There is general lack of books in braille and large prints which are equipment suitable for learners with visual impairments. Also, many of the training materials available have not been adapted to fit the needs of our visually impaired trainees. This is a challenge to us implementing the curriculum effectively.”

In explaining communication challenges with learners, one of the HODs pointed out that,

“We have cases of communication issues with learners who have not acquired the national languages and have no writing skills. They are also not able to

read and write braille, so they only listen to the trainers as they teach and dictate notes.”

The above findings have an implication that VIL depended only on teacher’s notes due to lack of textbooks. This situation was alarming since there were no libraries in the sampled institutions where these learners could enrich what they were taught. Braille machines were also noted to be few as they are very expensive for the VIL learners to purchase. They only depended on the few in the institutes. Thus, lack of adequate teaching learning resources negatively affects CBET. Munguti (2016) emphasized that for effective learning to take place, teaching learning resources are elements which cannot be overlooked. In addition, the significance of teaching learning resources has been aptly captured by Campbell et al. (2009). They say that in the use of resource, learners’ self-sufficiency in the learning process is enhanced. This is because they ask productive questions; they synthesize information, analyze issues as well as interpret and evaluate information at their disposal.

According to Sullivan (2015), CBET programmes required the availability of detailed training materials which were keyed to the competencies to be achieved and were designed to support the acquisition of knowledge and skills. Anane (2013) also emphasized that a range of support materials that included audiovisual, print and simulations (models) keyed to the skills being mastered needed to be available for utilization while implementing the CBET approach.

4.5.4.2 Resources for Practical Sessions

While discussing the challenges related to resources for practical sessions in implementing the CBET approach of training, all the 10 HODs unanimously noted that

the resources available in their institutes were inadequate given that the equipment/machines used were very expensive and that the workshops were not enough, a challenge which was cited to have persisted in these institutes for long. Asiyai (2012) identified the importance of school facilities in teaching and learning noting that inadequate and poor maintenance of these facilities resulted to poor teaching and learning in the long run. Akinsolu (2004) also reiterated that inadequate school facilities affected the implementation of sound educational curriculum.

4.5.5 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.

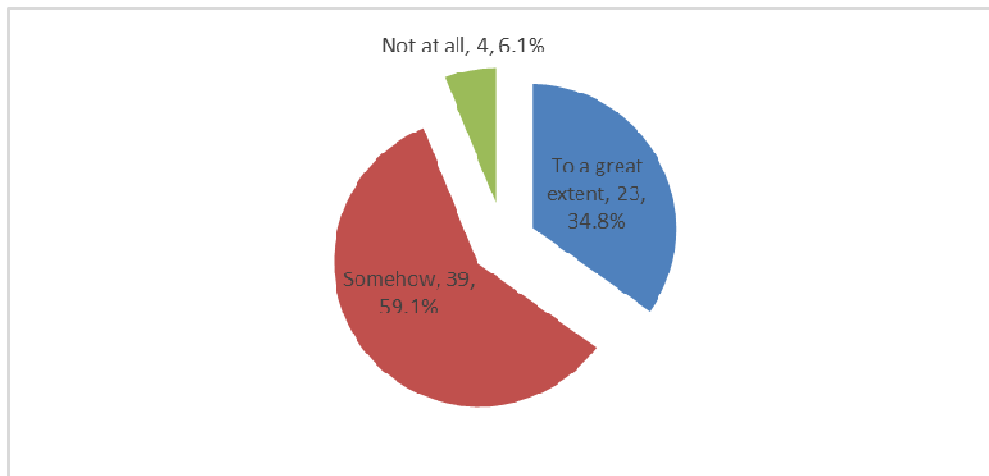


Figure 4.7: Comparability of Training Equipment with those at Workplaces (Trainers)

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. Some of the comments given during the interviews are as outlined;

“They are closely related in some cases. Some equipment/machines and tools we meet in the field are more complex to use but we learn through discovery.”

Graduate I

“Some facilities match the ones we have in the institute but some facilities in the industry are not in school.”

Graduate II

“Somehow related but many complex tools and equipment are met in the field. Sometimes we do not know where to start the job.”

Graduate III

“The ones at the work place are more advanced. However, with refresher training and on job training, we are able to learn how to use them.”

Graduate IV

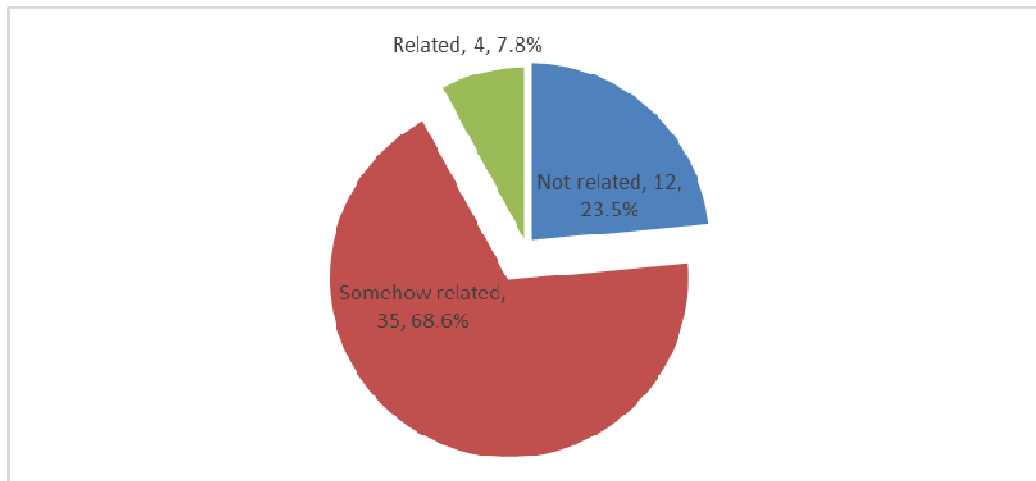


Figure 4.8: Comparability of Training Equipment with those at Workplaces (Graduates)

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 was 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.

Below are visual images of one of the institutes' workshop and the industry knitting machines.



Image 4.1: Knitting Machines found in the Institute's Workshop



Image 4.2: Modern Knitting Machine in a Workplace



Image 4.3: Modern Knitting Machine in a Workplace

In view of the above findings on types of training/ work place equipment, it was evident that the VIL trained using simple knitting machines such as Singer model 360, Silver model 228 and Riccar model 710. Due to nature of their disability, it was established that they were not introduced to advanced knitting machines which were found in the industries during data collection. These knitting machines include Double bed and Hand flat models. This translates to low rate of employability among VI graduates with knitting skills.

Further, the study established that massage beds used to train the VIL were similar with those in workplace. As shown in image 4.4 and 4.5 below. Never the less it was noted that recently, there are other advanced massage beds as shown in image 4.6 below. Notably, this study established that these massage beds were expensive for VI graduates to afford. For this reason, very few VI graduates in this trade area were employed.



Image 4.4: Massage Bed Used for Training VIL in Institute Green



Image 4.5: Massage Bed Used in Work place by VI Graduates.



Image 4.6: Advanced and Expensive Massage Bed used in Work Place

4.5.6 Adaptability of Facilities in TVET Institutions in Imparting Employable Skills to VIL

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 Green 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. Moreover, during the interview with the members of civil society, 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.

On the same vein, it was established that in the Information Communication Technology (ICT) departments in the sampled institutions, computers were adapted to suit VIL needs by installing Job Access With Speech software. However, the HODs concerned pointed out that they only taught five computer packages to the VIL since other programmes like MS Publisher, Corel draw, Adobe Illustrator and Photoshop, among others were advanced for VIL as there was no adapted software for such programmes. Thus, the ICT skills learnt by VIL were minimal hence employment chances for VI graduates were low.

This is evident that with more efforts and consultations, training/ workplace equipment can be adapted for VIL and VI graduates. These findings indicated that the use of unmodified training equipment hindered VIL from acquiring some of the skills. They only acquired basic skills since they mainly used the manual equipment as they could not operate the advanced ones. Implying, low chances of employment among VI graduates due to lack of adapted training and work workplace equipment.

The findings supported the recommendations by Anindo (2016) that there was urgent need to modify equipment and provide adequate facilities to ensure that VI graduates coming out of TVET acquired skills relevant to the employment market demands in industries and business organizations. In agreement with this, the TVET policy in Kenya affirmed that one challenge facing TVET 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.

The study further established that the physical environments in both institutions were least restrictive hence easy and safe mobility for VIL. Through observation, it was confirmed that within the institute buildings, there were ramps and rails, pathway holes were filled and pathways were made of cabros. Affordable white canes were also available in the institutes. In addition, obstacles which could hinder mobility for VIL

were also minimized. For instance, the researcher observed that all opened windows panes faced the wall hence VIL were not hurt by the windows while walking and there were no chairs left outside the compound. In addition, chairs and tables in the workshops and dining halls were well arranged hence safe mobility for VIL. Moreover, when the researcher visited the institutes, she was given instructions by the gate personnel on where to park her car so as not to obstruct the VI persons within the institutions.

On social environment within the institutes, all the VI graduates 51(100%) were in agreement that all the community members within the institutes were loving, caring and guided them when they lost direction hence they felt safe while in the institutes. However, the situation was noted to be different in workplaces as far as physical environment was concerned. Through observation, it was evident that the buildings were not disability friendly hence the VI graduates faced challenges in mobility.

4.5.7 Adequacy of Facilities in Preparing Graduates for the Job Market

The graduates were asked to assess the adequacy of facilities in their former institutions in preparing them for the job market. The findings as summarized in Figure 4.9 showed that a majority of the visually impaired graduates, 32 (62.7%) noted that the facilities were inadequate in preparing them for the job market. In explaining, one of the graduates noted that,

“Training equipment were few, we used to share. Different classes were normally merged in one class at the same time.”

In support, another graduate noted that,

“The facilities were inadequate and hence there is need for more input to sustain the needs of visually impaired persons. They need to be improved and more adapted to our needs.”

The findings implied that inadequate facilities that were not adapted to the needs of the visually impaired graduates and not matching the needs of the market were an impediment to the participation of the visually impaired in the labour markets. The findings support the argument by Ikoya and Onoyase (2008) that teaching facilities which included infrastructure and all material resources supported the delivery of quality education. The findings were also in agreement with that of Mkpa (2001) that in all levels of educational system, instructional facilities or teaching and learning materials wean indispensable factor in the attainment of educational goals. The study also agreed with Umar and Ma'aji (2010) who warned that where the facilities, equipment and tools were not adequate and appropriate for use by the students, the acquisition of skills was low leading to production of unskilled personnel who are unemployable and unproductive. The findings were further in line with Kitainge (2017) who found that in Kenya, facilities for TVET institutions were very limited, especially the workshop equipment.

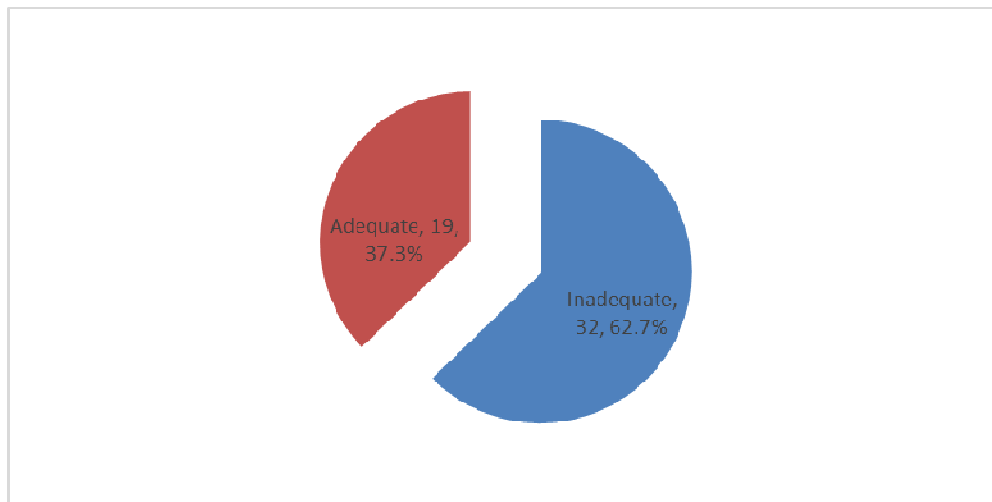


Figure 4.9: Adequacy of Facilities in preparing Graduates for the Job Market

4.5.8 Suitability of Facilities in Training VILs on Preparation for Job Market

The study graduates were asked to comment on the suitability of the facilities used in training the visually impaired learners in the institutes under study in their preparation for the job market in relation to training equipment and tools, resource materials and workshops.

4.5.8.1 Suitability of Training Equipment and Tools

The graduates' comments regarding the suitability of training equipment and tools are presented in Table 4.17. The findings showed that 25 (49.0%) of the visually impaired graduates noted that the training equipment and tools were suitable but limited/inadequate, 11 (21.6%) indicated that equipment and tools were suitable but not well maintained, 9 (17.6%) indicated that these equipment and tools were not satisfactorily suitable while 6 (11.8%) noted that the training equipment and tools were suitable and adequate. In explaining, one of the graduates argued that,

“They were quite suitable but the number of trainees exceeded the equipment and tools.”

This view was supported by another graduate who indicated that,

“They were suitable but did not match the number of trainees. Dummies were not enough; they should be improved because many would be over-crowded or each learner when given a chance would make other set what they manipulated.”

Another graduate added that,

“The facilities were enough but not well maintained. Some facilities were not adapted to suit our needs as the visually impaired.”

Burkett and Bowers (1987) while supporting the view that the condition of facilities in TVET institutions had a strong effect on skills acquisition of students reported that students in newer and adequate facilities outperformed students in older and inadequate

institution facilities. According to Umar and Ma’aji (2010), where the facilities, equipment and tools are not adequate and appropriate for use by students in TVET institutions, their acquisition of skills was constrained leading to production of unskilled personnel who were unemployable and unproductive.

Table 4.17: Suitability of Training Equipment and Tools

| Improvements in CBET Curriculum | Frequency | Percent |
|--|------------------|----------------|
| Suitable but limited/inadequate | 25 | 49.0 |
| Suitable but not well maintained | 11 | 21.6 |
| Not satisfactorily suitable | 9 | 17.6 |
| Suitable and adequate | 6 | 11.8 |
| Total | 51 | 100.0 |

4.5.8.2 Suitability of Resource Materials

The study found that even though 43 (84.6%) of the graduates indicated that the resource materials were suitable, they noted that these materials were not adequate. Sullivan (2015) emphasizes that CBET programmes require the availability of detailed training materials which are keyed to the competencies to be achieved and are designed to support the acquisition of knowledge and skills, a view supported by Anane (2013) who highlighted that a range of support materials that may include audiovisual, print and simulations (models) keyed to the skills being mastered needed to be available in the process of implementing CBET.

4.5.8.3 Suitability of Workshops

The suitability of workshops used while training the visually impaired learners in preparing them for the job market was also assessed. It was found that a majority of the

graduates, 31 (60.8%) noted that the workshops were unsuitable. This was attributed to the fact that these workshops were ill-equipped and small.

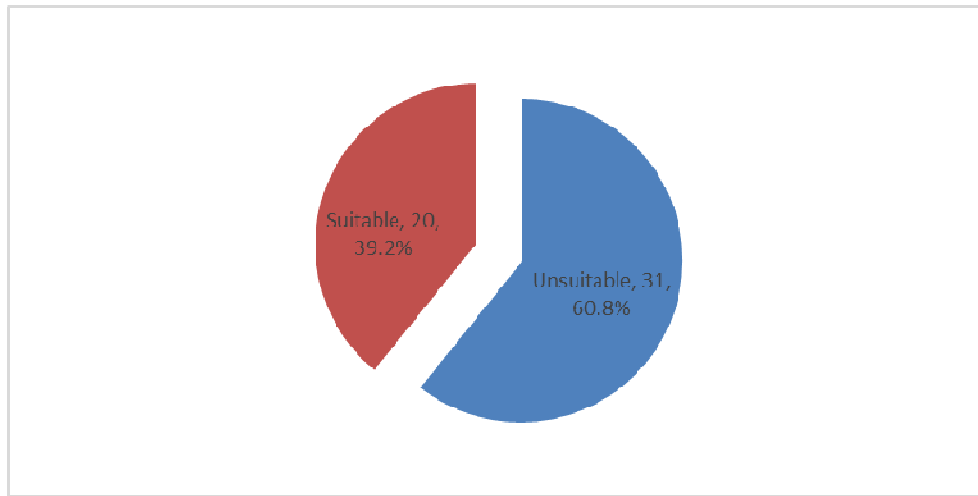


Figure 4.10: Suitability of Workshops

4.5.9 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.

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

The ministry of education official was asked to give their 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 noted 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 4.18: 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.

4.5.11 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 4.19 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 4.19: 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 |

4.5.12 Correlation Between Adaptability of Facilities applied in CBET Implementation and Acquisition of Employability Skills among VILs

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 4.20 showed that adaptability of facilities applied in CBET implementation to VILs' needs 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 4.20: Correlation Between Adaptability of Facilities applied in CBET Implementation and Acquisition of Employability Skills among VILs

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

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

4.5.13 Regression Analysis between Adaptability of Facilities applied in CBET Implementation and Acquisition of Employability Skills among VILs

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;

H₀₂: Adaptability of facilities of applied in CBET implementation does not significantly affect acquisition of employability skills among visually impaired learners in TVET institutions in Kenya.

4.5.13.1 Model Summary

The model summary results presented in Table 4.21 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 4.21: 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

4.5.13.2 Testing for Model Fitness

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 by observing the F statistic and its associated p value. The findings as outlined in Table 4.22 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 to VILs' needs was a good predictor of the acquisition of employability skills among visually impaired learners in TVET institutions in Kenya.

Table 4.22: Model Fitness Results

| 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 to VILs' needs

4.5.13.3 Regression Coefficient for Adaptability of Facilities applied in CBET Implementation

The regression output presented in Table 4.23 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 to VILs needs 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 4.23: 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

4.6 Trainers' Qualifications in CBET Implementation

The study further examined the extent to which trainers' qualifications in CBET implementation affected the acquisition of employable skills among visually impaired learners in TVET institutions in Kenya.

4.6.1 Descriptive Analysis on Trainers' Qualifications in CBET Implementation

The trainers were required to state their level of agreement/disagreement with a number of statements related to trainers' qualifications in CBET implementation in their institutes. The findings are summarized in Table 4.24. The findings showed that on average, the trainers had a neutral view regarding whether their institutions' had adequate trainers to implement the CBET curriculum as shown by ($M=3.354$, $SD=1.268$) and whether the trainers were well conversant with the CBET curriculum and its implementation strategies given ($M=3.477$, $SD=1.200$). The study also found that the trainers on average agreed that trainers were well trained on the implementation of the CBET curriculum ($M=3.83$, $SD=1.084$) and that the trainers in their institutions

attended seminars to update their knowledge and skills on the CBET curriculum implementation approaches as shown by ($M=3.692$, $SD=1.117$). Similarly, the trainers on average agreed that the seminars the trainers attended equipped them with the requisite knowledge and skills to implement the CBET curriculum given ($M=3.754$, $SD=1.031$) and that their years of experience as trainers had perfected their skills given ($M=4.446$, $SD=0.830$). The findings further showed that the trainers strongly agreed that that the trainers always strived to ensure that the learners met their learning requirements as per the CBET curriculum as supported by ($M=4.578$, $SD=0.498$). The study found that the highest mean of responses was associated with the statement “The trainers always strive to ensure that the learners meet their learning requirements as per the CBET curriculum” ($M=4.578$, $SD=0.498$) while the lowest mean was attached to the statement “The institution has adequate trainers to implement the CBET curriculum” ($M=3.354$, $SD=1.268$). This implied that CBET implementation was not effective due to inadequacy of trainers although they were well equipped with requisite knowledge and skills.

Olabiyi, Adigun and Adenle (2008) underscores that the implementation of CBET in TVET institutions depends on the quality of the trainers’ ability to effectively manipulate, operate, and use equipment, tools and materials to help learners understand the contents of the curriculum. Muneja (2015) also emphasizes that trainers need to possess several attributes for effective teaching among them being able to apply learning principles to teaching and imparting critical thinking attributes to the learners which supported their knowledge acquisition processes. Further, Adebambo (2017) asserted that TVET principals and trainers should have a working knowledge on what

CBET entailed in order to help learners prepare for the world of work. Capella (2011) on the other hand suggests that the trainers should go for refresher courses, in - service courses and capacity building workshops in order to be able to adequately prepare their learners.

Table 4.24: Descriptive Statistics on Trainers' Qualifications in CBET Implementation

| Trainers' Qualifications in CBET Implementation | Strongly Disagree | Disagree | Neutral | Agree | Strongly Agree | Mean | Std Dvn |
|--|--------------------------|-----------------|----------------|--------------|-----------------------|--------------|----------------|
| The institution has adequate trainers to implement the CBET curriculum. | 7.70% | 24.60% | 12.30% | 35.40% | 20.00% | 3.354 | 1.268 |
| Trainers are well trained on the implementation of the CBET curriculum. | 7.70% | 3.10% | 12.30% | 52.30% | 24.60% | 3.831 | 1.084 |
| The trainers are well conversant with the CBET curriculum and its implementation strategies. | 12.30% | 4.60% | 23.10% | 43.10% | 16.90% | 3.477 | 1.200 |
| The trainers attended seminars to update their knowledge and skills on the CBET curriculum implementation approaches. | 7.70% | 4.60% | 21.50% | 43.10% | 23.10% | 3.692 | 1.117 |
| The seminars the trainers attended equipped them with the requisite knowledge and skills to implement the CBET curriculum. | 4.60% | 6.20% | 21.50% | 44.60% | 23.10% | 3.754 | 1.031 |
| Their years of experience as a trainer have perfected their skills. | 3.10% | 0.00% | 3.10% | 36.90% | 56.90% | 4.446 | 0.83 |
| The trainers always strive to ensure that the learners meet their learning requirements as per the CBET curriculum. | 0.00% | 0.00% | 0.00% | 42.20% | 57.80% | 4.578 | 0.498 |
| Average | | | | | | 3.876 | 1.004 |

4.6.2 Trainers Opinions regarding their Qualification in CBET Implementation

The trainers were asked to indicate how their qualification impacted the acquisition of employability skills among visually impaired learners. The findings as outlined in

Table 4.25 revealed that 22 (33.8%) of the trainers noted that they were adequately qualified and competent to teach effectively due to great experience obtained in teaching the visually impaired which enabled them to impart the necessary skills to the learners. On the contrary, 27 (41.5%) of the trainers noted that they were not fully qualified to teach visually impaired learners using the CBET approach and hence found it difficult to train learners with the visual impairments on CBET. The findings revealed that 39 (60.0%) indicated that they needed refresher courses to teach the visually impaired learners on how to handle new technology and equipment used in the market place while 46 (70.8%) indicated that they needed more special training on technical areas and to improve their professional skills and knowledge so that they can competently prepare their learners.

