

**EFFICACY OF TECHNICAL VOCATIONAL EDUCATION AND TRAINING IN
REALIZING SUSTAINABLE DEVELOPMENT IN KENYA: A PRAGMATIC
APPROACH**

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**A Thesis Submitted in Partial Fulfillment of the requirement for the award of the
Degree of Masters of Education in Philosophy of Education of Masinde Muliro
University of Science and Technology**

November, 2025

DECLARATION

This thesis is my original work and has not been presented for a degree in any other University or any other award.

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CERTIFICATION

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DEDICATION

This work is dedicated to the Fwenjos' family. You are resilient and visionary for a better tomorrow.

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ABSTRACT

UNESCO, World Bank and different countries including Kenya have placed education and training as a central tool towards youth employability and realization of the industrialization agenda. Despite the dying industries and increase in demand for employability skill in training, TVET graduates have inadequate employability skills. The study was tasked to investigate the efficacy of Technical Education in Kenya towards attaining Sustainable Development in the light of pragmatic theory as postulated by John Dewey. The research objectives were to: Examine the objectives of TVET in Kenya in light of pragmatic theory towards lifelong learning, assess lived experiences of Principals and Industrial Liaison Officers on TVET practices linking training and industry towards attaining trainee empowerment and establish how Dewey's concepts of democracy can facilitate TVET in Kenya to realize Sustainable Development. The study sought to answer the following research questions: what are the objectives of TVET in Kenya in light of pragmatic theory towards lifelong learning, what lived experiences of principals and Industrial Liaison Officers on TVET practices linking training and industry towards attaining trainee empowerment and how can Dewey's concepts of democracy facilitate TVET in Kenya towards realizing Sustainable Development. The study used constructivism paradigm and a philosophical design that adopted Philosophical analysis and synthesis methods for objectives one and three. Hermeneutic phenomenology was adopted in collecting and analyzing the lived experiences of Principals and ILOs. Both Primary sources and secondary sources were used. Finally, the synthesis method was adopted to establish the applicability of Dewey's democratic concept in TVET institutions towards attaining trainee empowerment. Data analysis was done through thematic analysis and Interpretive Phenomenological analysis. The findings revealed that TVET is committed in training for skill development, social efficiency and democratic participation however skill development has been overemphasized. In objective two, the study found out that the shared lived experiences of both Principals and ILOs are industrial collaboration and institutional hubs and dual training is vital in reinventing TVET for attaining lifelong learning among TVET graduates. In the third objective, the study established that Dewey's Democratic concept can facilitate TVET in realizing Sustainable development through learner centered training and collaborations. The study recommends promotion of holistic competency training, promotion of dual training in institutional hubs and industry and finally, explicitly embrace adopt democratic concept in CBET implementation towards attaining Sustainable Development.

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OPERATIONAL DEFINITION OF TERMS

TVET: A formal kind of training carried out in the National polytechnics, Technical and Vocational colleges and vocational Centres with an aim of imparting knowledge, skills and attitudes for lifelong learning.

Pragmatic approach: This is a perspective in philosophy that aims at creativity, inclusivity, interaction and continuous learning. It achieves all these through a work integrated mode of educational and training that adopt problems and offers solutions to them.

Sustainable Development: This is an ideal state of life that reflects effective use of technical skill, knowledge and attitudes for lifelong learning geared towards inclusivity, employability, creativity and innovation for trainee and socio-economic development

CBET: A form of training that accumulates relevant skills, knowledge and attitudes towards providing solutions to existing problems either epistemological or in reality using problem solving approach. It allows trainees discover inner potentials by hands on training and minimal exams.

Lived experiences: These are views or perspectives of Principals and Industrial Liaison Officers on the nature of the integrated form of learning in relation to industrial needs. These views are personal and are as a result of gained knowledge over time as they try to shape curriculum and training towards attaining a mutual relationship between industry and training institutions.

ACRONYMS AND ABBREVIATIONS

| | |
|---------------|---|
| AIE | African Indigenous Education |
| CBET | Competency Based Education and Training |
| CDACC | Curriculum Development Assessment and Certification Council |
| EFA | Education For All |
| ILOs | Industrial Liaison Officers |
| ILO | International Labour Organization |
| KATTI | Kenya Association of Technical Training Institutions |
| KCPE | Kenya Certificate of Primary Education |
| KCSE | Kenya Certificate of Secondary Education |
| KNEC | Kenya National Examination Council |
| MDGs | Millennium Development Goals |
| SDGs | Sustainable Development Goals |
| TTIs | Technical Training Institutes |
| TVET | Technical Vocational Education and Training |
| TVETA | Technical Vocational and Entrepreneurship Training Authority |
| UNESCO | United Nations Educational Scientific and Cultural Organization |

CHAPTER ONE

INTRODUCTION

1.1 Introduction

In this chapter the highlight of the plan of the whole research is set out. This includes: background to the study, the statement of the problem, the main and specific objectives, research questions, significance and justification of the study and the organizational structure of the study.