The findings implied that without the necessary qualifications and competencies, the trainers were not able to efficiently train their learners and more particularly technical and specialized fields which could hinder their participation in implementing the CBET approach. This was more exacerbated where the learners had special needs. The findings also implied that a large number of trainers in TVET institutions still required intense capacity development to be able to implement the CBET approach especially those handling the visually impaired learners. This had an implication on the adequacy of skills imparted on the learners as well as the level of difficulties faced when training these learners more so when imparting core competencies.

The findings of this study supported that of Kitainge (2017) who found that in order to ensure quality teaching on CBET, a high degree of competence and a sense of

responsibility was required on the part of the trainers, emphasizing the necessity of both the pre-service and in-service training of the trainers. The findings also agreed with Muneja (2015) who observed that some trainers in learning institutions had limited understanding of the CBE. According to Jeanne (2014), trainers are mostly employed based solely on possession of subject knowledge after excelling in their university degree, even though lacking pedagogical and technical skills. Hence, the responsibility was bestowed to the employer to offer them short term on the job training on pedagogy which habitually did not yield the expected impact as trainers were already influenced by the long time knowledge that was based on the system in their prior education systems.

Table 4.25: Trainers Comments regarding their Qualification in CBET Implementation

| Comments regarding their Qualification in CBET Implementation | Frequenc y | Percent |
|---|-----------------------|----------------|
| Need refresher courses to teach visually impaired learners on how to handle new technology and equipment used in the market place | 39 | 60.0 |
| Need for more special training on technical areas and to improve skills and knowledge | 46 | 70.8 |
| Not fully qualified to teach visually impaired learners in regards to CBET | 27 | 41.5 |
| Adequately qualified and competent to teach effectively due to great experience in teaching the visually impaired | 22 | 33.8 |

4.6.3 Graduate’s Comments on Trainers’ Knowledge in Imparting Skills using the CBET Approach

The comments of the visually impaired graduates pertaining to how knowledgeable their trainers were in imparting skills to them using the CBET approach were also sought. From the responses given, it emerged that the graduates felt that their trainers

were quite knowledgeable in imparting skills to them using this approach though much needed to be done to enhance the capacity of these trainers in training the learners with visual impairments. According to one of the graduates,

“The trainers had adequate knowledge in using this approach but some did not know how to use braille. Trainers need to be trained on braille for more efficiency.”

Another graduate added that,

“They are quite knowledgeable but refresher courses and other capacity building programmes would be necessary to some especially for practical lessons.”

Another graduate concurred that,

“They are well conversant with the training though there is need for refresher courses at time.”

While noting the importance of the trainers to be more approachable, one of the graduates indicated that,

“Trainers were okay. Taught us important skills, teachers were approachable and ready to listen. However, problems would emerge when it came to consultations in much technical areas.”

Another graduate indicated that

“Some trainers were hot tempered so it affected training sometimes. Some did not know how to use braille, at least they should be knowledgeable of braille, there were no books, they gave notes so much.”

These findings underscore the need for constant capacity development for the trainers especially on specific areas that touch on particular needs of those with special needs such as the use of braille in this case as well as the cultivation of people skills among the trainers so that they handle the learners with care. This would minimize negative feelings among the learners based on the treatment they received from their trainers which if not handled could lead to resentment adversely affecting their learning. However, the MOE official during the interview indicated that the trainers in TVET

institutions were competent to teach CBET to visually impaired learners. They further added that the trainers often attended seminars/workshops once per year. The findings were in line with the study by Capella (2011) which suggested that the trainers in TVET institutions should go for refresher courses, in-service courses and capacity building workshops on a continuous basis.

4.6.4 Staffing of Departments with Trainers to Implement CBET

From the focus group discussion held with the HODs, it emerged that 6 (60.0%) of the HODs noted that their departments were not fully staffed. It was highlighted that even though the ratio of learner trainer was supposed to be 1:5 as per the SNE policy 2018, this was not the case in the institutes. The main explanation given was the increase of learners with special needs and multiple disabilities and the requirement of the visually impaired to have a trainer per learner at a given time. It was also pointed out that most of the trainers were trained in seminars which had not adequately equipped them.

The findings implied that the visually impaired learners in TVET institutions were not adequately catered for due to shortage of trainers and that the provisions of the Special Needs Education Policy of 2018 were not strictly observed in the training of the visually impaired in these institutions. The shortage of trainers or having trainers that were not fully competent compromised the quality of training which had an adverse impact on the acquisition of employable skills among the learners. This was aggravated where some trainers in some departments had acquired only internal certificates in Special Needs Education particularly for the visually impaired or relied on information given during seminars that took place once in a while since they could not sufficiently train learners. Part of these findings supported the sentiments by Jeanne (2014) that

short term on the job training on pedagogy habitually did not yield the expected impact as trainers were already influenced by the long-time knowledge that was based on the system in their prior education systems.

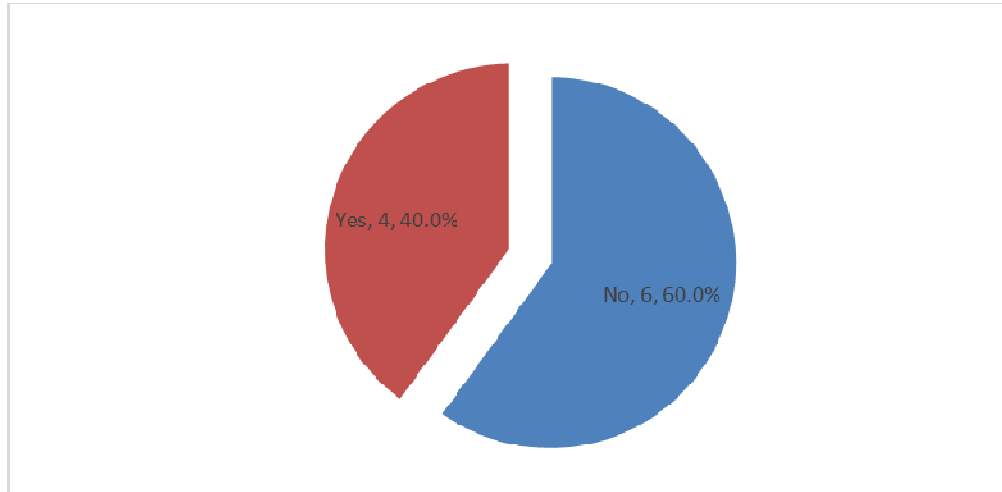


Figure 4.11: Level of Staffing of Departments with Trainers to Implement CBET

The HODs were also asked to assess the extent to which the trainers in their departments were equipped to implement the CBET mode of training. Half of the HODs, 5 (50.0%) indicated that their trainers were not adequately equipped. Some of the comments given were that;

“Some of the trainers are not trained. They require further training”. HOD 1

In support of this view, another HOD noted that,

“Our trainers are fairly equipped given the need for continuous adaptability of their training to the new curriculum demands which is an on-going process.”
HOD 2

It was also argued by one of the HODs that their trainers lacked the necessary resources needed to adequately enable them to implement the CBET approach. In explaining, they noted that,

“Some departments lack enough training materials and other resources needed especially for practical lessons which is a challenge for trainers.” HOD 6

The findings implied that some departments were more staffed with well-equipped trainers than others which resulted to disparities in the level of competency of graduates from different technical areas. On the other side, those who felt that their departments had trainers who were adequately equipped to implement the CBET approach indicated that every staff in their departments had acquired trainer of trainer courses and also trained in both special needs education (SNE) and technical skills.

4.6.5 Correlation Between Trainers’ Qualifications in CBET and Acquisition of Employability Skills among VILs

Correlation analysis was also undertaken to determine whether there was significant association between trainers’ qualifications in CBET and the acquisition of employability skills among visually impaired learners in TVET institutions in Kenya. The study found a strong, positive and significant correlation between trainers’ competencies in CBET and acquisition of employability skills among visually impaired learners in these institutions given ($r=0.742$, $p=0.000$, $p<0.05$). The findings implied that trainers’ qualifications in CBET and acquisition of employable skills among these learners changed in the same direction. The findings of this study agreed with that of Rapp and Rapp (2012) who found that trainers training was positively and significantly related to the level of support provided to deaf-blind learners indicating that trainers ought to be well trained and experienced which ensured that they were well informed on the needs of multisensory impairment (MSI) learners.

Table 4.26: Correlation Between Trainers’ Qualifications in CBET and Acquisition of Employability Skills among VILs

| | | Acquisition of Employability Skills among VILs | Trainers’ Competencies in CBET |
|--|---------------------|---|---------------------------------------|
| Acquisition of Employability Skills among VILs | Pearson Correlation | 1 | |
| | Sig. (2-tailed) | | |
| | N | 65 | |
| Trainers’ Competencies in CBET | Pearson Correlation | .742** | 1 |
| | Sig. (2-tailed) | 0.000 | |
| | N | 65 | 65 |

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

4.6.6 Regression Analysis between Trainers’ Qualifications in CBET and Acquisition of Employability Skills among VILs

Regression analysis was carried out to establish the relationship that existed between trainers’ qualifications in CBET and acquisition of employability skills among visually impaired learners in TVET institutions in Kenya. This enabled the researcher to quantify the effect of trainers’ competencies in CBET on the acquisition of employable skills among these learners. The following null hypothesis was tested;

H₀₃: Trainers’ qualifications in CBET do not significantly influence the acquisition of employable skills among visually impaired learners in TVET institutions in Kenya.

4.6.6.1 Model Summary

The model summary results presented in Table 4.27 showed that trainers’ qualifications in CBET explained a considerable proportion of the variation in the acquisition of employable skills among visually impaired learners in TVET institutions. This is supported by the R square of 0.551 which meant that 55.1% of the changes in the

acquisition of employable skills among visually impaired learners in these institutions was attributed to changes in trainers' competencies in CBET. The rest of the variations in the acquisition of employable skills among these learners, 44.9%, were attributed to other factors not considered in this model. The findings meant that trainers' qualification in CBET was a significant variable in explaining the acquisition of employable skills among these learners in TVET institutions in Kenya.

Table 4.27: Model Summary for Trainers' Competencies in CBET

| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate |
|--------------|----------|-----------------|--------------------------|-----------------------------------|
| 1 | .742a | 0.551 | 0.544 | 0.367854 |

a Predictors: (Constant), Trainers' qualifications in CBET

4.6.6.2 Testing for Model Fitness

The model fitness results presented in Table 4.28 showed that the model used to show the link between trainers' qualifications in CBET and acquisition of employable skills among the visually impaired learners in TVET institutions was significant given $F(1, 63) = 77.388, p = .000 < 0.05$. The findings also showed that trainers' competencies in CBET were a significant predictor of the acquisition of employable skills among the visually impaired learners in these institutions.

Table 4.28: Model Fitness Results for Trainers' Competencies in CBET

| Model | | Sum of Squares | Df | Mean Square | F | Sig. |
|--------------|------------|-----------------------|-----------|--------------------|----------|-------------|
| 1 | Regression | 10.472 | 1 | 10.472 | 77.388 | .000b |
| | Residual | 8.525 | 63 | 0.135 | | |
| | Total | 18.997 | 64 | | | |

a Dependent Variable: Acquisition of employable skills among visually impaired learners
b Predictors: (Constant), Trainers' qualifications in CBET

4.6.6.3 Regression Coefficient for Trainers' Competencies in CBET

The regression coefficient output displayed in Table 4.29 showed that the acquisition of employable skills among visually impaired learners in TVET institutions was positively and significantly affected by trainers' competencies in CBET given $\beta = 0.881$, $t = 8.797$, $p = .000$, $p < 0.05$. The findings implied that a unit increase in trainers' competencies in CBET would result to increased acquisition of employable skills among the visually impaired learners in TVET institutions by 0.881 units holding all other factors constant. These findings led to the rejection of the null hypothesis and an inference made that the acquisition of employable skills among the visually impaired learners in TVET institutions in Kenya was significantly affected by trainers' competencies in CBET.

The findings were in agreement with that of Khatib (2017) which showed that there was a marked difference in the quality and quantity of competencies acquired by visually impaired and blind learners due to the characteristics of the trainers. The study underlined the need for trainers to have special education competency-based services. The findings also agreed with that of Dasmani (2011) who found that TVET teachers ought to undergo regular industrial training which ensured that they did not lag behind

in new knowledge on technological advancement in industries. This would ensure quality of training which helped students to acquire employable skills. The findings further supported that of Udofia, et.al. (2012) which revealed that there was a significant relationship between teacher quality with the acquisition of employable skills by students in TVET institutions. The study explained that since most of the teachers were the students' role models, they needed to have adequate knowledge on labour markets needs which made it easier for the teachers to transfer the employable skills.

The following model was fitted;

Acquisition of Employability Skills among Visually Impaired Learners in TVET Institutions in Kenya = 0.526 + 0.881 Trainers' Qualifications in CBET

Table 4.29: Regression Coefficient for Trainers' Competencies in CBET

| Model | | Unstandardized Coefficients | | Standardized Coefficients | t | Sig. |
|-------|--------------------------------|-----------------------------|------------|---------------------------|-------|-------|
| | | B | Std. Error | Beta | | |
| 1 | (Constant) | 0.526 | 0.398 | | 1.321 | 0.191 |
| | Trainers' Competencies in CBET | 0.881 | 0.100 | 0.742 | 8.797 | 0.000 |

a Dependent Variable: Acquisition of employable skills among visually impaired learners

4.7 CBET and Employability Rate of VI Graduates

The study further sought to assess the role of occupational standards on the link between CBET and employability of visually impaired, role of industry linkages and acquisition of employable skills. The study further established how CBET curriculum influenced employability rates of VI graduates.

4.7.1 Occupational Standards

The study further sought to assess the role of occupational standards on the link between competence based education and training approach and employability of visually impaired graduates.

4.7.1.1 Descriptive Analysis on Occupational Standards

The trainers were presented with a number of statements on occupational standards were they stated their level of agreement/disagreement. The findings as outlined in Table 4.28 showed that on average, the trainers disagreed that the needs of visually impaired learners were always considered when developing occupational standards which guided the skills taught in TVET institutions as shown by ($M=2.431$, $SD=1.104$). The findings also showed that the trainers on average, disagreed that the adaptability of equipment and facilities in meeting the needs of visually impaired learners was considered when developing occupational standards which guided the skills taught in TVET institutions given ($M=2.462$, $SD=1.001$). The study further found that on average, the trainers disagreed that the framework for implementing occupational standards touching on the needs of visually impaired learners in TVET institutions was adequate as supported by ($M=1.969$, $SD=0.883$). The trainers on average disagreed that all the relevant stakeholders were actively involved when developing occupational standards for skills taught in TVET institutions ($M=2.000$, $SD=1.000$).

These findings confirmed that opinions of VI experts were not incorporated during the stage of needs assessment. This led to development of curriculum which was not adapted for VILs in TVET institutions. This explains why there was a missing link

between the employable skills taught to VIL in TVET institutions and the occupational standards. The findings also implied that there was a dire need for aligning competence based education with occupational standards to ensure entry- level competence especially in the context of persons who were visually impaired.

According to Mohammad, Schmidt, and Kolath (2015), occupational standards are crucial for training providers since they facilitate the definition of learning outcomes, review and update of existing training programmes besides the development of new ones in line with the labour market requirements and employer needs. They also guide the design of tailored training packages; assessment of the relevance and effectiveness of courses; provide clear goals for structured learning; and guide the setting up of training facilities. Kumsa (2018) asserts that occupational standards establish the benchmark of competence required in the workplace and needs to be developed through a consultation process that includes industry practitioners and any other key stakeholders.

Table 4.30: Occupational Standards

| Occupational Standards | Strongly Disagree | Disagree | Neutral | Agree | Strongly Agree | Mean | Std Dvn |
|--|--------------------------|-----------------|----------------|--------------|-----------------------|--------------|----------------|
| The needs of visually impaired learners are always considered when developing occupational standards which guide the skills taught in TVET institutions. | 21.50% | 40.00% | 12.30% | 26.20% | 0.00% | 2.431 | 1.104 |
| The adaptability of equipment and facilities in meeting the needs of visually impaired learners is considered when developing occupational standards which guide the skills taught in TVET institutions. | 10.80% | 58.50% | 4.60% | 26.20% | 0.00% | 2.462 | 1.001 |
| The framework for implementing occupational standards touching on the needs of visually impaired learners in TVET institutions is adequate. | 27.70% | 60.00% | 0.00% | 12.30% | 0.00% | 1.969 | 0.883 |
| All the relevant stakeholders are actively involved when developing occupational standards for skills taught in TVET institutions. | 35.40% | 38.50% | 21.50% | 0.00% | 4.60% | 2.000 | 1.000 |
| Average | | | | | | 2.216 | 0.997 |

4.7.1.2 MOL’s Involvement in Developing Occupational Standards for Skills taught in TVET Institutions

During an interview with an official from the Ministry of Labour, they pointed out that the ministry was in deed involved in developing the occupation standards for skills taught in TVET institutions. Nevertheless, they had a neutral opinion regarding whether the ministry considered the needs of visually impaired learners when developing these

occupational standards. The official disagreed that when developing the occupational standards that guide the skills taught in TVET institutions in Kenya, the state of facilities in the institution in relation to their adaptability to the needs of the visually impaired learners are considered. They underscored the role of occupational standards in minimizing the level of mismatch between skills taught in the institutions and the industry demands.

The aforementioned situation could be attributed to the failure to sample special TVET institutions during the piloting of the CBET curriculum as revealed by the MOE official. In addition, the industry managers during the interview pointed out that when developing the occupational standards (OS) with the MOL officials, the needs of PWDs in particular the visually impaired were not considered. This meant that the needs of the visually impaired learners were not identified, translating to an unfriendly curriculum. This was highlighted during the interviews with the graduates which revealed that for the graduates involved in leather products, they were only able to take part in some of the activities while the rest were done by their peers. For instance, the visually impaired were able to feel the quality of their work through touching. However, they were unable to make the design and patterns for products hence this was done for them. Low-vision learners were able to use manual machines. As for the totally blind, they were not able to use the machines. Hence, they were taught theoretically which reduced their employability. They were however able to do lasting, that is, giving shoe shape by inserting it in a wood last.

4.7.1.3 Mechanisms used by MOL to ensure VI Graduates are Employed without Discrimination

The MOL official during the interview indicated that the ministry had mechanisms to ensure that visually impaired graduates from TVET institutions were employed without discrimination as per the Constitution of Kenya 2010. They highlighted that during recruitment, they asked for the data of the applicant although they had no means of ascertaining whether they were the actual ones. They however noted that most of the times, none of the visually impaired persons applied.

4.7.1.4 Restrictiveness of Working Environment for Visually Impaired Employees

During the interview with the MOL official, they highlighted that as a ministry, they ensured that working environment for visually impaired employees was least restrictive as per the Special Needs Education Policy 2018. In relation to some of the precautions given for conducive working environments, the official pointed out that,

“We embrace the Special Needs Education Policy although the employers complain they may not have the expertise to provide everything required.”

4.8 Industry Linkages

The study also investigated the role of industry linkage in the link between competence based education and training approach and employability of visually impaired graduates from TVET institutions. The trainers responded to a number of statements on industrial linkages and the findings are presented in Table 4.31. The findings showed that on average, the trainers agreed that their institutes actively collaborated with various actors in diverse sectors to secure internships, attachments and part-timework opportunities for their visually impaired learners as shown by ($M=3.908$, $SD=0.879$).

The trainers also on average agreed that their institutes collaborated with various industry partners who offered in-kind support such as donation of equipment, student scholarships, teaching grants for the visually impaired learners given ($M=4.308$, $SD=0.660$).

On the other hand, the study found that on average, the trainers had a neutral view regarding whether there was continuous involvement of industry partners in the curriculum development process within TVET institutions so that the curriculum matched industry expectations given ($M=2.785$, $SD=1.409$) and whether their institutes supported the placement of staff by industry to the institutes as part-time trainers, visiting trainers, and executives in residence as supported by ($M=3.462$, $SD=1.263$). It was further established that the trainers held a neutral view pertaining to whether their institutes continually engaged accredited industry experts to provide career guidance and counselling to their visually impaired learners as shown by ($M=3.369$, $SD=1.282$).

Similarly, the trainers had a neutral opinion regarding whether their institutes prioritized partnerships with industries that used tools and equipment similar to those used when training the visually impaired learners within the institute given ($M=3.062$, $SD=1.088$). The highest mean of responses generally was attached to the statement “The institute collaborates with various industry partners who offer in-kind support such as donation of equipment, student scholarships, teaching grants for the visually impaired learners” ($M=4.308$, $SD=0.660$) while the lowest mean was associated with the statement “There is continuous involvement of industry partners in the curriculum development process within TVET institutions so that the curriculum matches industry

expectations” ($M=2.785$, $SD=1.409$). These findings indicated that there was a need to enhance linkages between the training institutions and industries. This was important since it would give room for curriculum review which meant that the changes taking place in industries would be incorporated with time. This calls for curriculum monitoring to be effectively done.

According to Kufaine and Chitera (2013), CBET approach helped learners to acquire skills that were necessary for the industry; hence the approach demanded participation of industry during training so that the competence experiences may help the students to put into practice the skills that were appropriate for the industry. Nyerere (2009) argued that mismatch of skills between the skills taught and those required by the labour market was as a result of limited industrial attachment of students and tutors together with weak linkage between the TVETs and industries.

Anindo (2016) underscores that industries should support TVET institutions by providing industrial attachment programmes and linkages for students in order to enhance the professional development of the learners and gaining of knowledge on new technologies and market skills needs. Wilson (2012) also emphasized the importance of work placement, work experiences, internships and industrial based initiatives noting that they were essential tools for developing the relevant skills and potentials required in the labour market for employment. Further, Jackson (2015) argued that employability was based on industrial value of graduates who had participated in work experiences programmes.

Crebert et al. (2004) noted that employability skills might develop effectively through industry-based learning, internships and communities of practice. In their study, Stiwne and Jungert (2010) demonstrated that a significant relationship between industry training and the acquisition of employability skills. This finding strengthened the need for stronger and more productive links between industry and training institutions in CBT programmes to give students opportunities to work with varied tasks, equipment, technology, resources, behaviours and personnel. According to the study, workplace learning was not only useful for authentic learning but also encouraged students to establish their own jobs after completing their study programmes.

Table 4.31: Descriptive Statistics on Industry Linkages

| Industry Linkages | Strongly Disagree | Disagree | Neutral | Agree | Strongly Agree | Mean | Std Dvn |
|--|--------------------------|-----------------|----------------|--------------|-----------------------|--------------|----------------|
| The institute actively collaborates with various actors in diverse sectors to secure internships, attachments and part-timework opportunities for their visually impaired learners. | 0.00% | 10.80% | 10.80% | 55.40% | 23.10% | 3.908 | 0.879 |
| The institute collaborates with various industry partners who offer in-kind support such as donation of equipment, student scholarships, teaching grants for the visually impaired learners. | 0.00% | 0.00% | 10.80% | 47.70% | 41.50% | 4.308 | 0.660 |
| There is continuous involvement of industry partners in the curriculum development process within TVET institutions so that the curriculum matches industry expectations. | 27.70% | 10.80% | 33.80% | 10.80% | 16.90% | 2.785 | 1.409 |
| The institute supports the placement of staff by industry to the institute as part-time professors, visiting professors, and executives in residence. | 10.80% | 0.00% | 55.40% | 0.00% | 33.80% | 3.462 | 1.263 |
| The institute continually engages accredited industry experts to provide career guidance and counselling to their visually impaired learners. | 12.30% | 10.80% | 26.20% | 29.20% | 21.50% | 3.369 | 1.282 |
| The institute prioritizes partnerships with industries that use tools and equipment similar to those used when training the visually impaired learners within the institute | 16.90% | 0.00% | 47.70% | 30.80% | 4.60% | 3.062 | 1.088 |
| Average | | | | | | 3.482 | 1.097 |

4.9 Employability Skills Acquired by Visually Impaired Learners

The CBET approach equips graduates with various skills that enable them to compete effectively within the job market. To this end, the study assessed the acquisition of employable skills among the visually impaired learners from these TVET institutions.

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 4.32. 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) ($M=4.169, SD=1.009$). This shows that more emphasis should be put on employable skills among VIL since they influence character at the workplace. This can be achieved by ensuring that the curriculum clearly identifies the knowledge and attitudes which the learners should achieve along acquisition of skills.

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.

Table 4.32: 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 |

4.10 Employability Rate of the Visually Impaired Graduates

The study further assessed the employability rates of the visually impaired graduates from TVET institutions in Kenya.

4.10.1 Follow up to ascertain the Number of VILs who Secure Jobs/Employment

The study investigated whether there was follow ups by the institutes to ascertain the number of visually impaired graduates who managed to secure employment. The majority of the trainers, 46 (70.8%), noted that in deed, they were such follow ups by their institutes. This was a crucial step towards evaluating the effectiveness of the CBET approach in enhancing the employability of the visually impaired and a basis for keeping a database which could be exploited in advocating for more employment opportunities for the visually impaired graduates. According to the International Labour Organization (2019), statistics on employment are crucial since they help in improving the analysis of employment problems and contribute towards formulating and evaluating short-term and long-term policies and measures designed to promote full, productive and freely chosen employment.

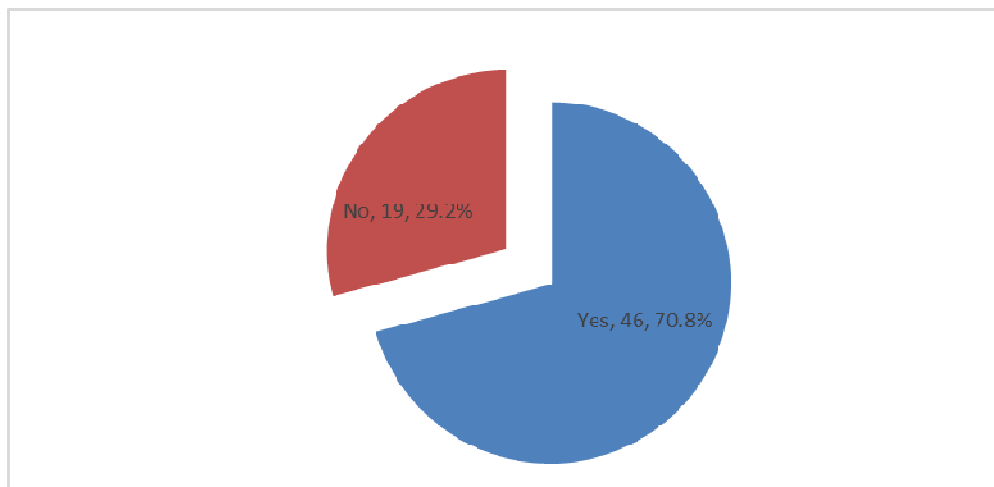


Figure 4.12: Follow up to ascertain the Number of VILs who Secure Jobs/Employment

4.10.2 Form of Employment of Visually Impaired Graduates

The responses given by the graduates during the interviews showed that a majority of the visually impaired graduates, 35 (68.6%) were self-employed while 16 (31.4%) were employed by the Government and in industries as outlined in Figure 4.13.

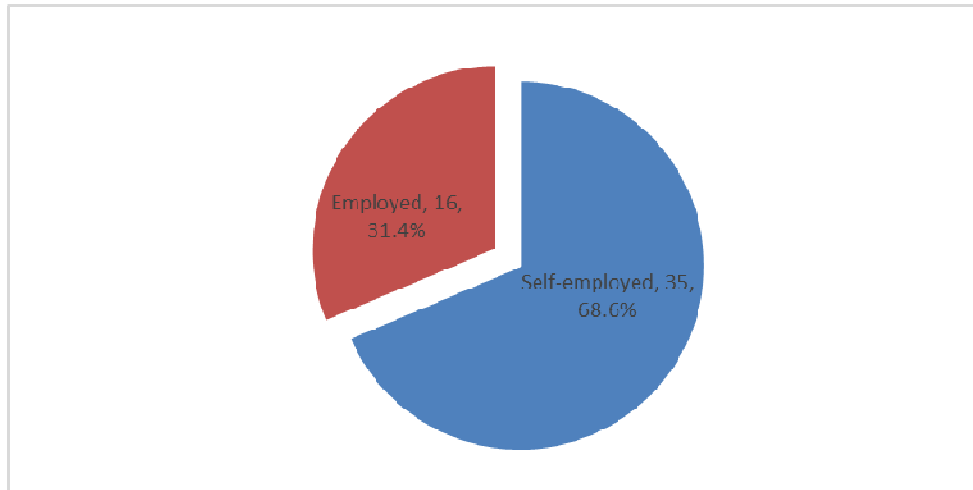


Figure 4.13: Form of Employment of Visually Impaired Graduates

Those in self-employment carried out activities such as agriculture, crafts and artisan work, barbers while those employed worked as contract labourers in massage therapy and also as general agricultural farm attendants among others. The findings could be attributed to the fact that the graduates had acquired the competencies to set up their own businesses. The high rate of self-employment could be also attributed to the technology shock in the job market which limited the absorption of the graduates in different markets which left the graduates with no other option than employ themselves. The findings could further be linked to issue of stigma where employers questioned the ability of the visually impaired graduates to perform in the marketplace. Furthermore,

since a large number of visually impaired graduates did not to meet the recommended CBET curriculum requirement on core competencies, their chances of getting jobs were constrained since they were not competent in some fields leaving them with no other alternative other than self-employment.

The study findings supported the views of the United National Development Program (UNDP) (2010) that a majority of the TVET graduates in Kenya were self-employed. The findings also supported that of Abban and Quarshie (2016) who found that after graduating, a majority of visually impaired learners had not been able to secure employment due to lack of competency and mismatch of the skills acquired and available jobs in the job market. The findings also agreed with that of Randolph (2014) which determined that disability status more so, visual impairment was a strong negative predictor of employment, particularly of being competitively employed. The study showed that visually impaired graduates with 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. The findings were also in agreement with the views of Pinquart and Pfeiffer (2014) that when CBET used in TVET institutions was unfriendly to the learners, it resulted to most of these graduates not being competent and hence unable to secure employment.

4.10.3 Number of Employed Visually Impaired Graduates

The trainers whose departments made follow ups to ascertain the number of visually impaired graduates who secured jobs were asked to indicate how many graduates had secured jobs in each form of employment. The breakdown is presented in Table 4.33.

The study found that in total, 140 graduates were self-employed, 73 were employed by the government while 22 of the visually impaired graduates were employed in private companies. This finding suggested that the employment rates of the visually impaired graduates were too low and much needed to be done to alter this scenario through greater advocacy.

The findings were in line with that of Abban and Quarshie (2016) who found that a majority of visually impaired graduates struggled to get employment after graduating. The study findings were in line with that of Ozawa and Yeo (2016) that the rate of employment was inversely proportional to the degree of disability and also the study by Ajaegbu (2012) which revealed that the rates of employment for individuals who are visually impaired have been low for decades. According to Kenya's 2016 National Survey on Persons with Disabilities, out of the visually impaired graduates from TVET institutions who had attained CBET, only 1% had worked for pay and 0.15% had worked on the family business. Over 50% had not worked.

Table 4.33: Number of Employed Visually Impaired Graduates

| Type of Employment | Number of visually impaired graduates | Frequency | Percent |
|-------------------------------|--|------------------|----------------|
| Self employed | 1 | 24 | 52.2 |
| | 2 | 5 | 10.9 |
| | 3 | 5 | 10.9 |
| | 4 | 7 | 15.2 |
| | 30 | 4 | 8.7 |
| | 100 | 1 | 2.1 |
| | Total | 46 | 100 |
| Employed by the government | 1 | 2 | 18.2 |
| | 3 | 2 | 18.2 |
| | 4 | 1 | 9.1 |
| | 6 | 2 | 18.2 |
| | 10 | 1 | 9.1 |
| | 20 | 2 | 18.2 |
| | 23 | 1 | 9.1 |
| | Total | 11 | 100 |
| Employed by private companies | 2 | 4 | 80.0 |
| | 20 | 1 | 5 |
| | Total | 5 | 100 |

During the interviews with the industry managers/employers, they were asked to indicate how many visually impaired persons had been employed in their institution/company. From the responses given, 3 (60%) of the managers stated that their companies had employed one graduate, one (20%) manager noted that their company had employed to 2 graduates while the other (20%) manager stated that more than 10 visually impaired graduates had been employed in the company. These findings implied that there were low absorption rates of the visually impaired graduates in private companies which could be attributed to the perception that these graduates cannot perform and low preparedness of most employers to fully meet the requirements of the Special Needs Education Policy 2018 where they were required to provide the

necessary assistive devices and tools to those with special needs besides ensuring their safety.

The findings could also be attributed to the level of competency of the graduates especially in the technical areas given that these industries were skill oriented. The findings agreed with that of Randolph (2014) which revealed that disability status more so, visual impairment was a strong negative predictor of employment, particularly of being competitively employed citing that VI graduates with 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.

4.10.4 Positioning of the Job Market to absorb the Visually Impaired Graduates

The HODs were asked to explain how the job market was positioned to absorb the visually impaired graduates from TVET institutions. All the 10 HODs unanimously noted that the job market was not adequately positioned to absorb these learners. In explaining, one of the HODs stated that,

“Some employers are not ready to absorb them because they fear the costs linked to the safety of the visually impaired who are vulnerable to accident.”

In support, another HOD stated that,

“The job market is not very accommodative and conducive for these graduates. There are some people who still think that the visually impaired cannot perform like other abled persons. Hence, most of them are self-employed. Only a few secure other jobs.”

Similar sentiments were reinstated by one of the members of the civil society groups who said;

“Many employers overlook the 5% policy on employment of PWDs during recruitment; this denies VI graduates their rights to employment and greatly explains why the rates of employment for this group are still too low”

More awareness and sensitization of employers regarding the need for absorbing the visually impaired graduates was called for by these HODs. These findings suggested that stigma and employers’ reluctance to observe the requirements or implement the policies on the disability mainstreaming were still a major obstacle to the employment of the visually impaired graduates which called for heightened advocacy and awareness creation especially among employers.

More light was shed on this by majority of the graduates who confirmed that they sought employment in industries which advertised jobs and could continuously not secure any. Most resorted to self-employment. These findings show that employers have negative attitudes towards employment of VI graduates. This is therefore a contributing factor towards low employment rate among VI graduates who have acquired skills through CBET. This contradicts PWDs Act (2013) which stipulates that PWDs have a right to employment. More awareness and sensitization of employers regarding the need of absorbing the visually impaired graduates in work place is necessary.

The findings of this study supported that of Randolph (2014) who determined that disability status more so, visual impairment was a strong negative predictor of employment, particularly of being competitively employed. The findings also agreed with that of Ozawa and Yeo (2016) which revealed that the rate of employment was inversely proportional to the degree of disability. The study findings were incongruence

with that of Baldwin and Schumacher (2012) who found that the chances of obtaining a job were negatively correlated to disability status. The findings were further in line with Ajaegbu (2012) who underscored that many graduates who are visually impaired and have attained CBET strained to obtain competitive employment and good wages.

4.10.5 Managers' Perceptions of the Capacity of VI Graduates to Work Effectively

The managers were asked to state whether the visually impaired graduates from TVET institutions had the requisite knowledge and skills to work effectively in their company/institution. It was found that all the 5 managers noted that in deed, these graduates were equipped with relevant knowledge and skills to work effectively. In explaining this, the managers highlighted that the graduates performed well in the tasks given and with minimal supervision. One of the managers stated that,

“They have been working with less supervision and fruitfully in the duties assigned.”

Another manager added that,

“When they are assigned tasks in areas of their specialization, they perform well.”

These findings highlight the irony that even though the employers found the visual impaired graduates to be competent and dedicated in their job assignments, this did not translate to enhanced absorption of these graduates in their companies. Youths who are visually impaired may face a number of barriers in their efforts to make the transition from school to employment and community life since employers are often hesitant to hire people who are visually impaired (Crudden et al., 1998). According to Wolffe and Candela (2002), employers are concerned about the perceived expenses that are associated with workplace accommodations, delays that workers who are visually

impaired may experience in reaching full productivity, and potential difficulties in terminating a worker who is disabled whose performance is not acceptable. Wolffe and Candela found that employers who have had some experience with hiring individuals with disabilities were far more likely to recruit persons with disabilities in the future.

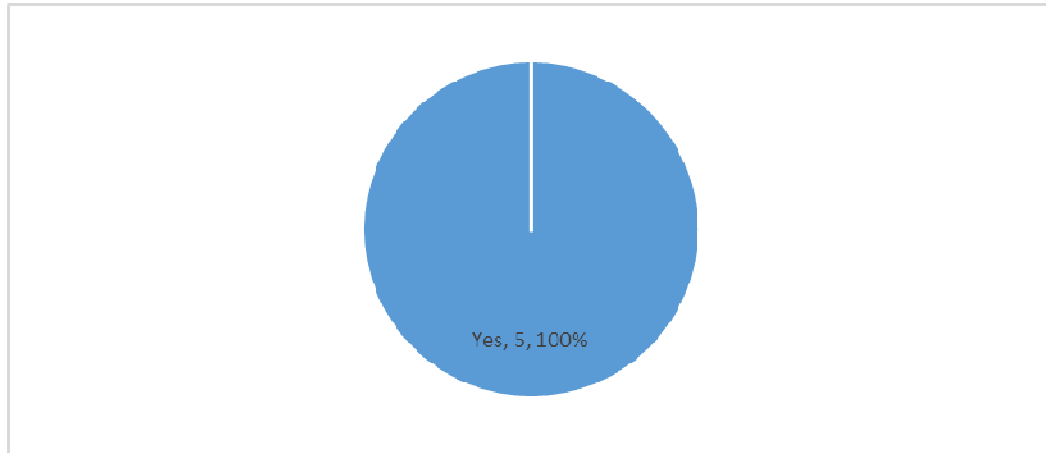


Figure 4.14: Managers' Perceptions of the Capacity of VI Graduates to Work Effectively

The managers/employers were asked to indicate the extent to which the training strategies at TVET institutions adequately prepared the visually impaired graduates for the job market. All the managers noted that the training strategies adequately prepared these graduates to a large extent though much was to be done to enhance their efficiency. One of the managers stated that,

“They prepare the students adequately and many are therefore able to perform their duties well.”

While noting the need for considering technological dynamics in implementing these strategies, one of the managers highlighted that,

“They are adequate for middle jobs, however, they can be more efficient if technological aspects are factored in.”

The findings underlined the importance of continuous improvement of the training strategies particularly CBET to integrate the needs of persons with disabilities in

particular the visually impaired so that these learners are prepared for all kinds of jobs even the most competitive opportunities so that their employment opportunities are not limited or that these learners are not confined to just a few jobs some of which are not fulfilling after graduating.

During the interviews with the industry managers/employers, they were asked whether they thought based on their interactions with the visually impaired graduates from TVET institutions that there was need to modify the training approaches in these institutions. 3 of the managers felt that modification of training approaches was inevitable. In explaining, one of the managers noted that,

“Modification is inevitable to broaden their abilities to carry out their task and compete adequately and fairly with others in the job market.”

While emphasizing the need to modify these approaches to enable the visually impaired graduates to compete in the job market, another manager stated that,

“Modification is good because it will make them compete with others in the market.”

One of the managers who thought that modification was unnecessary indicated that,

“I do not think so. There is no need since the students perform their duties above the laid down standards.”

The findings implied that the review and continuous improvement of strategies used in training the visually impaired in TVET institutions was inevitable if their graduates are to be positioned for competitive opportunities in different industries.

4.10.6 Descriptive Analysis on Employment Rates of Visually Impaired Learners

The trainers were further asked to state their agreement/disagreement with a number of statements on the employment rates of the visually impaired graduates from the

institutions. The findings as outlined in Table 4.34 revealed that on average, the trainers had a neutral view regarding whether the number of visually impaired graduates from their institutions that had secured employment had increased significantly since the adoption of CBET approach given ($M=2.862$, $SD=1.530$) and whether the ability of visually impaired graduates to take up competitive jobs without discrimination had increased significantly since the adoption of CBET approach as supported by ($M=2.892$, $SD=1.562$). The study also found that on average, the trainers had a neutral view regarding whether the ability of visually impaired graduates to secure diverse jobs/forms of employment had increased significantly since the adoption of CBET approach as shown by ($M=2.923$, $SD=1.429$). Similarly, the trainers had a neutral view regarding whether the visually impaired graduates from their institutions were highly satisfied with their current sources of income since the adoption of CBET approach given ($M=2.585$, $SD=1.184$).

Table 4.34: Descriptive Statistics on Employment Rates of Visually Impaired Learners

| Employment Rates of Visually Impaired Graduates | Strongly Disagree | Disagree | Neutral | Agree | Strongly Agree | Mean | Std Dvn |
|--|--------------------------|-----------------|----------------|--------------|-----------------------|--------------|----------------|
| The number of visually impaired graduates from this institution that have secured employment has increased significantly since the adoption of CBET approach. | 29.20% | 16.90% | 10.80% | 24.60% | 18.50% | 2.862 | 1.53 |
| The ability of visually impaired graduates to take up competitive jobs without discrimination has increased significantly since the adoption of CBET approach. | 29.20% | 16.90% | 10.80% | 21.50% | 21.50% | 2.892 | 1.562 |
| The ability of visually impaired graduates to secure diverse jobs/forms of employment has increased significantly since the adoption of CBET approach. | 18.50% | 27.70% | 18.50% | 13.80% | 21.50% | 2.923 | 1.429 |
| Visually impaired graduates from this institution are highly satisfied with their current sources of income since the adoption of CBET approach. | 18.50% | 38.50% | 13.80% | 24.60% | 4.60% | 2.585 | 1.184 |
| Average | | | | | | 2.585 | 1.184 |

The above findings a picture of low employability rates of visually impaired graduates even after going through CBET programmes. The study agreed with the argument by Sanguinetti (2004) that the acquisition of employability skills did not guarantee

employment. The study revealed that people with suitable employability skills were not always employed due primarily to factors such as a lack of jobs or employment opportunities, age and experience.

Randolph (2014) found that visually impaired graduates with 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. Ozawa and Yeo (2016) while comparing the employment outcomes of graduates with CBET found that disability status determined their employment. Baldwin and Schumacher (2012) also found that not only were the chances of obtaining a job and earnings negatively correlated to disability status, but also job mobility. According to the study, workers with disabilities and more so, VI graduates with CBET were more likely to experience involuntary job changes than non-disabled workers. Ajaegbu (2012) also found that many graduates who were visually impaired and had attained CBET had strained to obtain competitive employment and good wages.

4.10.7 Challenges faced by the VI Graduates in the Employment Industry

During the interviews with the graduates, they were asked to indicate the challenges they were facing in the employment industry as visually impaired persons in relation to market for their products and also their workplaces. The major challenges highlighted by the graduates in regards to market for their products were long distances to markets and communication difficulties when marketing their products to their customers and also tough business times and seasons. Stiff competition majorly from sighted counterparts was also a major challenge. One the graduates alluded that,

“Clients are available even though communication is a bit difficult. It takes time for them to understand me.”

Another graduate added that,

“Markets are there though very far away from workplace. Mobility is quite a challenge.”

Most of the self-employed graduates pointed out that customers requested for items/services which they were not conversant with, a concern which could be linked to insufficient training and market/technological changes. The main challenges highlighted in relation to the workplaces of the graduates were high competition for positions, challenge in fitting in the workplace in the initial stages, poor remuneration leading to low morale to work, high rents charged on business stalls and also need for sighted guide at times.

The findings supported the discovery by that Randolph (2014) monthly earnings of both blind and persons with low vision were lower than those of people with no disability and that visually impaired graduates who had gone through CBET found the machines available in most industrial companies sophisticated where a majority of these graduates struggled to cope up with such machines. The study findings were also in line with Baldwin and Schumacher (2012) who found that earnings were negatively correlated to disability status. The study also agreed with the findings of Ajaegbu (2012) that graduates who were visually impaired and had attained CBET strained to obtain competitive employment and good wages.

Another challenge which was highlighted and emphasized by the self-employed graduates was lack of machines which were too expensive. This was confirmed by one of the self-employed graduates who said;

“Since I don’t have the relevant modern machines I produce cheap commodities even though I have the skills to make better products.”

This is evidenced by visual images taken in his work place.



Image 4.9: Leather Technology Machines in the Industry



Image 4.10: Low Quality Shoes made using Cheap Machines



Image 4.11: High quality shoes made in the industry using advanced expensive leather technology machines which VI graduates cannot afford

Moreover, during the FGDs, the 10 HODs noted that stigma against the visually impaired graduates was a challenge to their employability hence most of these graduates had resulted to self-employment. On this matter, one of the HODs said;

‘There is always a stigma due to societal perspectives. The public needs to be made aware of abilities of persons living with disabilities.

In support, another HOD recommended;

“Let them be given equal chances to prove themselves in their areas of specialization since they have been trained on how to take care of themselves

in terms of safety. They can perform in the specific areas they are competent effectively.”