1.2 Background of the study

Globally, Sustainable development (SD) paves way as a means towards mitigating social, economic and environmental challenges of development. Education and training have been taken as prerequisite for sustainable development globally (UN, 2021). However, UNESCO identifies that reaching and teaching sustainability is a dominant challenge each institution has to work with. In an attempt to realize this dream, UNESCO proposes integration of Education for Sustainable Development in every education level and greening TVET towards availing relevant skills, attitudes and knowledge for national development (UNESCO, 2012). Thus, lifelong learning has become an explicit or implicit ideal of either general or technical education for majority of the states that adopt a humanistic approach in training (Cronholm, 2021; Guven, 2020).

The convention on Technical and Vocational Education (1989) article 2(1) identifies TVET as a level of training additional to general education that is responsible of giving trainees required skills, attitudes and knowledge related to occupations towards self-empowerment and lifelong learning (Darol *et al*, 2020). TVET being a major supplier of workforce that facilitates implementation of development, there is need for adopting a holistic approach in education training that links training and labour markets (Hanushek

et al, 2017), inclusive and aligned to the Sustainable Development Goals (SDGs) (Muigua, 2020) and achieve national development agenda and vision (Ikenga, 2022).

In 2015, with the launch of the Sustainable Development Goals (SDGs) the revised goals of TVET read: to empower individuals and promote employment, decent work and lifelong learning, to promote inclusive and sustainable economic growth, to promote social equity and finally to promote environmental sustainability (Paryono, 2017).

Globally, each country has adopted its own approach in training its citizens towards sustainability (UNESCO, 2020). However, two TVET models that adopt formal sector firm based and non-formal training interested the study;

The German model is the most advanced and outstanding model that adopts a shared responsibility in training of its citizens among the stakeholders and levels of government (Wang, 2011). Training is dual since the companies and vocational centres share in the training session of the skill development plan (Solomon,2016). In addition, the curriculum formulation and assessment are moderated by the educators and industrial practitioners hence making the system labour market popular (Osawa *et al*, 2023). This system demands strong stakeholder collaboration and adequate funding policy. This model cannot be easily applicable in developing nations due to the internal efficiencies of the technical training centres and the limited industries (Afeti, 2018).

Japanese model consists of vocational tracks in regular schools and enterprise – based training. Vocational education is built on strong links between the educators and the employers. The employer prefers to recruit general education graduates in order to train them for lifetime within their premises thus enhances production. Japan Industrial and Vocational Training Association (JIVTA) is the main organ that is concerned with placement of trainees within the enterprises and place strict requirements on the enterprises to facilitate required skills for the enterprise (Wang, 2011).

In Africa, according to Ahadzie (2003), social, economic and political conditions in African countries have made TVET systems in Africa to be different. However, apprenticeship has a long tradition in Africa and this can be traced in African Indigenous Education (AIE) (Ahadzie, 2003). The influence of western industrialization and in company approaches in technical training has had significant impact in Africa TVET systems (African Union, 2007). However the growth of industry in Africa has greatly relied on the first class and G 8 Countries in terms of funding and even operations (Allais, 2020). According to Kerre (2017) TVET has a great role in changing Africa's pathy towards development despite the challenges of under resourcing, low image and insufficient training of TVET teachers among others.

Despite the challenge of funding (Onwusa, 2021), mismatch in training (Kigwilu *et al*, 2016), and unpreparedness in handling Competency Based Education and Training (Osawa *et al.*, 2023, Musau, 2023), African states have adopted a Competency Based Education and Training (CBET) to facilitate development in the context of the national needs of each country (AU, 2018). According to Tambwe (2019) Tanzania adopted CBET and the major challenge has been demotivated trainers Some states have adopted apprenticeship approach while others in company approach (Allais, 2020). Therefore, the combination of apprenticeship and in company approaches can lead to standardization and formalization towards a sound TVET that can facilitate national and sustainable development (Palmer, 2020).

In Kenya, according to Kisirkoi (2019) the acts of parliament and commissions of inquiry contributed in the modeling of TVET system in Kenya. Sessional paper no 10 of 1965 on African socialism and its application to planning in Kenya aimed at alleviation poverty, hunger and disease (GOK,1964) while the Ndegwa's Commission (1970)

recommended expansion of TVET in general education and also creation of post-secondary institutions (GOK, 1976).

The presidential party on the second university in Kenya recommended the establishment of Moi University, expansion of vocational education to train the increased numbers of school leavers and finally enrich school curricula with technical subjects (GOK, 1981).

The presidential party on education and manpower training for the next decade and beyond focused on education financing, quality and relevance and the major objective was to enrich the curriculum with technical subjects towards providing vital skills for self-reliance (GOK, 1988). The above commissions tasked the education system to adopt education for self-reliance modeled as 8.4.4 and technical subjects in the curriculum towards providing skills for the world of work. TVET institutions on the other hand were not prepared towards attaining the goal due to the challenge of funding, resources and equipment (Osawa *et al*, 2023).

The Sessional paper no 1 of 2012 on a reformation of Education, Training and research places TVET as a key element to provide access, quality and relevant skills to the youth for Kenya's development agenda. In line with this paper, the Constitution of Kenya 2010 places education and training as a right for every Kenyan citizen thus education and training is for all (GOK, 2010).

These policies have had effect on enrolment (Kamar, 2022), resource allocation (Arunga, 2018) and even curriculum implementation in TVET thus causing internal inefficiency in Technical Training Institutions (Okinyi et al., 2021), weak monitoring and evaluation of TVET system heavily supply driven rather than demand driven (Onsumu et al 2009) with a low image and stigmatization (Osunyani 2014). Despite the above, political goodwill has facilitated TVET curriculum towards empowering youths towards employability and lifelong learning by embracing competency training (GOK, 2018).

Competency education and training has raised concerns among scholars in terms of the cost ((Odada & Kariuki, 2023) preparedness(Osawa *et al.*, 2023) and reality indicates few institutions have presented trainees for summative assessment and attained competent status for the world of work demands and produce demand compliant graduates(Federation of Kenya Employers,2023).The few that have presented, there is still a gap between the required skill and what the industry is demanding this is evidenced by the still skyrocketing unemployment rates (Musau,2023).The study, therefore is tasked to assess whether Dewey's educational thought can provide a sound foundation for CBET implementation in Kenya towards availing lifelong learning among trainees to fix the training industry gap that exist at the moment.

1.3 Statement of the Problem

Technical and Vocational Education and Training (TVET) has been viewed by society as the most important agent of empowering trainees in employability skill, knowledge and attitudes towards lifelong learning. The government of Kenya through policy framework and funding has tried to reinvent and position training to produce a skilled human resource that is relevant to the society and vast with knowledge, skills and attitudes towards realizing its development agenda.

Related literature has hinted that there exist a skills mismatch between training and industry. The mismatch is as a result of inadequate, poorly motivated, unskilled trainers, obsolete nature of training equipment, difference in training equipment with the ones used in industry, limited industrial involvement in training due to a rigid policy framework. The study therefore is tasked examine the efficacy of TVET in realizing Sustainable Development in Kenya in light of pragmatic thought.

1.4 Objectives of the study

The Specific objectives of the study were to:

- i) Examine the objectives of TVET in Kenya in light of pragmatic theory towards lifelong learning.
- ii) Assess the lived experiences of the principals and Industrial Liaison officers on TVET practices linking training and industry towards attaining the Trainee empowerment
- iii) Establish how the Dewey's concept of democracy can facilitate TVET in Kenya towards realizing Sustainable Development

1.5 Research Questions

The study sought to answer the following research questions:

- i) What are the objectives of TVET in Kenya in light of pragmatic theory towards lifelong leaning?
- ii) What are the lived experiences of the Principals and Industrial Liaison Officers on TVET practices linking training and industry towards realizing Trainee empowerment?
- iii) How can Dewey's concept of democracy facilitate TVET in Kenya towards attaining Sustainable development?

1.6 Justification of the study

The pragmatic theory of education was developed in America by John Dewey and his colleagues. Therefore, there is need to assess the extent to which it can be applied to the Kenyan context. The Ministry of Education, State Department of Vocation and Technical Training and TVET institutions involved in training the young for world of work require a philosophical underpinning and orientation that grounds the education and training approaches. This study therefore is a contribution towards meeting this need. This study was a contribution to the philosophical discourse on skill development for trainee and societal development, and also encouraged further research in Philosophy and TVET, Sustainable Development and Philosophy of Education. The study explored the tenets of a functional pedagogy in TVET institutions in light of Dewey's Theory towards lifelong learning and finally examined how Dewey's theory can facilitate TVET in Kenya in attaining lifelong learning.

1.7 Significance of the Study

The findings of the study have both theoretical and practical implications for the future Technical and vocational education practitioners. Theoretically, the study is a contribution to the advancement of knowledge about technical education and vocational training in relation to lifelong learning among Kenyan youths. The study also informs the link between training and labour market and mechanisms by which pragmatic theory can shape future training towards training for demand and not supply for labor market.