In view of the above findings, it is evident that VI graduates experience several challenges related to their employment hence ways of minimizing the challenges should be sought. The graduates were asked to state whether they were satisfied with their current source of income. As shown in Figure 4.15, a majority of these visually impaired graduates, 39 (76.5%), were not satisfied with their current source of income. According to Randolph (2014), monthly earnings of persons with blindness and low vision were lower than those of people with no disability. Ajaegbu (2012) also found that many graduates who were visually impaired and had attained CBET struggled to obtain competitive employment and good wages.

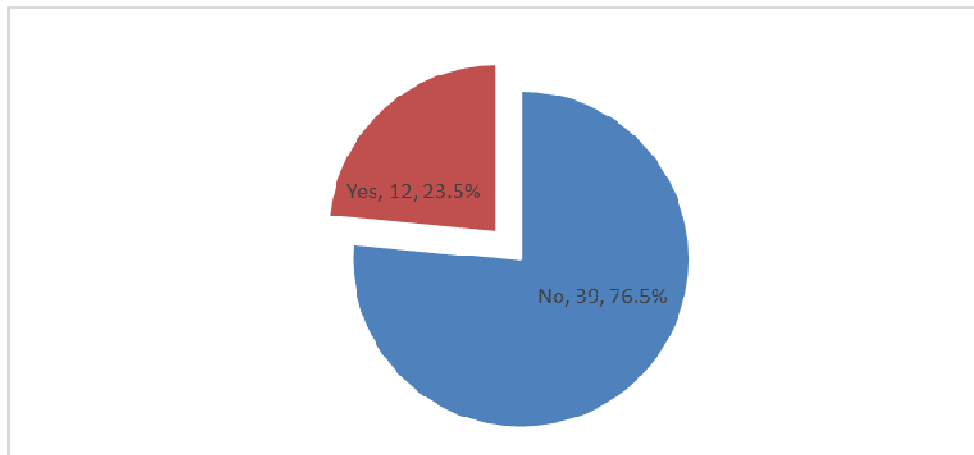


Figure 4.15: Satisfaction with Current Source of Income

The above result was associated to among other factors high business costs which reduced the amounts of savings, low and late salary payments, lack of capacity to expand business and perception that some services such as massage were a luxury and other surrounding myths. Discrimination and market forces were also attributed to the

high rates of dissatisfaction with the current income source among these graduates.

One of the graduates argued that,

“Being in a local set up, the proceeds pay rent, electricity and the left over is only for subsistence and medication hence no saving. Ultimately, employing someone else will be a challenge.”

Another graduate decried that,

“Access to work place is okay but rent is so high and the rooms are not so conducive.”

In explaining the challenges related to offering massage services, one of the graduates pointed out that,

“I’m not satisfied with current source income; customers take massage as a luxury. Not good in times of changing economic times.”

In support of this view, another graduate stated that,

“At many times, massage services are lowly priced as some costumers despise massage, relate it with immorality.”

Another graduate in explaining the seasonality of business stated that,

“My income is dependent on season. I earn up to 10000 per month in cold season. Demand is high for children. However, earnings go as low as 100 per day when it is out of season.”

Another graduate complained that,

“Salary is a bit low. I would wish for an increase by about 15%.”

The comments of the civil society official on the conditions of the working environment for the visually impaired employees; both physically and socially were sought. According to them, most of the working environments were not friendly for the visually impaired persons and much had to be done to make them favourable.

“Not friendly due to the stigma they face. Some are not provided with assistive devices. Some of the visually impaired persons seek to much attention and most employers do not stick to entitlements to provide the required tools and materials.”

In highlighting the need for employers to take in to account the needs of the visually impaired, the official noted that,

“Manufacturers ought to calibrate items to braille.”

The official was also asked to give their opinion on the level of employment opportunities for the visually impaired graduates with relevant skills required in job market in the past five years. They noted that there was no significant increase contrary to what is provided for in the constitution even though the government insisted that an increase of about 3.5% had been witnessed.

When asked whether the special needs policy of 2018 had improved the inclusivity of the visually impaired in the society, the official commended that,

“The policy is still being disseminated and the implementation has not taken off as expected. There is lack of special needs technical education institutions. I propose the establishment of one for training TVET trainers on special needs training.”

The findings agreed with that of a study by O'Donnell (2014) which showed that visually impaired persons faced workplace barriers which were both physical and structural in nature. According to the study, the physical ones consisted of complex office floor plans or an inaccessible entrance with steps to an office building, factory and that requesting accommodations to these and other accessibility problems, often brought up opportunities for companies to allow or deny such requests based on undue hardship concerns. The findings also agreed with that of a study by Antonelli, Steverson, and O'Mally (2018) found that among the top barriers faced by the visually impaired in their working environments were employer discrimination or negative attitudes and lack of accommodations or assistive technology. According to the study,

these persons struggled in getting employers to realize that despite their visual impairment, they were capable of doing the job.

4.10.8 Participation of the VI Graduates on the Job Market

Despite the challenges highlighted in the previous subsection, the study found that the visually impaired graduates had acquired several skills among them leather goods production, foot wear production, *shiatsu* therapy and massaging, weaving, hair cutting, carpentry, sand papering and painting among others. According to the graduates, the skills acquired were relevant and enabled them to participate in the job market. Some of the responses given by the graduates are as outlined below;

“I have acquired several skills in shiatsu therapy which enables me to perform my duties.” Graduate W

“I have been taught many things like weaving and knitting baby and adult products.” Graduate S

“I have acquired skills in massage. Knowledge and skills acquired has helped me to be self-employed and be self-reliant. The curriculum adequately prepared me for this job.” Graduate K

“I am able to take part in leather goods production, tannery and foot wear production.” Graduate Z

From the interviews, it was established that for the graduates involved in leather products, they were only able to take part in some of the activities while the rest were done by their peers. For instance, the visually impaired were able to feel the quality of their work through touching. However, they were unable to make the design and patterns for products hence this was done for them. Low-vision learners were able to use manual machines. As for the totally blind, they were not able to use the machines. Hence, they were taught theoretically which reduced their employability opportunities. They were however able to do lasting, that is, giving shoe shape by

inserting it in a wood last. This shows that despite the use of an adapted CBET curriculum, the VI graduates were able to acquire helpful skills which enabled them to get minimal employment. This has implications that if VIL needs are well catered for during training, chances of getting employed are high.

4.10.9 Quality of Products/Services Produced by the Visually Impaired Graduates

The study sought to assess the quality of products made by the VI graduates and also the services they offer. The findings revealed that most of their services/products were of good quality. The managers did not have any major concerns about services/products offered/made by their VI employees. In fact, managers remarked that the VI employees were keen on their duties and were generally easy to assign tasks. Fellow sighted employees were found to be quite helpful whenever their VI counterparts required their assistance. Products/services offered by majority of the self-employed VI graduates were quite good. This was confirmed through observations of work records where it was found that many customers repeatedly sought massage services from spas run by VI graduates. Similarly, a customer was heard saying the following sentiments in one of the leather goods workshops;

“We seek services here from these men yet one is totally visually impaired, you can’t believe me they make the best shoes in this town and they are both welcoming and courteous.”

Further, quality knitted articles were found in a knitting shop of one of the VI graduates. The visual images below are an evidence of the same.



Image 4.7: Knitted articles in one of the VI graduates shop

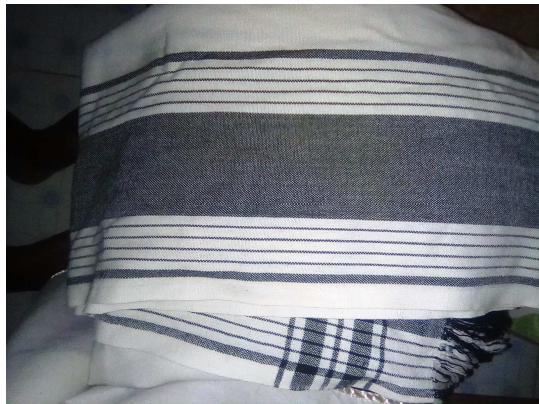


Image 4.8: High quality loomed articles in one of the VI graduates shop.

4.10.10 Suggestions for Improvement regarding Linkage between CBET Approach and Employment

The graduates were asked to suggest areas for improvement in regards to the linkage between CBET approach and employment. Suggestions given included the assessment and entrenchment of employment needs in the CBET curriculum taking in to consideration the visually impaired, allocation of more time, more courses as well as refresher courses, continuous upgrading of courses stipulated in the curriculum and also involvement of industry stakeholders in developing the curriculum. One of the graduates noted that,

“There is need to determine the employment needs and entrench them in the CBET curriculum and involve those with visual loss.”

In support, another graduate stated that,

“Employment needs should be included in CBET curriculum to accommodate the visually impaired. Learners should be able to identify what they need to work on early enough in order to find and keep meaningful employment.”

Some of the suggestions on how to improve the implementation of the CBET approach given by the HODs included the involvement of stakeholders from different industries in developing the CBET curriculum, provision of more capacity building to the trainers to handle learners with visual impairments, emphasis on practical oriented teaching methods, provision of tools and machinery in workshops that matched the ones used in the industry as well as the provision of enhanced training facilities. Increased staffing, more linkage with the industry and adapting the curriculum and facilities to the learners’ needs were also suggested.

4.10.11 Adequacy of Structures in Companies/Institutions in promoting a good Working Environment for the VI Persons

The managers were asked whether they felt that the structures in their companies/institutions were adequate to promote a good working environment for the persons with visual impairment. All the managers indicated that these structures were not sufficiently adequate and hence there was need for improvement. One of the managers pointed out that,

“A little adjustment should be made and provision of assistive devices is necessary alongside giving personal reading glasses.”

In support of the above view, another manager noted that,

“Not really but we are glad they can manage.”

Another manager argued that,

“Yes, but there is always room for improvement.”

These findings implied that most of the graduates who had been absorbed in different industries were subjected to working environment that were not friendly and were forced to cope in such conditions which was against the laid down policies and occupational standards for protection of persons with special needs. The findings also painted a clear picture of the parties in different industries towards disability mainstreaming in their companies which was wanting. The findings agreed with that of Katarina et al. (2018) that in order persons with visual impairments to work independently, it is of great importance that the work environment is designed towards inclusion for all both in relation to the necessary adapted technology and the physical environment. Heckl et al. (2008) also highlight that it is crucial for employers to offer special accommodation related to specific disabilities such as providing wheelchair access and adapting office equipment to physical disabilities, assistive technology to sensory disabilities, work assistance to persons with intellectual/mental or severe physical disabilities besides taking measures related to working arrangements, training and awareness raising in order to support the integration of all persons with disabilities within the workplace.

4.10.12 More Strategies to Promote Employability of the Visually Impaired Graduates

During the focused group discussion with the HODs, a number of strategies that could be employed to promote the employability of the visually impaired graduates were suggested. These included the adaptation of the curriculum to suit the needs of the

visually impaired learners, creating awareness and heightened advocacy for more employment opportunities for these graduates, holding exhibitions of items made by the visually impaired graduates in order to encourage self-employment among the graduates as well as sensitizing the public particularly employers that these persons can perform certain duties efficiently just like other graduates who are not impaired. Allocation of more time for industrial attachment, involvement of the industry partners in the training of these learners, capacity building to the lectures and follow ups by trainers even after the graduates have left the institutions were also suggested.

4.10.13 Graduates' Suggestions on CBET and Employability of VI Graduates

The graduates' suggestions regarding the implementation of CBET towards enhancing the employability of visually impaired graduates are outlined in Table 4.35. The study found that 13 (29.4%) of the graduates suggested that external examination/professional body should be mandated to give exams for professional examinations especially among the visually impaired, 46 (90.2%) suggested the provision of better training facilities tools and equipment to enhance improved ways of getting skills while 41 (80.4%) of the graduates suggested that the institutes should be fitted with modern facilities similar to the ones found in advanced work areas. The study also found that 34 (66.9%) of the graduates suggested that demonstrative training should be given priority as the only best mode of imparting skills to learners, 49 (96.1%) of the graduates noted that the curriculum needed to be adapted to accommodate the visually impaired persons while 27 (52.9%) of the graduates suggested that there was need for dedicating more time to attachments.

Table 4.35: Graduates' Suggestions on CBET and Employability of VI Graduates

| Improvements in CBET Curriculum | Frequency | Percent |
|---|------------------|----------------|
| External examination/professional body to give exams for professional examinations especially among the visually impaired | 13 | 29.4 |
| Providing better training facilities tools and equipment shall lead to improved ways of getting skills | 46 | 90.2 |
| Schools should be fitted with modern facilities as the ones found in advanced work areas | 41 | 80.4 |
| Demonstrative training should be given priority as the only best mode of imparting skills | 34 | 66.7 |
| The curriculum needs adaptation to accommodate the visually impaired persons | 49 | 96.1 |
| Dedicate more time to attachments | 27 | 52.9 |

4.10.14 Role of the Civil Society Groups in the Employment of the VI Graduates

The official from the civil society was to indicate the role they played as far as employment of persons with disabilities specifically the visually impaired was concerned. They highlighted that they did advocacy against stigmatization of the visually impaired.

“We advocate for removal of stigma against the visually impaired and provide a database for those with skills. We work closely with placement officers at the Kenya Society for the Blind and the National Council for Persons with Disabilities to secure more job opportunities for these graduates. However, most of the graduates have been employed mostly by Safaricom.”

These findings underscore the critical role played by the civil society in improving employment rights of the visually impaired persons by exerting pressure regarding the employment status of the visually impaired people. The findings supported an ILO (1982) report which highlighted the advocacy role of pressure groups indicating that pressure groups have enabled changes in attitudes towards employing the visually impaired. The report also showed that trade unions and the general public were gradually realizing the abilities of the visually impaired. The findings also supported that of Bellarmy and Horner (1987) which indicated that some of the roles of civil

organizations were conducting research into potential new areas of employment and placement of the visually impaired in industrial, commercial, administrative, technical and professional occupations. Heward and Orlansky (1992) indicated that in the United States, the establishment of the National Industries for the Blind led to the employment of more than five thousand blind people.

4.10.15 Correlation Analysis between CBET and Employability Rate of VI Graduates

Correlation analysis was undertaken to determine whether there was significant association between competence based education and training specifically the applicability of CBET curriculum, adaptability of facilities applied in CBET implementation and trainers' qualifications in CBET and the employability rate of the visually impaired graduates from TVET institutions in Kenya.

The results outlined in Table 4.36 showed that the applicability of CBET Curriculum was strongly, positively and significantly correlated with the employability rate of the visually impaired graduates from TVET institutions in Kenya given ($r=0.643$, $p=0.000$, $p<0.05$). The findings also showed that the employability rate of visually impaired graduates from these institutions was positively and significantly correlated with the adaptability of facilities applied in CBET implementation and that this correlation was strong as supported by ($r=0.686$, $p=0.000$, $p<0.05$). The study further established that the correlation between trainers' competencies in CBET and employability rate of the visually impaired graduates in Kenya was strong, positive and significant as shown by ($r=0.609$, $p=0.000$, $p<0.05$). These findings implied that

there was a positive strong and significant association between competence based education and training and the employability rate of the visually impaired graduates from TVET institutions in Kenya.

These findings support that of a study by Ayonmike, Chijioke, and Okeke (2014) which showed that by being learner focused, CBET as a training approach in TVET institutions allowed learners to acquired competencies required in performing their jobs hence tackling the problem of lack of employable skills among graduates which resulted to reduced unemployment.

Table 4.36: Correlation Analysis between CBET and Employability Rate of VI Graduates

| | | Employability Rate of Visually Impaired Graduates | Applicability of CBET Curriculum | Adaptability of Facilities applied in CBET Implementation | Trainers' Qualifications in CBET |
|---|---|--|---|--|---|
| Employability Rate of Visually Impaired Graduates | Pearson Correlation Sig. (2-tailed) | 1 | | | |
| | N | 65 | | | |
| Applicability of CBET Curriculum | Pearson Correlation Sig. (2-tailed) | .643** | 1 | | |
| | N | 65 | 65 | | |
| Adaptability of Facilities applied in CBET Implementatio n | Pearson Correlation Sig. (2-tailed) | .737** | .659** | 1 | |
| | N | 65 | 65 | 65 | |
| Trainers' Qualifications in CBET | Pearson Correlation Sig. (2-tailed) | .609** | .435** | .605** | 1 |
| | N | 65 | 65 | 65 | 65 |

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

4.10.16 Regression Analysis between Correlation Analysis between CBET and Employability Rate of VI Graduates

Regression analysis was further conducted to establish effect of the various aspects of CBET under study on the employability rate of visually impaired graduates from TVET institutions in Kenya. The main aim of this analysis was to quantify the effect of the applicability of CBET curriculum, adaptability of facilities applied in CBET implementation and trainers' qualifications in CBET on the employability rate of these graduates besides determining whether the effect was significant. To this end, the following research hypothesis was tested:

Ho4: Competence based education and training does not significantly impact on employability rate of the visually impaired graduates in Kenya.

4.10.16.1 Model Summary

The model summary results presented in Table 4.37 showed that applicability of CBET curriculum, adaptability of facilities applied in CBET implementation and trainers' qualifications in CBET explained a significant variance in the employability rate of the visually impaired graduates from TVET institutions in Kenya. The R square of 0.623 implied that 62.3% of the changes in the employability rate of visually impaired graduates from TVET institutions in Kenya were attributed to changes in the applicability of CBET curriculum, adaptability of facilities applied in CBET implementation and trainers' qualifications in CBET. The rest of the changes, 37.7%, were attributed to variables not included in the model.

Table 4.37: Model Summary

| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate |
|-------|-------|----------|-------------------|----------------------------|
| 1 | .789a | 0.623 | 0.605 | 0.86662 |

a Predictors: (Constant), Trainers' qualifications in CBET, applicability of CBET curriculum, Adaptability of facilities applied in CBET implementation

4.10.16.2 Testing for Model Fitness

The fitness of the model used to show the link between applicability of CBET curriculum, adaptability of facilities applied in CBET implementation and trainers' qualifications in CBET and employability rate of visually impaired graduates from TVET institutions in Kenya was also assessed by evaluating the F statistic and its

associated p value. The findings revealed that the model used to link these variables was significant given $F(3, 61) = 33.608$, $p = .000 < 0.05$ and that the predictor variables in his model were satisfactory variables that explained the employability rate of the visually impaired graduates.

Table 4.38: Model Fitness Results

| Model | Sum of Squares | df | Mean Square | F | Sig. |
|--------------|-----------------------|-----------|--------------------|----------|-------------|
| 1 Regression | 75.722 | 3 | 25.241 | 33.608 | .000b |
| Residual | 45.813 | 61 | 0.751 | | |
| Total | 121.535 | 64 | | | |

a Dependent Variable: Employability Rate
b Predictors: (Constant), Trainers' qualifications in CBET, Applicability of CBET curriculum, Adaptability of facilities applied in CBET implementation

4.10.16.3 Regression Coefficients

The regression coefficients are presented in Table 4.39. The study found that the applicability of CBET curriculum had a positive and significant effect on the employability rate of the visually impaired graduates from TVET institutions in Kenya as shown by $\beta = 0.328$, $t = 2.528$, $p = .014$, $p < 0.05$. These findings implied that a unit increase in the applicability of CBET curriculum would result to increased employability rate of visually impaired graduates from TVET institutions in Kenya by 0.328 units. The findings also showed that the employability rate of the visually impaired graduates from TVET institutions in Kenya was positively and significantly affected by the adaptability of facilities applied in CBET implementation given $\beta = 0.494$, $t = 3.500$, $p = .001$, $p < 0.05$. The findings meant that a unit increase in the adaptability of facilities applied in CBET implementation would result to increased employability rate of visually impaired graduates from TVET institutions in Kenya by

0.494 units. It was also established that trainers' qualifications in CBET had a significant positive effect on the employability rate of visually impaired graduates from TVET institutions in Kenya as shown by $\beta = 0.313$, $t = 2.421$, $p = .018$, $p < 0.05$. The findings implied that a unit increase in trainers' qualifications in CBET would result to increased employability rate of visually impaired graduates from TVET institutions in Kenya by 0.313 units.

The above findings led to rejection of the null hypothesis and an inference made that competence based education and training significantly impacted the employability rate of the visually impaired graduates from TVET institutions in Kenya. The findings were in line with study by Munishi and Emmanuel (2016) which found that competency-based education and training exposed graduates to the right knowledge, hands on skills and attitude which equipped them with the confidence that was necessary for employment. The study findings also agreed with that of Ndile (2018) which found that CBET programmes immensely increased the employability aspects among the graduates compared to the conventional approach of training. The study explained that graduates who underwent the CBET programmes were very competent at their workplace and performed better in contrast to traditional approach graduates who were deemed not adequate enough in delivery of job tasks and performance objectives.

Ayonmike, Okwelle and Okeke (2014) noted that CBET was a way of approaching (vocational) training that puts much emphasis on skills acquisition and knowledge preparing learners for realistic work practices. Olabiyi, Adigun and Adenle (2008)

while underscoring the importance of trainers’ competencies and facilities in TVET institutions, noted that in implementing CBET curriculum 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 CBET. This way, the learners were able to form right habits of doing and thinking to a degree necessary for securing employment. The following model was fitted;

$$\text{Employability Rate of Visually Impaired Learners from TVET Institutions in Kenya} = -0.756 + 0.328 \text{ Applicability of CBET curriculum} + 0.494 \text{ Adaptability of Facilities applied in CBET Implementation} + 0.313 \text{ Trainers' qualifications in CBET}$$

Table 4.39: Regression Coefficients

| Mode I | | Unstandardized Coefficients | | Standardized Coefficients | t | Sig. |
|-----------|--|--------------------------------|------------|------------------------------|-------|-------|
| | | B | Std. Error | Beta | | |
| 1 | (Constant) | -0.756 | 0.41 | | 1.843 | 0.070 |
| | Applicability of CBET curriculum | 0.328 | 0.13 | 0.265 | 2.528 | 0.014 |
| | Adaptability of facilities applied in CBET implementation | 0.494 | 0.141 | 0.416 | 3.500 | 0.001 |
| | Trainers’ qualifications in CBET | 0.313 | 0.129 | 0.24 | 2.421 | 0.018 |

a Dependent Variable: Employability Rate of Visually Impaired Graduates

4.11 Assessing the Moderating Effect of Industry Linkage and Occupational Standards

The study sought to determine the moderating effect of industry linkage on the relationship between CBET and acquisition of employable skills among visually impaired graduates from TVET institutions in Kenya. The following hypothesis was therefore tested:

H₀₅: Industry linkage does not moderate the relationship between CBET and acquisition of employable skills among visually impaired graduates from TVET institutions.

Multiple regression analysis was conducted first to show the effect of CBET on acquisition of employable skills among visually impaired graduates from TVET institutions and lastly to test the moderating effect of industry linkage on the relationship between CBET and acquisition of employable skills among these graduates. To this end two models were run.

4.11.1 Multiple Linear Regression before Moderation

The following model was run:

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \mathcal{E}$$

Where:

Y = Acquisition of employable skills among visually impaired graduates from TVET institutions

{ β_i ; $i=1,2,3$ } = The coefficients for the various independent variables

X_1 = Applicability of CBET curriculum

X_2 = Adaptability of facilities applied in CBET implementation

X_3 = Trainers' qualifications in CBET

\mathcal{E} = Error term

The null hypothesis for the model was: $H_0: \beta_1 = \beta_2 = \beta_3 = 0$

The model summary results presented in Table 4.40 showed that applicability of CBET curriculum, adaptability of facilities applied in CBET implementation to needs

of visually impaired learners and trainers' qualifications in CBET explained a considerable proportion of the changes, 71.9%, in the acquisition of employable skills among the visually impaired graduates from TVET institutions in Kenya as shown by the R square of 0.719. The rest of the changes in the acquisition of employable skills among these graduates, 28.1%, were explained by other factors not included in this model.

Table 4.41: Model Summary

| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate |
|---|----------|-----------------|--------------------------|-----------------------------------|
| 1 | .848a | 0.719 | 0.705 | 0.296055 |
| a Predictors: (Constant), Trainers' qualifications in CBET, Adaptability of facilities applied in CBET implementation, Applicability of CBET curriculum | | | | |

The results presented in Table 4.42 shows that the model used to show the link between the applicability of CBET curriculum, adaptability of facilities applied in CBET implementation to needs of visually impaired learners and trainers' qualifications in CBET and the acquisition of employable skills among the visually impaired graduates from TVET institutions in Kenya was significant given $F(3, 61) = 51.913, p = .000 < 0.05$. The findings also implied that the independent variables satisfactorily predicted the acquisition of employable skills among the visually impaired graduates from TVET institutions in Kenya.

Table 4.42: Model Fitness Results

| Mode | | Sum of Squares | Df | Mean Square | F | Sig. |
|-------------|------------|-----------------------|-----------|--------------------|----------|-------------|
| 1 | Regression | 13.65 | 3 | 4.55 | 51.913 | .000b |
| | Residual | 5.347 | 61 | 0.088 | | |
| | Total | 18.997 | 64 | | | |

a Dependent Variable: Acquisition of employable skills among the visually impaired graduates
b Predictors: (Constant), Applicability of CBET curriculum, Adaptability of facilities applied in CBET implementation and Trainers' qualifications in CBET

The regression coefficient estimates of this model are presented in Table 4.43. The findings showed that the applicability of CBET curriculum positively and significantly affected the acquisition of employable skills among the visually impaired graduates from TVET institutions in Kenya as shown by $\beta = 0.210$, $t = 2.482$, $p = .016$, $p < 0.05$. These findings implied that a unit increase in the applicability of CBET curriculum would result to increased acquisition of employable skills among visually impaired graduates from TVET institutions by 0.210 units holding all other factors constant. According to Kumsa (2018), CBET curriculum takes into account employment-related success such as effective job skills, technical skills, occupation survival skills, job search skills, and entrepreneurial skills. The study supported the views by Kufaine and Chitera (2013) that CBET approach helped learners acquire skills that are necessary for the industry. The findings also concurred with that of Deißinger and Hellwig (2011) that CBET enabled employees not only to increase their knowledge and skills required at the workplace.

Similarly, the study found that the acquisition of employable skills among visually impaired graduates from TVET institutions was positively and significantly affected by the adaptability of facilities applied in CBET implementation as supported by $\beta =$

0.417, $t = 4.885$, $p = .000$, $p < 0.05$. The findings meant that a unit increase in the adaptability of facilities applied in CBET implementation would result to increased acquisition of employable skills among visually impaired graduates from these institutions by 0.417 units holding other factors constant. Olabiyi, Adigun and Adenle (2008) explain that learning occurs best through participation and hence, using training facilities helped learners to actively participate in learning since they learned by discovery as the trainer cannot have full knowledge on what the learner had to know.

The findings also agreed with that of Tambwe (2019) who while assessing the implementation of CBET system in technical institutions in Tanzania found that adequate provision of appropriate teaching and learning facilities/resources allowed for effective CBET implementation where students were able to develop the independent learning skills, problem-solving, and inquisitive minds that enabled them to get employment opportunities. According to the study, where the facilities were adequate, trainers were able to apply learner-centered interactive methods as required by CBET systems which ensured that learners acquired the necessary skills. The findings also supported the assertions by Mbugua, Muthaa, and Sang (2012) availability of modern and relevant training equipment affected the relevance of employable skills acquired by students to market skills needed.

The study further found that trainers' qualifications in CBET had a significant positive effect on the acquisition of employable skills among visually impaired graduates from TVET institutions in Kenya given $\beta = 0.356$, $t = 3.412$, $p = .001$,

$p < 0.05$. A unit increase in trainers' competencies in CBET would result to increased acquisition of employable skills among these graduates by 0.356 units holding other factors constant. These findings agreed with that of Adebambo (2017) who asserted that TVET principals and trainers ought to have a working knowledge on what CBET entailed as well as adapting the curriculum to meet diversified needs of visually impaired learners if they were to effectively prepare these learners. The findings also agreed with that of Ndile (2018) who found that the competency of the trainer involved in delivering CBET programmes was crucial in delivering the set curriculum within the educational system and ensured that the learners training was delivered as per the market expectations.

Therefore, the optimal multiple regression model before moderation was;

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3$$

$$Y = 0.241 + 0.210X_1 + 0.417X_2 + 0.356X_3$$

Acquisition of employable skills among the visually impaired learners in TVET institutions in Kenya = 0.241 + 0.210 Applicability of CBET curriculum + 0.417 Adaptability of facilities applied in CBET implementation + 0.356 Trainers' qualifications in CBET

Table 4.44: Regression Coefficients

| Model | Unstandardized Coefficients | | Standardized Coefficients | t | Sig. |
|---|-----------------------------|------------|---------------------------|-------|-------|
| | B | Std. Error | Beta | | |
| 1 (Constant) | 0.241 | 0.331 | | 0.728 | 0.469 |
| Applicability of CBET curriculum | 0.210 | 0.085 | 0.241 | 2.482 | 0.016 |
| Adaptability of facilities applied in CBET implementation | 0.417 | 0.085 | 0.450 | 4.885 | 0.000 |
| Trainers' qualifications in CBET | 0.356 | 0.104 | 0.297 | 3.412 | 0.001 |

a Dependent Variable: Acquisition of employable skills among the visually impaired learners

4.11.2 Multiple Linear Regression after Moderation

A moderator impacts the strength and/or direction of the relationship existing between the independent and dependent variable. It can enhance, reduce or change the impact of the independent variable. Hence, in order to determine whether industry linkage moderated the relationship between CBET and acquisition of employable skills among visually impaired graduates from TVET institutions in Kenya, the following model was specified;

$$Y = \beta_0 + \beta_1 X + \beta_2 M + \beta_3 X * M + \mu$$

Where;

Y is the Acquisition of employable skills among the visually impaired graduates from TVET institutions in Kenya

X is Composite for all the independent variables

M = Industry Linkage (Moderating Variable)

X*M = Moderator Multiplied by the Composite (Interaction)

ε = Error term

The following hypothesis was tested;

H₀: Industry Linkage does not significantly moderate the relationship between competence based education and training and the acquisition of employable skills among visually impaired graduates from TVET institutions in Kenya.

The results presented in Table 4.45 showed that industry linkage had a significant moderating effect on the relationship between competence based education and training and the acquisition of employable skills among visually impaired graduates from TVET institutions in Kenya. This explained by the p value of 0.019 associated with the coefficient of interaction which was less than 0.05 which led to the rejection of the null hypothesis. The coefficient of interaction was positive (0.196) which implied that a unit increase in the interaction between aspects of CBET under study and industry linkage resulted to about 0.196 units increase in the level of acquisition of employable skills among the visually impaired graduates from TVET institutions in Kenya.

The findings were in agreement with that of a study Moses, Muladi, and Wibawa (2017) which revealed that the linkage between the vocational schools' cooperation with industries was a solution to improving competence skills, knowledge and attitude of learners required by the industries through matching TVET programmes with the industry needs thus bridging competence and quality standard for high performance. The findings were also consistent with that of Kirya (2016) which showed that cooperation between TVET institutions and industry was pivotal and crucial turning

point to both the school as it enabled the school to produce quality output through updated curriculum and better learning models based on the industry needs. while enabling the industry also to get skilled and competent workforce at reduced costs.

The findings further supported the study by Aloysius, Ismail, and Arshad (2018) which found that by engaging in employment or opening employment center within learning institutions in collaboration with the industrial management, the issue of “skills mismatch” was minimized since learners were able to transfer the knowledge acquired during theory lessons into the labour market.

Table 4.45: Moderating effect of Industry Linkage

| Model | Unstandardized Coefficients | | Standardized Coefficients | t | Sig. |
|------------------|-----------------------------|------------|---------------------------|-------|-------|
| | B | Std. Error | Beta | | |
| 1 (Constant) | 1.347 | 0.286 | | 4.707 | 0.000 |
| Composite | 0.243 | 0.091 | 0.241 | 1.685 | 0.208 |
| Industry linkage | 0.071 | 0.018 | 0.068 | 1.044 | 0.373 |
| Interaction | 0.196 | 0.081 | 0.244 | 2.415 | 0.019 |

a Dependent Variable: Acquisition of employable skills among visually impaired learners

The moderating effect of occupational standards on the relationship between CBET and acquisition of employable skills among visually impaired graduates from TVET institutions in Kenya was also tested. The following model was specified;

$$Y = \beta_0 + \beta_1 X + \beta_2 M + \beta_3 X * M + \mu$$

Where;

Y is the Acquisition of employable skills among the visually impaired graduates from TVET institutions in Kenya

X is Composite for all the independent variables

M = Occupational standards (Moderating Variable)

X*M = Moderator Multiplied by the Composite (Interaction)

ϵ = Error term

To achieve this objective, the following hypothesis was tested;

H₀₆: Occupational standards do not significantly moderate the relationship between competence based education and training and the acquisition of employable skills among visually impaired graduates from TVET institutions in Kenya.

The significance of the interaction term was assessed in order to draw an inference. As shown in Table 4.46, occupational standards significantly moderated the relationship between competence based education and training and the acquisition of employable skills among visually impaired graduates from TVET institutions in Kenya. This can be explained by the fact that the p value associated with the interaction term was 0.021 which was less than the critical p value of 0.05 hence the null hypothesis was rejected. The implication of the findings was that a unit increase in the interaction between CBET and occupational standards would result to increased acquisition of employable skills among the visually impaired graduates from TVET institutions by 0.234 units given that the coefficient of interaction was positive (0.234).

Table 4.46: Moderating Effect of Occupational Standards

| Mode I | | Unstandardized Coefficients | | Standardized Coefficients | T | Sig. |
|-----------|--|--------------------------------|---------------|------------------------------|-------|-------|
| | | B | Std. Error | Beta | | |
| 1 | (Constant) | 1.283 | 0.286 | | 4.487 | 0.000 |
| | Composite Occupational standards | 0.559 | 0.084 | 0.544 | 6.680 | 0.000 |
| | Interaction | 0.210 | 0.048 | 0.229 | 2.305 | 0.025 |
| | | 0.234 | 0.014 | 0.235 | 2.364 | 0.021 |

a Dependent Variable: Acquisition of employable skills among visually impaired learners

According to Anane (2013), occupational standards are the basis upon which the program (curriculum), assessment and learning materials are designed and developed. Kaaya (2012) also notes that CBET is concerned with training to industry specific standards rather than an individual’s achievement relative to others in the group. Ayonmike, Chijioke, and Okeke (2014) emphasized that the development of the CBET curriculum based on occupational standards ensured that the problem of skills mismatch, which had been identified by industry as a major cause of unemployment, was addressed. Therefore, after institutions had consulted with industry and businesses to generate valid and quality occupational standards, learning specifications for all the courses of the respective programmes were developed. Wahba (2013) also argued that with concrete occupational standards, newly qualified graduates of vocational training programmes were capable of meeting the requirements of practice without substantial further education and training in their occupational areas.

CHAPTER FIVE

SUMMARY OF FINDINGS, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

This chapter addresses the summary of the study findings, the conclusions and the recommendations. This is done in line with the objectives of the study.

5.2 Summary of Findings

This section gives a summary of the major findings of the study. This is done as guided by the study objectives. The study focused on the influence of competence based education and training approach on the employability of visually impaired learners in technical and vocational education and training institutions in Kenya. The focus was on the influence of applicability of competence based education and training curriculum, adaptability of facilities applied in CBET implementation, and the extent to which trainers' qualifications in CBET influenced the acquisition of employable skills among visually impaired learners in TVET institutions in Kenya. The study also sought to establish the impact of competence based education and training on employability rates of the visually impaired graduates from TVET institutions in Kenya.

5.2.1 Applicability of CBET Curriculum and Acquisition of Employability Skills among VILs

The first objective of the study sought to determine the applicability of competence based education and training curriculum on acquisition of employable skills among visually impaired learners in TVET institutions in Kenya. The study established that

most of the trainers inclusive of principals and the heads of departments had received special training to equip them with the necessary skills and knowledge in implementing the CBET approach. It was found that even though most of them were conversant with the approach, continuous training was required. The study found that much of the special training was on competence based assessment and verification besides trainings in technical and special needs education, trainer of trainers courses in CBET and other refresher courses.

The study further discovered that core competencies were the most challenging competencies to impart to the visually impaired learners when compared to basic and common competencies. The findings of the study showed that quite a number of learners in the institutes were not able to have a minimum of three to a maximum of five elements of core competencies for them to be declared competent which necessitated the extension of time for learning so that these learners could perfect their competencies and also adapting the curriculum to meet their needs and consider their difficulties. The study also established that there was still room for improvement in terms of making the CBET curriculum more adaptable towards employability of the visually impaired graduates even though the curriculum was recognized to be generally beneficial in its current form.

It was found that a majority of the visually impaired graduates believed that the CBET approach adequately prepared them for the job market even though most of the trainers and HODs felt that there was much that needed to be done in relation to this. It was further found that there were several challenges that the institutes faced while

implementing the CBET curriculum. The leading challenges that the trainers faced were lack of adequate reference materials, lack of enough resources, communication challenges with learners, inadequate space, and also resources/materials that were not adapted to the needs of the visually impaired learners. Inadequate equipment and tools as well as ill-equipped workshops were also found to be a hindrance to the effective implementation of the CBET curriculum in these institutions.

Quite a number of suggestions towards improving the CBET curriculum were given leading among them being allocation of more resources and time in learning, provision of more CBET curriculum reference materials and resources, regular review and modification of curriculum to meet needs of the visually impaired, increased integration of theory content with practical lessons as well as enhanced strategies used in delivering CBET curriculum content in particular core competencies among others. The inferential results showed that applicability of CBET curriculum was positively and strongly correlated with the acquisition of employable skills among the visually impaired learners in these institutions. The regression results on the other hand showed that applicability of CBET curriculum had a positive and significant influence on the acquisition of the employable skills among visually impaired learners in Kenya. The results also led to the rejection of the null hypothesis and therefore an inference made that applicability of CBET curriculum significantly influenced the level of acquisition of employable skills among the visually impaired learners in TVET institutions in Kenya.

5.2.2 Adaptability of Facilities applied in CBET Implementation and Acquisition of Employability Skills among VILs

The second objective of the study sought to establish the influence of adaptability of facilities applied in CBET implementation to needs of visually impaired learners on the acquisition of employable skills among visually impaired learners in TVET institutions in Kenya. The study noted that generally, most of the practical sessions in these institutes had between 5 to 15 learners though in some departments, they were about 20 learners. The study also noted that in these institutes, the utilization of available facilities by the visually impaired learners was overstretched since the ratio of facilities to learners was inadequate even though there was quite a number of cases of underutilization. The underutilization of the facilities was attributable to among other reasons low absorption rates in some areas of specialization especially the technical areas as well as old equipment and tools which did not meet industry needs. The study further discovered that in a large number of workplaces, the equipment, machines and tools used were somehow similar to those used in training the visually impaired learners in the institutes. The study established that quite a large number of visually impaired graduates had been exposed to technology shock in the job markets, a situation linked to the use of advanced and sophisticated equipment, tools and even materials in various industries. Furthermore, it was found that some of the facilities available in the workplaces were not available in the institutes. Hence, most of the absorbed graduates did not know where to begin when placed in an industry and required on job training and assistance by sighted peers to learn how to use these facilities.

The study noted that there was still much that needed to be done to make the available facilities within the institutes under study more adapted for use by VILs towards enhancing the employability of graduates with the visually impaired. The study established that even though a large number of training equipment and tools, resource materials and workshops within the institutes were quite suitable in training the visually impaired learners in preparation for job market, they were inadequate, ill-maintained or not adapted to the requirements of learners with visual impairments. This could be attributed to the inadequacy of the funds allocated by the government for enhancement of TVET facilities as highlighted by the trainers/principals and also the HODs though the MOE's position as stated by an official was that the allocations which were done yearly were adequate. The lack of adequate funding made the acquisition of new modern facilities and maintenance of existing ones a hurdle for these institutions.

The study established that the suggestions for improvement of facilities in institutes towards acquisition of employable skills among the visually impaired learners given centered on making these facilities adaptive to the needs of these learners so that they can be learner friendly, increasing the facilities in the institutes and also ensuring that there was more space for workshops which were equipped with specialized infrastructure. The study also discovered a strong positive correlation between the adaptability of facilities applied in CBET implementation to needs of visually impaired learners in these institutions and their acquisition of employable skills. The study further found that the acquisition of employable skills among the visually impaired learners in TVET institutions in Kenya. As result, the null hypothesis was

rejected and an inference made that adaptability of facilities applied in CBET implementation to needs of visually impaired learners significantly influenced the acquisition of employable skills among the visually impaired learners in Kenya.

5.2.3 Trainers' Qualifications in CBET and Acquisition of Employability Skills among VILs

The third objective of the study examined the extent to which trainers' qualifications in CBET implementation affected the acquisition of employable skills among visually impaired learners in TVET institutions in Kenya. The study discovered that there was shortage of trainers in most departments in the institutes. This was attributed to the continuous increase of learners with special needs and multiple disabilities and the requirement of the visually impaired to have a trainer per learner at a given time. The study also noted that quite a number of trainers in these institutes in different departments were not adequately equipped to implement the CBET approach with a particular focus on the visually impaired learners. For instance, some of the trainers did not know how to use braille. Hence, they found it difficult to train learners with visually impairments on CBET. Some of the trainers were also found to lack basic skills which affected how they handled their learners.

The study found that trainers' qualifications in CBET were strongly, positively and significantly associated with the level of acquisition of employable skills among the visually impaired learners in these institutions in Kenya. The study also established that trainers' qualifications in CBET implementation positively and significantly affected the acquisition of employable skills among the visually impaired learners in

the TVET institutions in Kenya. Hence, the null hypothesis was rejected and a conclusion made that the acquisition of employable skills among the visually impaired learners in Kenya was significantly influenced by trainers' qualifications in CBET implementation.

5.2.4 Competence Based Education and Training and Employability Rate of Visually Impaired Graduates

The fourth objective of the study was to establish the effect of competence based education and training on employability rates of the visually impaired graduates from TVET institutions in Kenya. The study established that the general feeling among the graduates was that the CBET approach adequately prepared the visually impaired learners for the job market and through this approach, they were able to acquire fundamental knowledge needed in the marketplace such as how best to market their business, how to communicate, treat and handle their customers, how to execute business ideas, business planning and general business management etc. The study also found that the skills acquired through this approach were relevant enabling the participation of the visually impaired in the job market especially through self-employment.

It was established that the facilities used in the implementation of CBET in these institutes however were not adequate in preparing learners for the job market. For instance, even though the institutes possessed most suitable training equipment and tools, they did not match the number of learners and some were not comparable to those in the market place. The workshops in the institutes were found to be small and

ill equipped. The study found that basically, the graduates had adequately acquired diverse competencies. Suggestions for improvement of CBET approach in enhancing the employability of the visually impaired as highlighted majorly touched on entrenchment of employment needs in the CBET curriculum taking in to consideration the visually impaired, provision of more resources and extended time for course work and upgrading of courses stipulated in the curriculum.

The study discovered that the institutes made follow ups to ascertain the number of graduates who had secured employment which was step towards assessing the efficiency of their training strategies. The study also established that most of the visually impaired graduates from the TVET institutions were self-employed given that the job market was not adequately positioned to absorb these graduates. This was attributed to stigma and also the unwillingness to bear the accommodation costs related to employing visually impaired persons such as provision of assistive devices. The study further discovered that even though employers believed that visually impaired were capable of working efficiently especially since they were committed and dedicated to their job assignments, this did not translate to their absorption in the companies.

The employers strongly believed that training strategies adopted by the TVET institutions were adequate in preparing visually impaired learners for the job market but suggested that these strategies needed to be continuously improved to enhance the capacity of VI graduates to compete in the job market and broaden their abilities in carrying out their tasks. The employers underscored that the visually impaired

graduates were able to carry out their job tasks efficiently just like their sighted peers in the workplace even though they needed to be supported besides making the working environment less restrictive for these graduates. The study also found that the quality of products and services offered by the visually impaired from these TVET institutions was relatively good based on the feedback obtained from customers and employers and also observation by the researcher.

It was noted that structures in most of the companies and institutions where the visually impaired graduates secured employment were not adequate in promoting friendly working environments hence these graduates struggled to cope in these workplaces. This was attributed to the unwillingness of the employers to bear accommodation costs related to absorbing these graduates as well as poor compliance to laid down policies and workplace safety provisions when dealing with persons with visual impairment. For the self-employed graduates, they faced challenges in marketing their products major due to communication barriers and lack of capacity to meet the needs of their consumers. On the other hand, the employed graduates received poor remuneration and faced hurdles in competing with the sighted graduates for available positions. The study discovered that a majority of the visually impaired graduates from these TVET institutions were not satisfied with their current source of income.

Generally, the study found that the acquisition of employable skills through CBET among the graduates did not translate to greater employability rates. Hence, a large number of the graduates resulted to self-employment majorly in the informal sector.

Some of the suggestions on improving the implementation of the CBET approach included the involvement of stakeholders from different industries in developing the CBET curriculum, provision of more capacity building to the trainers to handle learners with visual impairments, emphasis on practical oriented teaching methods, provision of tools and machinery in workshops that matched the ones used in the industry as well as the provision of enhanced training facilities. Increased staffing, more linkage with the industry and adapting the curriculum and facilities to the learners' needs were also suggested. The study found that the civil society played a crucial role in advocating for employment of the visually impaired graduates.

The inferential analysis revealed that CBET in particular applicability of the curriculum, adaptability of facilities applied in implementing CBET and trainers' qualifications on CBET significantly affected the employability rates of visually impaired graduates from TVET institutions in Kenya.

5.2.5 Moderating Effect of Industry Linkage and Occupational Standards on the Relationship between CBET and Acquisition of Employable Skills among VILs

The study found that the two institutes had extensively collaborated with industry players in ensuring that their visually impaired learners got workplace experiences through industrial attachment and other job placements in the industries which enhanced the professional development of the learners. Through these collaborations, the institutes had also been able to receive in kind support from various industry players such as equipment donations. The study also discovered that during the development of occupational standards used in guiding the skills taught in the TVET

institutions, the needs of the visually impaired and adaptability of existing facilities within the institutes to the needs of these learners were not adequately considered. The framework for implementing the available standards was also found to be inadequate and that all the relevant stakeholders had not been considered in developing these occupational standards. The study found that industry linkage and occupational standards significantly moderated the relationship between CBET and acquisition of employable skills among the visually impaired learners in TVET institutions. The findings meant that with increased industrial linkage and development of occupational standards, CBET was associated with enhanced acquisition of employable skills among the learners.

5.3 Conclusions

Several conclusions were made based on the study findings. The study concluded that without continuous training, the parties were ill-equipped to implement the CBET curriculum especially for learners with visual impairments. The study also concluded that core competencies as stipulated in the CBET curriculum were quite challenging for trainers to train the visually impaired learners when compared to basic and common competencies and that most of these learners were yet to acquire the recommended core competencies. The study also concluded that the institutes had put in place measures that ensured that the visually impaired learners with challenges in acquiring all the recommended competencies as per the curriculum requirement were assisted to be fully competent. The study also concluded that the CBET curriculum was yet to be fully adapted to the needs and concerns of the visually impaired graduates even though it had been highly recognized as noble. The study 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 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.

The study concluded that the institutes were not sufficiently staffed with trainers who could adequately train the visually impaired learners. The study concluded that there was disparity in staffing of various departments in the institutes and that the highly technical areas of specialization suffered the major shortages. The study also

concluded that most of the trainers in these institutes were not adequately equipped to implement the CBET approach of training when it came to learners with visual impairments. The study further concluded that the trainer's qualification in CBET significantly affected the level of acquisition of employable skills among the visually impaired learners in TVET institutions.

It was concluded that CBET significantly affected the employability rates of visually impaired graduates from TVET institutions. The study concluded that most of these graduates went into self-employment since there was a low absorption rate in different industries. The study concluded that disability status that is, having visual impairments was the main factor which led to the low absorption rates of VI graduates who had gone through the CBET system. The study concluded that acquisition of employable skills did not automatically translate to the employability of these graduates in different industries and most graduates were not satisfied with their current employment due to specific challenges they faced by just the fact that they were disabled. This was more exacerbated where the graduates were totally blind when compared to those with low vision. The study further concluded that industry linkage and occupational standards played a great role in enhancing the effect of CBET on the employability of visually impaired graduates and that the current occupational standards guiding the skills taught in TVET institutions were not cognizant to the needs of persons with visual impairments.

5.4 Recommendations

Several recommendations to different parties were made based on the study findings.

5.4.1 Ministry of Education

The study recommends that the ministry of education should ensure that CBET curriculum is reviewed continuously and made more flexible in order to allow for effective adjustments when necessary to accommodate the emerging needs and dynamics among special groups of learners including the visually impaired so that they can be adequately prepared for the job market.

The study recommends that the ministry should continuously enhance the CBET curriculum in order to include diverse courses that take in to consideration the different capabilities of the visually impaired learners so that they can have a diverse pool of courses to choose from.

The study also recommends that when developing the CBET curriculum, the ministry should provide for extended period of courses and other supportive learning aids so that learners can have adequate time to perfect their competencies especially core competencies. The study recommends that the ministry should provide for refresher courses in the CBET curriculum to ensure that graduates can go back to the institute to sharpen their skills in tune with the changing dynamics in the job market environment or any other advancement in the areas of specialization.

The study recommends that the government through the Ministry of Education should increase the budgetary allocations to TVET institutions particularly those catering for persons with special needs so as to ensure that these institutions can acquire improved

equipment, tools and materials besides upgrading the general infrastructure within the institutes.

The study recommends that the ministry should ensure that special TVET institutions are considered in all matters related to the implementation of the CBET curriculum. The ministry should also ensure that the required occupational standards are carefully entrenched into the curriculum content and that the curriculum should include repair and maintenance services as a unit of competency.

The study also recommends that the ministry should ensure adequate staffing in special TVET institutions and increase regular capacity building plans for the trainers on CBET besides carefully considering trainers' qualifications before hiring. The study further recommends that the ministry should increase public awareness about vocational training for PWDs to increase enrolment in the TVET institutions and also enhance collaborations with industries and private sectors.

5.4.2 Ministry of Labour

The study recommends that the Ministry of Labour should adequately liaise with industry managers in the development of occupational standards and ensure that the standards take into consideration the needs of VIL. The study also recommends that in line with the Kenyan Constitution 2010, the ministry should promptly ensure that the 5% policy on the recruitment of PWDs is adhered to and action taken to managers who contravenes the same. The study further recommends that the ministry should

ensure that the working environments for VI employees are conducive and least restrictive as stipulated in the Special Needs Policy 2018.

5.4.3 Management of the TVET Institutions

The study recommends that the management of the TVET institutions should actively link up with partners in the industry to promote uptake of VIL for attachment and employment opportunities. The managements of these institutions should also ensure that the institutions are least restrictive and therefore mobility friendly to this special group. The study recommends that they should form special committees within the institutions that will do follow ups on VILs after their graduation.

The study also recommends that the management of these institutions should ensure that trainers adhere to TVET-CDACC stipulations in regards to the training of VIL and that action is taken to those who act contrary. The study also recommends that the management should arrange for open day workshops where the general public visit the institutions and have the VIL showcase their products/services. This will increase public awareness and appreciation of this special group and open up opportunities for absorption.

The study also recommends that the management of TVET institutions should diversify their resource mobilization strategies so that they are able to marshal the needed resources needed to acquire the state of art required in effectively implementing the CBET approach for the visually impaired. The study also recommends that they should conduct benchmarking surveys so that when acquiring

training tools, equipment, machines, resource materials and also building facilities, the reality in the industries is considered so that learners have exposure to tools and equipment used in the industry. The study further recommends that besides working with donors and development partners, the management of these institutions should collaborate with large industries that can donate various equipment, machines and tools that are too expensive for the institutes to acquire on their own and also provide internship training for the trainers on the operations of the machines.

5.4.4 Civil Societies

The study recommends that civil societies should enhance their activism/advocacy in ensuring that the 5% recruitment policy for PWDs is adhered to. They should also liaise with relevant institutions so as to ensure that the rights of PWDs are respected. The study also recommends that these societies should increase public awareness on disability mainstreaming in an effort to have the PWDs and their capabilities recognized. Furthermore, the study recommends that civil societies should publicly criticize employers who mistreat VI employees or fail to give them employment opportunities due to their special needs despite them being qualified and competent to take up the jobs. They should also put emphasis on their involvement in all phases of the implementation of CBET especially in developing the occupational standards that consider the needs of the PWDs and also the structures/frameworks for their execution.

5.4.5 Industry Managers/Employers

The study recommends that industry managers/employers should actively get involved in the training of VIL undergoing through the CBET system by taking an active position in the development of occupational standards to ensure that institutions produce graduates who are market ready. The study also recommends that they should avail more industrial attachment, internship and employment opportunities to this special group of people and that they should adhere to the 5% recruitment policy for PWDs as stipulated in the Kenya Constitution 2010. They should also ensure that the workplaces are adapted for VI employees and that they are least restrictive besides treating the VI employees equally as their sighted counterparts in matters of capacity building while at the job and also in remuneration.

5.4.6 Trainers

The study recommends that trainers in TVET institutions should adequately and passionately embrace the CBET approach in training VILs and equip them with employable skills to make them self-reliant and restore self-esteem. The study recommends that they should continuously attend seminars and workshops and also take up more refresher courses to keep up with current developments in their areas of specialization. The study further recommends that the trainers should make an effort to study and embrace braille literacy which is the most crucial instruction tool for the VIL besides tirelessly training and retraining VILs until they master core competences before having them declared competent. They should also be friendly and accommodative to the learners.

4.5.7 Visually Impaired Graduates

The study recommends that the visually impaired graduates from these institutions should form Savings And Credit Co-Operatives (SACCOs) and self-help groups to seek for funding from financial institutions. It was noted that they do pretty well in self-employment and this will go a long way in actualizing dreams of many. The study also recommends that they should continuously study even after graduating so as to keep being updated on new developments in their areas of study. They should also be openly vocal against any mistreatment on employment matters and apply for tenders set aside for PWDs to enhance their entrepreneurship skills. The study further recommends that these graduates should not shy away from applying for competitive positions and that they should liaise with placement officers at the Kenya Society for the Blind and the National Council for Persons with Disabilities and other organizations supporting persons with disabilities in order to secure job opportunities.

5.4.8 Social Media Community

The study recommends that the social media community should sensitize the public about PWDs and their capabilities by highlighting success stories of PWDs who are making it in the corporate world either in small ways or mega ways. They should actively get involved in all matters regarding PWDs and voice them besides showcasing the products/services made by PWDs pro bono for product promotion for graduates in self-employment. The social media community should also highlight the industries which have absorbed the PWDs to encourage others to engage them as well.

5.4.9 Sighted Persons who work with VI Persons

The study recommends that sighted persons working with visually impaired persons should keep up the good work of assisting fellow VI employees in areas where they need their assistance. They should be vocal against any mistreatment to their fellow VI counterparts and empower them to be self-sufficient.

5.5 Suggestions for Further Research

The study recommends that a similar study can be replicated to compare the effectiveness of the CBET approach in influencing the employability of learners with different forms of special needs so that a comparative analysis can be done to establish the areas for amendments for each need. A replica study considering sighted learners in TVET institutions can also be undertaken. The study also recommends that study to explore the extent to which the general public is aware about national policies on inclusion of PWDs and how it has affected social perceptions towards them as well as the employability rates of graduates among PWDs can be undertaken.

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APPENDICES

Appendix I: Principals' Questionnaire

Principals' Consent Form

Instructions:

Kindly read the following statements and sign the form as an indicator of your acceptance to participate in the study, if you agree with the contents.

I am Priscillah Nduku Mutua, a student at the Machakos University, School of Education (Kenya). In partial fulfilment of the requirements for the award of Doctor of Philosophy Degree (PhD) in Education, I am conducting a research entitled *“Competence Based Education and Training and Employability of Visually Impaired Learners in Technical and Vocational Education and Training Institutions in Kenya.”*

If you agree to take part in this study, you are asked to complete the attached questionnaire. The questionnaire includes a set of statements in relation to the CBET teaching modalities. Your participation is purely on voluntary basis and you are free to drop out of the study at any point without any subsequent victimization.

Your identity during the study will remain anonymous and it will not be revealed at any stage of the study. Results of this study will be disseminated through various means including conference presentations and publishing in journals.

In case of any clarifications, feel free to contact the researcher (Priscillah N. Mutua: Mobile No: 0723502952, Email: priscimutua@yahoo.com).

I will highly appreciate if you will spare some time from your busy schedule to fill in the questionnaire.

Study Participants' Declaration

Kindly tick (✓) in the box against each of the following statements if you are in agreement

- i. I have read and understood the above statements regarding the study entitled “Competence based education and training and employability of visually impaired learners in technical and vocational education and training institutions in Kenya”.
- ii. I do understand that I am free to ask any questions in case I need clarifications, using the contact provided
- iii. I have been informed that my participation in the study is on voluntary basis and there will be no victimization in case I opt to drop out from the study at any point
- iv. I understand that anonymity will be used throughout the study and all the information I will avail will be used for the study purposes only
- v. I permit the study findings to be disseminated professionally through various academic means
- vi. I permit that the researcher would take notes of any contents during data collection
- vii. I freely and voluntarily agree to participate in the study.

Study participants' signature..... Date.....

Researchers' signature..... Date.....

Part I: Demographic Information

1. Gender

(i) Male []

(ii) Female []

2. Age:

(i) 30 years and below []

(ii) 31 to 40years []

(iii) 41 to 50years []

(iv) Above 50years []

3. What is your highest academic qualification?

(i) Masters []

(ii) Bachelors []

(iii) Diploma []

(iv) Others

(specify).....

4. Years of experience as a principal

(i) 1 -5 years []

(ii) 6 -10 years []

(iii) 11 – 15vyears []

(iv) More than 15years []

Part II: Competence Based Education and Training (CBET) Curriculum

6. (i) Have you undergone any special training to equip you with requisite knowledge and skills to effectively implement the CBET curriculum?

a. Yes []

b. No []

(ii) Explain your response to question 6(i) above

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(iii) Using a scale of **1=Strongly Disagree to 5=Strongly Agree**, kindly rate your opinion in relation to the following statements on the applicability of CBET curriculum in relation to employability of visually impaired graduates

| | CBET Curriculum | Strongly Disagree | Disagree | Neutral | Agree | Strongly Agree |
|----|--|--------------------------|-----------------|----------------|--------------|-----------------------|
| 1. | The time allowed for theory classes is adequate | | | | | |
| 2. | The practical time allocated is adequate | | | | | |
| 3. | There are adequate resources to implement the theory lessons | | | | | |
| 4. | There are adequate resources to teach the practical lessons | | | | | |
| 5. | Strategies used to deliver the CBET curriculum content to the learners meet the required standards | | | | | |
| 6. | The CBET curriculum is adequate to prepare the graduates for the job market | | | | | |
| 7. | The assessment process used in the curriculum meet the required standards | | | | | |
| 8. | The curriculum is adapted to meet visually impaired learners needs. | | | | | |

7. In your opinion, what areas need improvement in regards to CBET curriculum towards enhancing the employability of visually impaired graduates?

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Part III: State of Facilities

8. Using a scale of **1=Strongly Disagree to 5=Strongly Agree**, kindly rate your opinion in relation to the following statements on state of facilities in the institute.

| | State of Facilities | Strongly Disagree | Disagree | Neutral | Agree | Strongly Agree |
|----|--|--------------------------|-----------------|----------------|--------------|-----------------------|
| 1. | There are adequate teaching /learning materials to implement the theory content of CBET curriculum. | | | | | |
| 2. | There are adequate training equipment and tools in the workshops for use during practical lesson. | | | | | |
| 3. | The teaching materials, training equipment and tools have been adapted to meet the needs of the visually impaired. | | | | | |
| 4. | The workshops within the institute are adequate for training visually impaired learners. | | | | | |
| 5. | The institute’s workshops are well ventilated and have enough space for easy training of visually impaired learners. | | | | | |
| 6. | The institution environment is least restrictive for the visually impaired learners. | | | | | |
| 7. | The training equipment are regularly serviced and maintained. | | | | | |

9. Are the training equipment and tools used for training the visually impaired learners in this institute similar with those used in various workplaces?

- (i) Not at all []
- (ii) Somehow []
- (iii) To a great extend []

10. What are your suggestions of improvement of facilities in the institute towards the acquisition of employable skills among visually impaired learners?

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Part IV: Trainers’ Competencies

11. To what extent do you agree or disagree with the following statements on trainers’ competencies in implementing CBET in this institute.

| | | Strongly Disagree | Disagree | Neutral | Agree | Strongly Agree |
|---|--|-------------------|----------|---------|-------|----------------|
| | Trainer's Competencies | | | | | |
| 1 | The institution has adequate trainers to implement the CBET curriculum. | | | | | |
| 2 | Trainers are well trained on the implementation of the CBET curriculum. | | | | | |
| 3 | The trainers are well conversant with the CBET curriculum and its implementation strategies. | | | | | |
| 4 | The trainers attended seminars to update their knowledge and skills on the CBET curriculum implementation approaches. | | | | | |
| 5 | The seminars the trainers attended equipped them with the requisite knowledge and skills to implement the CBET curriculum. | | | | | |
| 6 | Their years of experience as a trainer have perfected their skills. | | | | | |
| 7 | The trainers always strive to ensure that the learners meet their learning requirements as per the CBET curriculum. | | | | | |

12. In your opinion, how do trainers’ competencies affect the acquisition of employability skills among visually impaired learners?

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Part V: Occupational Standards

13. This section seeks to assess the role of occupational standards on the link between competence based education and training approach and

employability of visually impaired graduates. State your level of agreement or disagreement with the following statements on occupational standards.

| | Occupational Standards | Strongly Disagree | Disagree | Neutral | Agree | Strongly Agree |
|----|--|--------------------------|-----------------|----------------|--------------|-----------------------|
| 1. | The needs of visually impaired learners are always considered when developing occupational standards which guide the skills taught in TVET institutions. | | | | | |
| 2. | The adaptability of equipment and facilities in meeting the needs of visually impaired learners is considered when developing occupational standards which guide the skills taught in TVET institutions. | | | | | |
| 3. | The framework for implementing occupational standards touching on the needs of visually impaired learners in TVET institutions is adequate. | | | | | |
| 4. | All the relevant stakeholders are actively involved when developing occupational standards for skills taught in TVET institutions. | | | | | |

14. In your opinion, what are the major occupational standards that affect the effectiveness of CBET approach in enhancing the employability of visually impaired graduates from TVET institutions?

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Part VI: Industry Linkage

15. State your level of agreement or disagreement with the following statements on the role of industry linkage in the link between competence based education and training approach and employability of visually impaired graduates from TVET institutions.

| | | Strongly Disagree | Disagree | Neutral | Agree | Strongly Agree |
|----|--|-------------------|----------|---------|-------|----------------|
| | Industry Linkage | | | | | |
| 1. | The institute actively collaborates with various actors in diverse sectors to secure internships, attachments and part-timework opportunities for their visually impaired learners. | | | | | |
| 2. | The institute collaborates with various industry partners who offer in-kind support such as donation of equipment, student scholarships, teaching grants for the visually impaired learners. | | | | | |
| 3. | There is continuous involvement of industry partners in the curriculum development process within TVET institutions so that the curriculum matches industry expectations. | | | | | |
| 4. | The institute supports the placement of staff by industry to the institute as part-time professors, visiting professors, and executives in residence. | | | | | |
| 5. | The institute continually engages accredited industry experts to provide career guidance and counselling to their visually impaired learners. | | | | | |
| 6. | The institute prioritizes partnerships with industries that use tools and equipment similar to those used when training the visually impaired learners within the institute | | | | | |

16. How has industry linkage affected the effectiveness of CBET approach in enhancing the employability of visually impaired graduates from TVET institutions?

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Part VII: Employability Skills Acquired by Visually Impaired Graduates

17. To what extent do you agree that the implementation of the CBET approach of teaching in this institute has equipped the visually impaired graduates with the following skills to enable them compete effectively in the job market;

| | Employability Skills | Strongly Disagree | Disagree | Neutral | Agree | Strongly Agree |
|-----|--|--------------------------|-----------------|----------------|--------------|-----------------------|
| 1. | Basic skills (reading, writing, listening, speaking, mathematics) | | | | | |
| 2. | Thinking skills (creative thinking, effective decision making, problem solving, reasoning skills, ability to learn) Intercultural Skills (working with people from diverse backgrounds) | | | | | |
| 3. | Personal qualities (taking responsibility for actions, goal oriented, friendly, open, honest, meeting customer demands). | | | | | |
| 4. | Integrity (honest, sound moral character and values) | | | | | |
| 5. | Resource management (identifying, organizing, planning, and allocating resources; prioritizing; time and project management) | | | | | |
| 6. | Interpersonal skills (working well with others as a team, openness to diversity, excellent customer service skills) | | | | | |
| 7. | Systems management (understand and effectively work with social, organizational, and technological systems) | | | | | |
| 8. | Technology use (working with computers and other technology, selecting right tools, equipment, hardware, and software for a job, and application of knowledge to tasks) | | | | | |
| 9. | Adaptability (ability to adapt to changing work environments) | | | | | |
| 10. | Work ethics (performing the assigned duties according to the laid down regulation, ability to design/make needed customer items within the set time) | | | | | |
| 11. | Professionalism (acting in a responsible manner, maturity, self- confidence) | | | | | |

Part VIII: Employment Rate of Visually Impaired Graduates

18. As an institution, do you do follow up to ascertain the number of visually impaired graduates who secure jobs?

(i) Yes []

(ii) No []

If yes, how many are;

(i) Self-employed []

(ii) Employed by the government []

(iii) Employed in companies []

(iv) Any other form of employment

(Specify).....

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19. To what extent do you agree or disagree with the following statements

pertaining to the employment rates of visually impaired graduates from this institution.

| | Employment Rates of Visually Impaired Graduates | Strongly Disagree | Disagree | Neutral | Agree | Strongly Agree |
|----|--|--------------------------|-----------------|----------------|--------------|-----------------------|
| 1. | The number of visually impaired graduates from this institution that have secured has increased significantly since the adoption of CBET approach. | | | | | |
| 2. | The ability of visually impaired graduates to take up competitive jobs without discrimination has increased significantly since the adoption of CBET approach. | | | | | |
| 3. | The ability of visually impaired graduates to secure diverse jobs/forms of employment has increased significantly since the adoption of CBET approach. | | | | | |
| 4. | Visually impaired graduates from this institution are highly satisfied with their current sources of income since the adoption of CBET approach. | | | | | |

20. As the principal, what are your comments regarding CBET approach used in

TVET institutions and employability of visually impaired graduates?

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- End -

Thank you for your cooperation

Appendix II: Focused Group Discussion Guide for the HODS

HODs' Consent Form

Instructions:

Kindly read the following statements and sign the form as an indicator of your acceptance to participate in the study, if you agree with the contents.

I am Priscillah Nduku Mutua, a student at the Machakos University, School of Education (Kenya). In partial fulfilment of the requirements for the award of Doctor of Philosophy Degree (PhD) in Education, I am conducting a research entitled *“Competence Based Education and Training and Employability of Visually Impaired Learners in Technical and Vocational Education and Training Institutions in Kenya.”*

If you agree to take part in this study, you are asked to complete the attached questionnaire. The questionnaire includes a set of statements in relation to the CBET teaching modalities. Your participation is purely on voluntary basis and you are free to drop out of the study at any point without any subsequent victimization.

Your identity during the study will remain anonymous and it will not be revealed at any stage of the study. Results of this study will be disseminated through various means including conference presentations and publishing in journals.

In case of any clarifications, feel free to contact the researcher: (Priscillah N. Mutua: Mobile No: 0723502952, Email: priscimutua@yahoo.com).

I will highly appreciate if you will spare some time from your busy schedule to fill in the questionnaire.

Study Participants' Declaration

Kindly tick (√) in the box against each of the following statements if you are in agreement

- i) I have read and understood the above statements regarding the study entitled “Competence based education and training and employability of visually impaired learners in technical and vocational education and training institutions in Kenya”.
- ii) I do understand that I am free to ask any questions in case I need clarifications, using the contact provided.
- iii) I have been informed that my participation in the study is on voluntary basis and there will be no victimization in case I opt to drop out from the study at any point.
- iv) I understand that anonymity will be used throughout the study and all the information I will avail will be used for the study purposes only.
- v) I permit the study findings to be disseminated professionally through various academic means.
- vi) I permit that the researcher would take notes of any contents during data collection.
- vii) I freely and voluntarily agree to participate in the study.

Study participants' signature..... Date.....

Principal researchers' signature.....Date.....

FOCUS GROUP DISCUSSION FOR HODS

1. (i) Are you conversant with CBET approach?

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(ii) Expound on the comment on your answer in 1 (i) above

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2. What are your comments concerning acquisition of the following competencies by the visually impaired learners as stipulated in the CBET curriculum?

(i) Basic competencies

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(ii) Common competencies

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3. Learners are supposed to have a minimum of three to maximum of five elements of core competencies to be competent. In cases where learners fail to meet this requirement, what measures do you take to address the problem?

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4. (i) Regarding the trainers, is your department well-staffed to implement the CBET mode of teaching effectively?

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(ii) Expound on your answer in 4 (i) above

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5. To what extent are trainers in your department equipped to implement the CBET mode of training?

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6. What challenges do you face while implementing the CBET approach in relation to;

a. Theory teaching / training materials

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b. Resources for practical sessions

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7. What is your opinion on the adaptability of the CBET curriculum towards employability of the visually impaired graduates?

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8. (i) How many learners do you have during a practical lesson?

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(ii) Expound your answer in relation to utilization of facilities

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9. Can you comment on the adaptability of the facilities in TVET institutions in relation to imparting employable skills to visually impaired trainees?

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10. How is the job market positioned to absorb the visually impaired graduates?

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11. What are your comments on the employability of the visually impaired graduates who have been trained through the CBET mode of training?

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12. Kindly provide suggestions on how implementation of the CBET approach can be improved

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13. Propose strategies that may be employed to promote employability of the visually impaired graduates

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Appendix III: Trainers' Questionnaire

Trainers' Consent Form

Instructions:

Kindly read the following statements and sign the form as an indicator of your acceptance to participate in the study, if you agree with the contents.

I am Priscillah Nduku Mutua, a student at the Machakos University, School of Education (Kenya). In partial fulfilment of the requirements for the award of Doctor of Philosophy Degree (PhD) in Education, I am conducting a research entitled *“Competence Based Education and Training and Employability of Visually Impaired Learners in Technical and Vocational Education and Training Institutions in Kenya.”*

If you agree to take part in this study, you are asked to complete the attached questionnaire. The questionnaire includes a set of statements in relation to the CBET teaching modalities. Your participation is purely on voluntary basis and you are free to drop out of the study at any point without any subsequent victimization.

Your identity during the study will remain anonymous and it will not be revealed at any stage of the study. Results of this study will be disseminated through various means including conference presentations and publishing in journals.

In case of any clarifications, feel free to contact the researcher: (Priscillah N. Mutua: Mobile No: 0723502952, Email: priscimutua@yahoo.com).

I will highly appreciate if you will spare some time from your busy schedule to fill in the questionnaire.

Study Participants' Declaration

Kindly tick (✓) in the box against each of the following statements if you are in agreement

- i) I have read and understood the above statements regarding the study entitled “Competence based education and training and employability of visually impaired learners in technical and vocational education and training institutions in Kenya”.
- ii) I do understand that I am free to ask any questions in case I need clarifications, using the contact provided
- iii) I have been informed that my participation in the study is on voluntary basis and there will be no victimization in case I opt to drop out from the study at any point
- iv) I understand that anonymity will be used throughout the study and all the information I will avail will be used for the study purposes only
- v) I permit the study findings to be disseminated professionally through various academic means
- vi) I permit that the researcher would take notes of any contents during data collection
- vii) I freely and voluntarily agree to participate in the study.

Study participants' signature..... Date.....

Principal researchers' signature..... Date.....

Part I: Demographic Information

1. Gender

(i) Male []

(ii) Female []

2. Age:

(i) 30 years and below []

(ii) 31 to 40years []

(iii) 41 to 50years []

(iv) Above 50years []

3. What is your highest academic qualification?

(i) Masters []

(ii) Bachelors []

(iii) Diploma []

(iv) Others

(specify).....

4. Years of experience as a trainer

(i) 1 -5 years []

(ii) 6 -10 years []

(iii) 11 – 15 years []

(iv) More than 16 years []

Part II: CBET Curriculum

5. Have you undergone any special training to equip you with requisite knowledge and skills to effectively implement the CBET curriculum?

(i) Yes []

(ii) No []

6. Explain your response to question 5 above

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7. Using a scale of **1=Strongly Disagree to 5=Strongly Agree**, kindly rate your opinion in relation to the following statements on the applicability of CBET curriculum in relation to employability of visually impaired graduates

| | CBET Curriculum | Strongly Disagree | Disagree | Neutral | Agree | Strongly Agree |
|----|--|--------------------------|-----------------|----------------|--------------|-----------------------|
| 1. | The time allowed for theory classes is adequate | | | | | |
| 2. | The practical time allocated is adequate | | | | | |
| 3. | There are adequate resources to implement the theory lessons | | | | | |
| 4. | There are adequate resources to teach the practical lessons | | | | | |
| 5. | Strategies used to deliver the CBET curriculum content to the learners meet the required standards | | | | | |
| 6. | The CBET curriculum is adequate to prepare the graduates for the job market | | | | | |
| 7. | The assessment process used in the curriculum meet the required standards | | | | | |
| 8. | The curriculum is adapted to meet visually impaired learners needs. | | | | | |

8. What are your comments on acquisition of competencies by visually impaired learners as stipulated in CBET curriculum in the following areas;

a) Basic competencies

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b) Common competencies

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c) Core competencies

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9. According to CBET curriculum, in each training unit a learner is supposed to have a minimum of three (3) to a maximum of five (5) elements of core competencies before he / she is declared as competent. Do visually impaired learners meet this requirement?

(i) Yes []

(ii) No []

If no, how do you ensure that they meet this requirement?

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10. In your opinion, what areas that need improvement in regard to CBET curriculum and employability of visually impaired graduates?

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Part III: State of Facilities

11. Using a scale of **1=Strongly Disagree to 5=Strongly Agree**, kindly rate your opinion in relation to the following statements on state of facilities in the institute.

| | State of Facilities | Strongly Disagree | Disagree | Neutral | Agree | Strongly Agree |
|----|--|--------------------------|-----------------|----------------|--------------|-----------------------|
| 1. | There are adequate teaching /learning materials to implement the theory content of CBET curriculum. | | | | | |
| 2. | There are adequate training equipment and tools in the workshops for use during practical lesson. | | | | | |
| 3. | The teaching materials, training equipment and tools have been adapted to meet the needs of the visually impaired. | | | | | |
| 4. | The workshops within the institute are adequate for training visually impaired learners. | | | | | |
| 5. | The institute’s workshops are well ventilated and have enough space for easy training of visually impaired learners. | | | | | |
| 6. | The institution environment is least restrictive for the visually impaired learners. | | | | | |
| 7. | The training equipment are regularly serviced and maintained. | | | | | |

12. How many learners do you have during a practical lesson?

(i) 25 and below []

(ii) More than 25 []

(iii) Any other (specify)

.....

13. What is your comment on the utilization of facilities by visually impaired learners in the institute?

.....

14. Are the training equipment and tools used for training visually impaired learners similar with those used in various workplaces?

(i) To a great extend []

(ii) Somehow []

(iii)Not at all []

15. What are your suggestions on the areas of improvement of facilities in the institute towards acquisition of employable skills to visually impaired learners?

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Part IV: Trainers’ Competencies on CBET

16. To what extent do you agree or disagree with the following statements on trainers’ competencies in implementing CBET in this institute.

| | Trainer's Competencies | Strongly Disagree | Disagree | Neutral | Agree | Strongly Agree |
|---|---|--------------------------|-----------------|----------------|--------------|-----------------------|
| 1 | My department has adequate trainers to implement the CBET curriculum. | | | | | |
| 2 | I am trained on the implementation of the CBET curriculum. | | | | | |
| 3 | I am well conversant with the CBET curriculum and its implementation strategies. | | | | | |
| 4 | I have attended seminars to update my knowledge and skills on the CBET curriculum implementation approaches. | | | | | |
| 5 | The seminars I attended equipped me with the requisite knowledge and skills to implement the CBET curriculum. | | | | | |
| 6 | My years of experience as a trainer have perfected my skills. | | | | | |
| 7 | I always strive to ensure that the learners meet their learning requirements as per the CBET curriculum. | | | | | |

17. In your opinion, how does your qualification and training as a trainer impact the acquisition of employability skills among visually impaired learners?

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Part V: Occupational Standards

18. This section seeks to assess the role of occupational standards on the link between competence based education and training approach and employability of visually impaired graduates. State your level of agreement or disagreement with the following statements on occupational standards.

| | | Strongly Disagree | Disagree | Neutral | Agree | Strongly Agree |
|----|--|-------------------|----------|---------|-------|----------------|
| | Occupational Standards | | | | | |
| 1. | The needs of visually impaired learners are always considered when developing occupational standards which guide the skills taught in TVET institutions. | | | | | |
| 2. | The adaptability of equipment and facilities in meeting the needs of visually impaired learners is considered when developing occupational standards which guide the skills taught in TVET institutions. | | | | | |
| 3. | The framework for implementing occupational standards touching on the needs of visually impaired learners in TVET institutions is adequate. | | | | | |
| 4. | All the relevant stakeholders are actively involved when developing occupational standards for skills taught in TVET institutions. | | | | | |

19. In your opinion, what are the major occupational standards that affect the effectiveness of CBET approach in enhancing the employability of visually impaired graduates from TVET institutions?

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Part VI: Industry Linkage

20. State your level of agreement or disagreement with the following statements on the role of industry linkage in the link between competence-based education and training approach and employability of visually impaired graduates from TVET institutions.

| | Industry Linkage | Strongly Disagree | Disagree | Neutral | Agree | Strongly Agree |
|---|---|--------------------------|-----------------|----------------|--------------|-----------------------|
| 1 | The institute actively collabourates with various actors in diverse sectors to secure internships, attachments and part-timework opportunities for their visually impaired learners. | | | | | |
| 2 | The institute collabourates with various industry partners who offer in-kind support such as donation of equipment, student scholarships, teaching grants for the visually impaired learners. | | | | | |
| 3 | There is continuous involvement of industry partners in the curriculum development process within TVET institutions so that the curriculum matches industry expectations. | | | | | |
| 4 | The institute supports the placement of staff by industry to the institute as part-time professors, visiting professors, and executives in residence. | | | | | |
| 5 | The institute continually engages accredited industry experts to provide career guidance and counselling to their visually impaired learners. | | | | | |
| 6 | The institute prioritizes partnerships with industries that use tools and equipment similar to those used when training the visually impaired learners within the institute | | | | | |

21. How has industry linkage affected the effectiveness of CBET approach in enhancing the employability of visually impaired graduates from TVET institutions?

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Part VII: Employability Skills Acquired by Visually Impaired Graduates

22. To what extent do you agree that the implementation of the CBET approach of teaching in this institute has equipped the visually impaired graduates with the following skills to enable them compete effectively in the job market;

| | | Strongly Disagree | Disagree | Neutral | Agree | Strongly Agree |
|-----|---|-------------------|----------|---------|-------|----------------|
| | Employability Skills | | | | | |
| 1. | Basic skills (reading, writing, listening, speaking, mathematics) | | | | | |
| 2. | Thinking skills (creative thinking, effective decision making, problem solving, reasoning skills, ability to learn) Intercultural Skills (working with people from diverse backgrounds) | | | | | |
| 3. | Personal qualities (taking responsibility for actions, goal oriented, friendly, open, honest, meeting customer demands). | | | | | |
| 4. | Integrity (honest, sound moral character and values) | | | | | |
| 5. | Resource management (identifying, organizing, planning, and allocating resources; prioritizing; time and project management) | | | | | |
| 6. | Interpersonal skills (working well with others as a team, openness to diversity, excellent customer service skills) | | | | | |
| 7. | Systems management (understand and effectively work with social, organizational, and technological systems) | | | | | |
| 8. | Technology use (working with computers and other technology, selecting right tools, equipment, hardware, and software for a job, and application of knowledge to tasks) | | | | | |
| 9. | Adaptability (ability to adapt to changing work environments) | | | | | |
| 10. | Work ethics (performing the assigned duties according to the laid down regulation, ability to design/make needed customer items within the set time) | | | | | |
| 11. | Professionalism (acting in a responsible manner, maturity, self- confidence) | | | | | |

Part VIII: Employment Rate of Visually Impaired Graduates

23. As an institution, do you do follow up to ascertain the number of visually impaired graduates who secure jobs?

(i) Yes []

(ii) No []

If yes, how many are;

- (i) Self-employed []
- (ii) Employed by the government []
- (iii) Employed in companies []
- (iv) Any other form of employment (Specify)

.....

24. To what extent do you agree or disagree with the following statements pertaining to the employment rates of visually impaired graduates from this institution.

| | Employment Rates of Visually Impaired Graduates | Strongly Disagree | Disagree | Neutral | Agree | Strongly Agree |
|----|--|--------------------------|-----------------|----------------|--------------|-----------------------|
| 1. | The number of visually impaired graduates from this institution that have secured has increased significantly since the adoption of CBET approach. | | | | | |
| 2. | The ability of visually impaired graduates to take up competitive jobs without discrimination has increased significantly since the adoption of CBET approach. | | | | | |
| 3. | The ability of visually impaired graduates to secure diverse jobs/forms of employment has increased significantly since the adoption of CBET approach. | | | | | |
| 4. | Visually impaired graduates from this institution are highly satisfied with their current sources of income since the adoption of CBET approach. | | | | | |

25. As a trainer, what are your comments regarding CBET approach used in TVET institutions and employability of visually impaired graduates?

.....

- End -

Thank you for your cooperation

Appendix IV: MOE Officials' Semi-Structured Interview Schedule

MOE Officials' Consent Form

Instructions:

Kindly read the following statements and sign the form as an indicator of your acceptance to participate in the study, if you agree with the contents.

I am Priscillah Nduku Mutua, a student at the Machakos University, School of Education (Kenya). In partial fulfillment of the requirements for the award of Doctor of Philosophy Degree (PhD) in Education, I am conducting a research entitled *“Competence Based Education and Training and Employability of Visually Impaired Learners in Technical and Vocational Education and Training Institutions in Kenya.”*

If you agree to take part in this study, you are asked to complete the attached questionnaire. The questionnaire includes a set of statements in relation to the CBET teaching modalities. Your participation is purely on voluntary basis and you are free to drop out of the study at any point without any subsequent victimization.

Your identity during the study will remain anonymous and it will not be revealed at any stage of the study. Results of this study will be disseminated through various means including conference presentations and publishing in journals.

In case of any clarifications, feel free to contact the researcher: (Priscillah N. Mutua: Mobile No: 0723502952, Email: priscimutua@yahoo.com).

I will highly appreciate if you will spare some time from your busy schedule to fill in the questionnaire.

Study participants' declaration

Kindly tick (✓) in the box against each of the following statements if you are in agreement

- i. I have read and understood the above statements regarding the study entitled “Competence based education and training and employability of visually impaired learners in technical and vocational education and training institutions in Kenya”.
- ii. I do understand that I am free to ask any questions in case I need clarifications, using the contact provided
- iii. I have been informed that my participation in the study is on voluntary basis and there will be no victimization in case I opt to drop out from the study at any point
- iv. I understand that anonymity will be used throughout the study and all the information I will avail will be used for the study purposes only
- v. I permit the study findings to be disseminated professionally through various academic means
- vi. I permit that the researcher would take notes of any contents during data collection
- vii. I freely and voluntarily agree to participate in the study.

Study participants' signature..... Date.....

Principal researchers' signature..... Date.....

Part I: Demographic Information

- 1. What is your gender?
 - (i) Male []
 - (ii) Female []

- 2. What is your age bracket?
 - (i) 30 years and below []
 - (ii) 31 to 40years []
 - (iii) 41 to 50years []
 - (iv) Above 50years []

- 3. What is your highest academic qualification?
 - (i) MED []
 - (ii) BED []
 - (iii) Diploma []
 - (iv) Any other, specify

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- 4. How long have you served in the MOE?
 - (i) 1 -5 years []
 - (ii) 6 -10 years []
 - (iii) 11 – 15vyears []
 - (iv) More than 15years []

Part II: Information on CBET Curriculum

- 5. CBET is one of the TVET reforms that the Ministry is implementing. What areas does it focus on?

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6. During piloting, were special TVET institutions sampled?

(i) Yes []

(ii) No []

If Yes, which ones?

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If No, how will the special needs training concerns be addressed in terms of CBET implementation?

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7. What efforts have you made to ensure that skills being taught to visually impaired trainees are in line with the industry demands?

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Part III: State of Facilities within TVET Institutions

8. Has the government allocated funds to enhance facilities in TVET institutions?

(i) Yes [] (ii) No []

If yes, are they

(i) Adequate [] (ii) Inadequate []

9. How often does the government release funds for maintenance of the facilities in TVET institutions?

(i) Yearly []

(ii) Quarterly []

(iii) As per need []

10. In the table below, indicate the state of facilities in the TVET institutions.

| Facilities | Inadequate | Adequate | Excess |
|-----------------------------|------------|----------|--------|
| | 1 | 2 | 3 |
| Workshops | | | |
| Training equipment | | | |
| Teaching/learning resources | | | |
| Training tools | | | |

11. How does the above state of facilities in TVET institutions affect implementation of CBET?

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12. Are the facilities mentioned in question 10 above adapted for use by visually impaired learners?

- (i) Yes []
- (ii) No []

If No; how has this affected their training on CBET?

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13. What would you advise the Government on the adaptability of facilities for visually impaired trainees in TVET institutions?

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Part IV: Trainers' Competencies on CBET

14. In your opinion, are the trainers in TVET institutions competent to teach CBET to visually impaired learners?

- (i) Yes []
- (ii) No []

If No, explain

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.....

If Yes in 14, how often do the trainers attend seminars /workshops?

- (i) Once per month []
- (ii) Once per term []
- (iii) Once per year []
- (iv) Any other,

specify.....

Part V: Employment Rate of Visually Impaired Graduates

14. How many visually impaired graduates have been;

- (i) Employed by government []
- (ii) Employed by private sector []
- (iii) Un-employed []
- (iv) Any other []

Specify.....

- End-

Thank you for your cooperation

Appendix V: Ministry of Labour Officials' Semi-Structured Interview Schedule

MOL Officials' Consent Form

Instructions:

Kindly read the following statements and sign the form as an indicator of your acceptance to participate in the study, if you agree with the contents.

I am Priscillah Nduku Mutua, a student at the Machakos University, School of Education (Kenya). In partial fulfillment of the requirements for the award of Doctor of Philosophy Degree (PhD) in Education, I am conducting a research entitled *“Competence Based Education and Training and Employability of Visually Impaired Learners in Technical and Vocational Education and Training Institutions in Kenya.”*

If you agree to take part in this study, you are asked to complete the attached questionnaire. The questionnaire includes a set of statements in relation to the CBET teaching modalities. Your participation is purely on voluntary basis and you are free to drop out of the study at any point without any subsequent victimization.

Your identity during the study will remain anonymous and it will not be revealed at any stage of the study. Results of this study will be disseminated through various means including conference presentations and publishing in journals.

In case of any clarifications, feel free to contact the researcher (Priscillah N. Mutua: Mobile No: 0723502952, Email: priscimutua@yahoo.com).

I will highly appreciate if you will spare some time from your busy schedule to fill in the questionnaire.

Study Participants' Declaration

Kindly tick (✓) in the box against each of the following statements if you are in agreement

- i. I have read and understood the above statements regarding the study entitled “Competence based education and training and employability of visually impaired learners in technical and vocational education and training institutions in Kenya”.
- ii. I do understand that I am free to ask any questions in case I need clarifications, using the contact provided
- iii. I have been informed that my participation in the study is on voluntary basis and there will be no victimization in case I opt to drop out from the study at any point
- iv. I understand that anonymity will be used throughout the study and all the information I will avail will be used for the study purposes only
- v. I permit the study findings to be disseminated professionally through various academic means
- vi. I permit that the researcher would take notes of any contents during data collection
- vii. I freely and voluntarily agree to participate in the study.

Study participants' signature..... Date.....

Researchers' signature..... Date.....

Part I: Demographic Information

1. Gender

- (i) Male []
- (ii) Female []

2. Age:

- (i) 30 years and below []
- (ii) 31 to 40years []
- (iii) 41 to 50years []
- (iv) Above 50years []

3. What is your highest academic qualification?

- (i) Masters []
- (ii) Bachelors []
- (iii) Diploma []
- (iv) Others

(specify).....

4. How long have you served in the MOL?

- (i) 1 -5 years []
- (ii) 6 -10 years []
- (iii) 11 – 15vyears []
- (iv) More than 15years []

Part II: Development of Occupational Standards

5. Is the Ministry of Labour involved in development of occupational standards for skills taught in TVET institutions?

- (i) Yes []
- (ii) No []

6. If yes in 5, what role does the ministry play in the process?

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7. Does the ministry consider the needs of visually impaired learners when developing these occupational standards for skills taught in TVET institutions?

(i) Yes []

(ii) No []

8. If yes in 7, what are the major needs of the visually impaired learners that have been considered?

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9. If yes in 7, has the ministry provided the framework for implementing occupational standards touching on the needs of visually impaired learners in TVET institutions?

i. Yes []

ii. No []

Explain your answer in 9 above

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10. If yes in 9, is the framework available adequate?

(i) Yes []

(ii) No []

Explain your answer

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Part II: Employment of Visually Impaired Graduates

10. According to your survey, how many visually impaired graduates from TVET institutions have secured any form of employment since 2015?

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11. Expound your answer in 10 in terms of the types of employment accessed

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12. Please rate the competences of the employed graduates

- (i) Very competent []
- (ii) Competent []
- (iii) Fairly competent []
- (iv) Not yet competent []

13. As the Ministry of Labour, do you have mechanisms to ensure that visually impaired graduates from TVET institutions are employed without discrimination as per the Constitution of Kenya 2010?

- (i) Yes []
- (ii) No []

14. If Yes which criteria do you use during recruitment?

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.....

15. As a ministry, do you ensure that working environment for visually impaired employees is least restrictive as per the Special Needs Education Policy (2018)?

- (i) Yes []
- (ii) No []

16. If yes explain the precautions given for conducive working environments

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- End-

Thank you for your cooperation

Appendix VI: Interview Schedule for Visually Impaired Graduates

Consent Form for the Visually Impaired Graduates

Instructions:

Kindly read the following statements and sign the form as an indicator of your acceptance to participate in the study, if you agree with the contents.

I am Priscillah Nduku Mutua, a student at the Machakos University, School of Education (Kenya). In partial fulfillment of the requirements for the award of Doctor of Philosophy Degree (PhD) in Education, I am conducting a research entitled *“Competence Based Education and Training and Employability of Visually Impaired Learners in Technical and Vocational Education and Training Institutions in Kenya.”*

If you agree to take part in this study, you are asked to complete the attached questionnaire. The questionnaire includes a set of statements in relation to the CBET teaching modalities. Your participation is purely on voluntary basis and you are free to drop out of the study at any point without any subsequent victimization.

Your identity during the study will remain anonymous and it will not be revealed at any stage of the study. Results of this study will be disseminated through various means including conference presentations and publishing in journals.

In case of any clarifications, feel free to contact the researcher: (Priscillah N. Mutua: Mobile No: 0723502952, Email: priscimutua@yahoo.com).

I will highly appreciate if you will spare some time from your busy schedule to fill in the questionnaire.

Study Participants' Declaration

Kindly tick (√) in the box against each of the following statements if you are in agreement

- i. I have read and understood the above statements regarding the study entitled “Competence based education and training and employability of visually impaired learners in technical and vocational education and training institutions in Kenya”.
- ii. I do understand that I am free to ask any questions in case I need clarifications, using the contact provided
- iii. I have been informed that my participation in the study is on voluntary basis and there will be no victimization in case I opt to drop out from the study at any point
- iv. I understand that anonymity will be used throughout the study and all the information I will avail will be used for the study purposes only
- v. I permit the study findings to be disseminated professionally through various academic means
- vi. I permit that the researcher would take notes of any contents during data collection
- vii. I freely and voluntarily agree to participate in the study.

Study participants' signature..... Date.....

Principal researchers' signature..... Date.....

1. What is your age (Years)?
 - i. Below 18 years []
 - ii. 18-22 years []
 - iii. 23-27 years []
 - iv. 28-32 years []
 - v. 33 years and above []

2. If your response is “yes” to question 5 above, comment on its usefulness in preparing you for the job market?

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3. Do you think CBET which is the current training approach in TVET prepares visually impaired adequately for the job market?

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4. Comment on your response on question 7 above in relation to;

- a. Knowledge imparted through CBET approach.

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- b. Skills acquired through CBET approach

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5. What are your suggestions for improvement regarding the linkage between CBET approach and employability of graduates?

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6. What is your opinion on adequacy of facilities in your former institution in preparation for the job market?

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7. How suitable were the facilities on training visually impaired learners on preparation for job market in relation to;

a. Training equipment and tools

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b. Resource Materials

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c. Workshops

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8. How related are the training equipment and tools used while training and the ones used in work place?

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9. How knowledgeable were the trainers in imparting skills to you using CBET approach?

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10. What type of employment are you engaged in?

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11. How many years have you worked since graduating?

.....

12. What challenges are you facing in the employment industry as a visually impaired person in relation to;

a. Market for your products

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.....
.....

b. Your work place

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.....
.....
.....

Are you satisfied with the current source of income?

Comment on your response to question 17 above

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13. What are your comments on the effect of CBET on employability of visually impaired graduates?

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Thank you for your participation

Appendix VII: Managers/Employers' Interview Schedule

Consent Form for the Managers/Employers of the Visually Impaired Graduates

I am a student at Machakos University (Kenya). I am carrying out a research study in fulfillment for the award of Doctor of Philosophy Degree (PhD) in education entitled **“Competence Based Education and Training (CBET) and employability of visually impaired learners in technical and vocational education and training institutions in Kenya”**. The purpose of the study is to determine whether the competence based education and training approach influence employment opportunities among the visually impaired graduates in Kenya. Being one of the employers of the visually impaired graduates who have been trained using the CBET curriculum, you have been identified as one of the key informants in this study. Your participation is voluntary and there are no direct benefits attached to this participation. The discussion will take about 30 minutes and there will be no identifications used in any documentation during the proceedings. Information gathered will only be accessible to the researcher/ research assistants. Feel free to share any information in relation to this study since utmost confidentiality will be upheld and the data collected will be used for study purposes only. During the discussions, information will be recorded and also the researcher will make some notes but these are all meant to be used for the study purpose only, hence there should be no cause for any anxiety.

In case of any clarifications, please feel free to contact the researcher; (Priscilla N. Mutua: Mobile No: 0723502952, Email: priscimutua@yahoo.com)

Declaration

The nature of the study and its process has been clearly explained to me, and hence I voluntarily accept to participate.

Key informant's signature..... Date.....

Researcher's signature..... Date

MANAGERS/EMPLOYERS CBET INTERVIEW SCHEDULE

1. What is your age (in years)?
2. How many years have you been running this institution/ company?
3. How many visually impaired persons have you employed in your institution /company?
4. Do you feel that the visually impaired graduates from TVET institutions have the requisite knowledge and skills to work effectively in your company/ institution? Explain your answer
5. To what extent do you think that the training strategies at TVET institutions adequately prepare the visually impaired graduates for the job market?
6. From your interaction with the visually impaired graduates from TVET institutions, do you think that there is need to modify the training approaches? (explain)
7. What are your feelings towards employing visually impaired persons from TVET institutions compared to the sighted persons, for a given job position? (explain your response)
8. Do you feel that the structures in your company/ institution are adequate to promote a good working environment for the persons with visual impairment? (explain)

Thank you for your participation

Appendix VIII: Civil Society Groups Interview Schedule

Consent Form for the Civil Society Groups

I am a student at Machakos University (Kenya). I am carrying out a research study in fulfillment for the award of Doctor of Philosophy Degree (PhD) in education entitled **“Competence Based Education and Training (CBET) and Employability of Visually Impaired Learners in Technical and Vocational Education and Training Institutions in Kenya”**. The purpose of the study is to determine whether the competence based education and training approach influence employment opportunities among the visually impaired graduates in Kenya. Being one of the societies that influence the plight and policy making for the visually impaired persons, you have been identified as one of the key informants in this study. Your participation is voluntary and there are no direct benefits attached to this participation.

The discussion will take about 30 minutes and there will be no identifications used in any documentation during the proceedings. Information gathered will only be accessible to the researcher/ research assistants. Feel free to share any information in relation to this study since utmost confidentiality will be upheld and the data collected will be used for study purposes only. During the discussions, information will be recorded and also the researcher will make some notes but these are all made to be used for the study purpose only, hence there should be no cause for any anxiety.

In case of any clarifications, please feel free to contact the researcher; (Priscilla N. Mutua: Mobile No: 0723502952, Email: priscimutua@yahoo.com)

Declaration

The nature of the study and its process has been clearly explained to me, and hence I voluntarily accept to participate.

Key informant’s signature..... Date

Researcher’s signature..... Date

1. Are you conversant with Curriculum Based Education and Training approach in training?
2. What are your comments regarding Curriculum Based Education and Training and its application in job market by visually impaired graduates?
3. Which role do you play as far as employment of persons with disabilities specifically the visually impaired is concerned?
4. How many graduates with visual impairment are self-employed or are employed by private or government sectors?
5. Which role do you play to ensure visually impaired graduates with relevant skills are employed without discrimination?
6. How is the working environment for the visually impaired employees; both physically and socially?
7. What is your opinion regarding increase of employment opportunities for visually impaired graduates with relevant skills required in job market in the past five year?
8. To what extent has the special needs policy of 2018 improved inclusivity in the society?

Thank you for your participation

Appendix IX: Researcher Observation Schedule

Observation Checklist

(a) TRAINING INSTITUTIONS

(Tick appropriately)

| Learning facilities in the institution | Not Available | Available | Remarks |
|--|----------------------|------------------|----------------|
| Class rooms with the necessary teaching aids | | | |
| Workshops with adequate space to accommodate the learners in a given session | | | |
| Training equipment (in good working condition and well serviced) | | | |
| Ramps and rails for easy movement | | | |
| Safe pavements | | | |
| Training tools (in good working condition) | | | |
| Well-equipped first aid kit | | | |
| Emergency equipment (e.g. fire extinguishers) | | | |
| Modified curricula | | | |
| Adapted tools and equipment | | | |

(b) **WORK PLACE**

(Tick appropriately)

| Facilities in the work place | Not Available | Available | Remarks |
|---------------------------------------|----------------------|------------------|----------------|
| Working machines | | | |
| Adapted equipment and tools | | | |
| Least restrictive working environment | | | |

a) **Application of skills acquired in CBET by visually impaired graduates in work place**

i) **ICT Graduates**

| Skills | Competent | Not yet competent |
|--|------------------|--------------------------|
| Performance of basic computer operations | | |
| Typing documents | | |
| Manipulating numerical data | | |
| Ability to use key board shortcuts | | |
| Browse/ access internet services | | |
| Develop presentations | | |
| Ability to do tasks in Microsoft publisher | | |
| Ability to do tasks in Microsoft access | | |
| Design soft wares – Auto CAD, Arch, CAD | | |
| Design financial software – Pastel, sage | | |

(ii) **Carpentry Graduates**

| Skills | Competent | Not yet competent |
|--|------------------|--------------------------|
| Sand papering – numbers 2,1 and 0 | | |
| Planing of timber and smoothening | | |
| Cutting pieces of timber | | |
| Take measurements of pieces of timber | | |
| Hanging of the doors | | |
| Making timber items- stools, beds, chairs among others | | |

17. Leather technology graduates

| Skills | Competent | Not yet competent |
|--|-----------|-------------------|
| Repairing work- patching, fitting of outsole, shoe shining and stitching the outsole | | |
| Mending – lasting new shoe and fitting of outsole | | |
| Leather work – assembling of cardholders and stitching | | |

18. Knitting Graduates

| Skills | Competent | Not yet competent |
|---|-----------|-------------------|
| Knitting plain articles | | |
| Knitting articles with manual patterns | | |
| Knitting articles with tuck patterns | | |
| Knitting articles with knit - in patterns | | |
| Joining knitted articles | | |

19. Massage graduates

| Skills | Competent | Not yet competent |
|--------------------------------|-----------|-------------------|
| Ability to do shoulder massage | | |
| Ability to do head massage | | |
| Ability to do feet massage | | |
| Ability to do fingers massage | | |

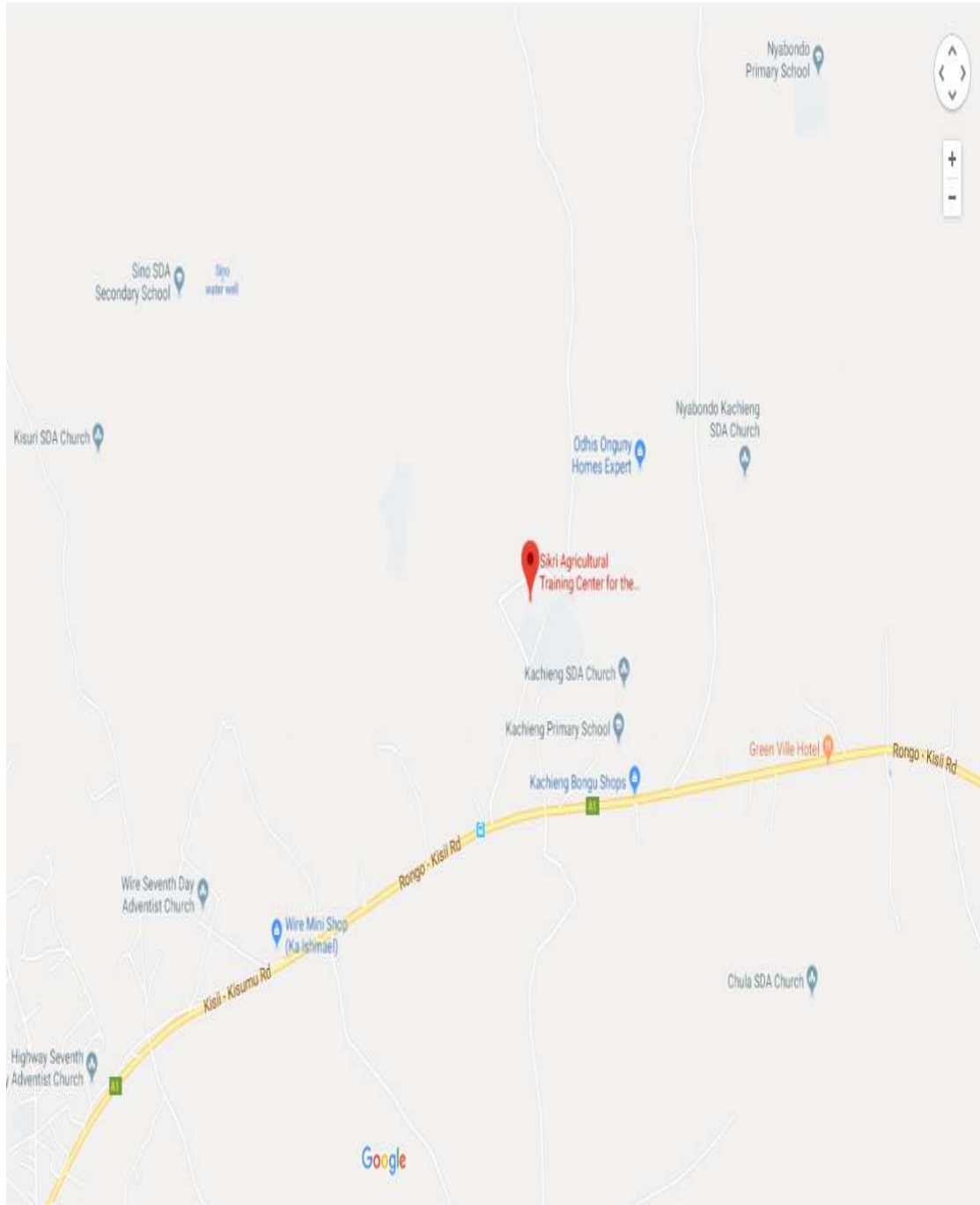
20. Building and Civil Engineering graduates

| Skills | Competent | Not yet competent |
|---|-----------|-------------------|
| Prepare and interpret technical drawings | | |
| Execute site preliminary works | | |
| Manage construction materials, plant, tools and equipment | | |
| Execute substructure works | | |
| Execute superstructure works | | |
| Apply workshop technology practices | | |

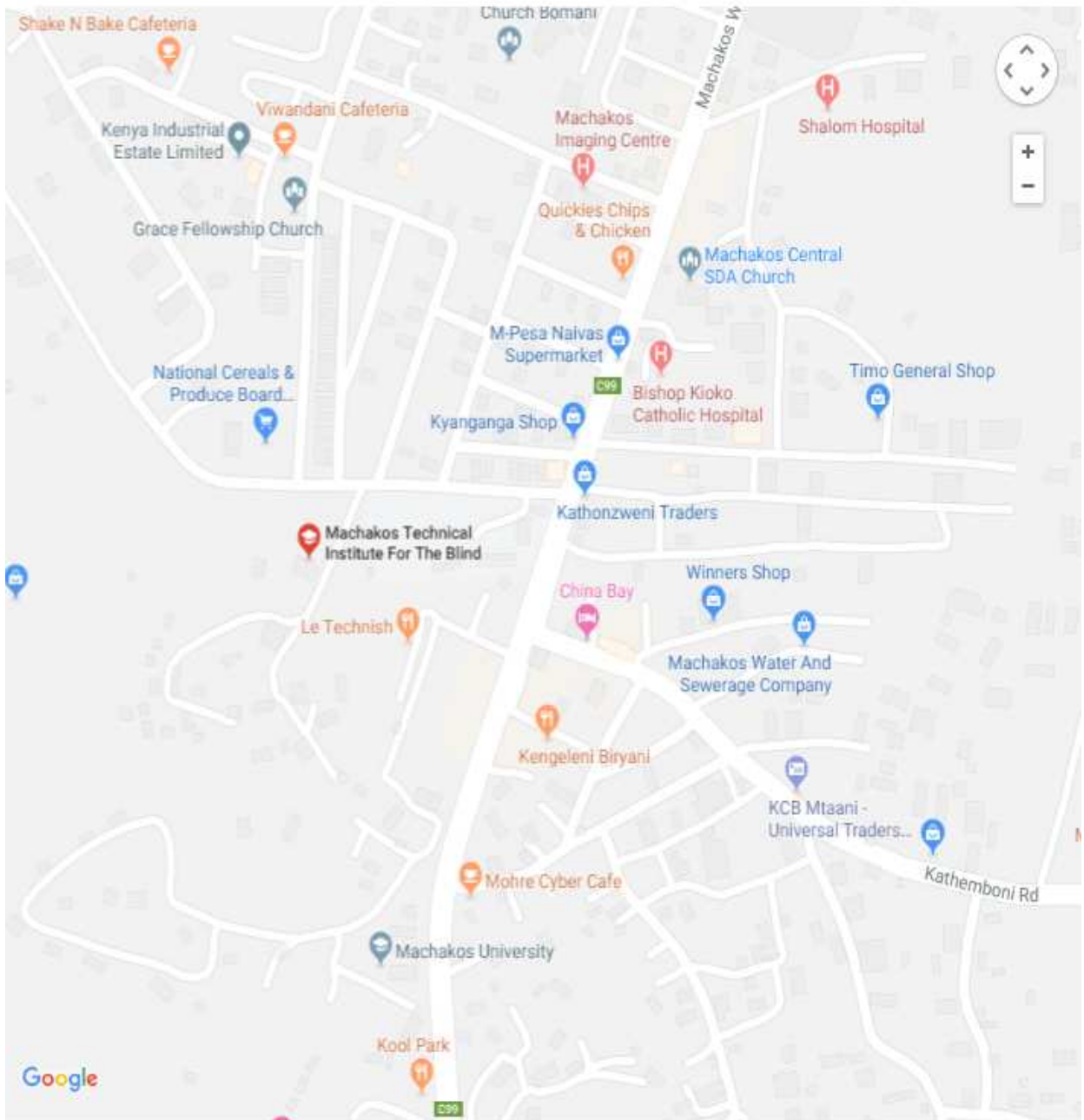
b) Observation of finished products made by visually impaired graduate at work place

| Items | Good quality | Fair quality | Bad quality |
|------------------|---------------------|---------------------|--------------------|
| Knitted articles | | | |
| Leather articles | | | |
| Wooden articles | | | |
| Woven articles | | | |

Appendix X: Map Showing SIKRI Technical Training Institute for The Deaf-Blind



Appendix XI: Map Showing Machakos Technical Institute for the Blind



Appendix XII : Clearance Letter From Graduate School



**MACHAKOS UNIVERSITY
OFFICE OF THE DEAN GRADUATE SCHOOL**

Telephone:254-00735247939, (0)723805929 P.O.Box 136-90100
Email:graduateschool@mksu.ac.ke Machakos
website:www.machakosuniversity.ac.ke KENYA

REF.MKsU/GS/SS/O12/VOL.1

20th May, 2019

The Director
National Commission for Science, Technology and Innovation
P.O. Box 30623
NAIROBI

Dear Sir,

RE: PRISCILLAH NDUKU MUTUA– E83/7351/2016

The above named is a PhD student in the second year of study and has cleared her course work. The University has cleared her to conduct research entitled: “Competence Based Education and Training and employability of visually impaired learners in technical and vocational education and training institutions in Kenya”.

Kindly assist her with a research permit in order to undertake the research.

Thank you.

A handwritten signature in black ink, appearing to read 'Kimiti'.



DR. KIMITI RICHARD PETER, PhD
AG. DEAN GRADUATE SCHOOL
KRP/gdm



ISO 9001:2015 CertifiedSoaring Heights in Transforming Industry and Economy

Appendix XIII: Research Authorization



NATIONAL COMMISSION FOR SCIENCE, TECHNOLOGY AND INNOVATION

Telephone: +254-20-2213471,
2241349, 3310571, 2219420
Fax: +254-20-318245, 318249
Email: dg@nacosti.go.ke
Website: www.nacosti.go.ke
When replying please quote

NACOSTI, Upper Kabete
Off Waiyaki Way
P.O. Box 30623-00100
NAIROBI-KENYA

Ref. No. **NACOSTI/P/19/4049/31090**

Date: **27th June, 2019.**

Priscillah Nduku Mutua
Machakos University
P.O. BOX 136-90100
MACHAKOS.

RE: RESEARCH AUTHORIZATION

Following your application for authority to carry out research on *“Competence based education and training and employability of visual impaired learners in technical and vocational education and training institutions in Kenya.”* I am pleased to inform you that you have been authorized to undertake research in **Kisumu and Machakos Counties** for the period ending **24th June, 2020.**

You are advised to report to **the County Commissioners, and the County Directors of Education, Kisumu and Machakos Counties** before embarking on the research project.

Kindly note that, as an applicant who has been licensed under the Science, Technology and Innovation Act, 2013 to conduct research in Kenya, you shall deposit **a copy** of the final research report to the Commission within **one year** of completion. The soft copy of the same should be submitted through the Online Research Information System.


DR. ROY B. MUGHRA, PhD.
FOR: DIRECTOR-GENERAL/CEO

Copy to:

The County Commissioner
Kisumu County.

The County Director of Education
Kisumu County.

National Commission for Science, Technology and Innovation is ISO9001:2008 Certified

Appendix XIV: Research Permit

Permit No : MACOSTIP/19/4049/31090
Date Of Issue : 27th June, 2019
Fee Received :Ksh 2000

THIS IS TO CERTIFY THAT:
MS. PRISCILLA NDUKU MUTUA
of MACHAKOS UNIVERSITY, 2392-90100
conduct research in Kisumu , Machakos
Counties
on the topic: COMPETENCE BASED
EDUCATION AND TRAINING AND
EMPLOYABILITY OF VISUAL IMPAIRED
LEARNERS IN TECHNICAL AND
VOCATIONAL EDUCATION AND TRAINING
INSTITUTIONS IN KENYA.

for the period ending:
24th June,2020

.....
Applicant's
Signature



Director General
National Commission for Science,
Technology & Innovation