The practical significance of the study may guide TVET practitioners in improving strategies for implementing education and training in technical institutions toward trainee empowerment. For the State Department of VTT, the study shall guide policy formulation aimed at linking training and industry. On the other hand, curriculum developer will benefit greatly by the insights of the study towards reorienting the curriculum towards lifelong learning. And finally, the study shall form basis onto which other studies in TVET can develop their research.

1.8 Scope

The study used a qualitative approach and thus used both primary and secondary sources of data. Primary data for objective two was sought through a phenomenological field study that qualitatively sought to assess the lived experiences of Principals and ILOs on TVET practices linking training and industry towards attaining the Trainee empowerment in the TVET institutions in Western Region. This region has Kakamega Vihiga, Busia and Bungoma Counties with rich in diversity of young and old technical institutions. The study only sampled institutions that have existed for more than five years and have started implementing CBET curriculum.

1.9 Assumptions of the study

The study was carried out basing on the following assumptions:

- i) That educational theory is indispensable in guiding any effective technical education and training system towards realizing lifelong learning.
- ii) That there is no explicitly and clearly articulated educational theory for Technical Education and Training in Kenya to guide problem solving approaches towards attaining sustainable development.

- iii) That absence of clear, comprehensive, explicitly stated and shared educational theory may lead to ineffective implementation of problem-based approaches in TVET institutions towards student empowerment for lifelong learning.
- iv) That John Dewey's experiential learning theory provides a viable theoretical perspective that can enlighten TVET in Kenya towards realizing sustainable development.
- v) All technical training institutions are implementing CBET and have prepared a network with the industry.

1.10 Limitation of the study

There is a dearth of literature on TVET and sustainable development in Kenya with respect to incorporation of Dewey's education theory towards lifelong learning. The study adopted Phenomenological method in sourcing lived experiences from Principals and Industrial liaison officers to assess the nature of the link between training and industry in promoting skilling for lifelong learning thus correcting mismatch.

The study adopted a constructive paradigm with philosophical methods. Hermeneutic phenomenological method used very small sample size which do not objectively facilitate absolute generalization. The study used saturation degree as guided by Interpretive phenomenological analysis literature. The study focused on the depth of the data collected not the breadth, therefore, the researcher adopted semi structured Interviews as data collection instruments. Language barrier could have been a limitation during interviewees however; the researcher purposively sampled the Principals and ILOs who double up as trainers in the same institutions and are vast in the English language.

1.11 Theoretical framework

The study adopted pragmatic theory. This theory is also known as pragmatism, vocationalism or progressivism theory (Cordeiro, 2020). According to Yamauchi *et al* (2017) a theoretical framework is an essential component of research that shapes the quality and scope of investigations. It facilitates the making sense of observations by providing an overarching structure of the studies (Yamauchi *et al*, 2017).

1.11.1 Proponents of pragmatism

This theory was proposed by Charles Sandres Pierce (1839-1914), developed by William James (1842-1910) and applied in education, social political situations by John Dewey (1859-1952) with his instrumentalism that warranted assertibility by solving societal

problems. Other proponents include George Herbert Mead (1863-1931) who applied pragmatic theory in social psychology and Richard Rorty (1931-2007) a neo pragmatist who treated pragmatism as a critical and therapeutic philosophical project and truth as what is useful to a community (Mugambi and Chepkonga,2022).

The word pragmatism originates from the Greek word “Pragma” which means activity (Jia, 2005). Thus, the spirit of pragmatism is to emphasize what is practical, efficient, fruitful and satisfying. Pragmatic thought holds that one view is judged to be true and another false based on the consequences within human experience (Kaur, 2019).

A pragmatic approach is concerned with human experiences as human beings encounter or face dynamic situations that require reflective action towards positive change (Kalolo, 2015). In education for instance, since change is inevitable, there is need to revise the goals of education, teaching methods, role of the teacher, curriculum and finally the content for effective training.

According to King (2022), pragmatism is an epistemological approach and methodological approach in verifying what works(truth). This study therefore focuses on education providing working solution to existing problems in the society.

Newton *et al* (2020) analyzed pragmatic evidence- based Higher Education as a useful way forward and recommended that educators to embrace practical and skill base curriculum implementation, increase funding in order to facilitate construction of conducive learning environment (workshops and laboratories) and employing competent resource in training.

According to Lin *et al* (2023), the study on influence of Dewey's pragmatism in Chinese education system revealed that democratization of education, learners' participation and students' exposure to society and nature has increased innovations.

According to Adeleye (2017) implications of pragmatic thought in Nigerian schools reveal that a shift from teacher centered curriculum oriented approach in training has limited student interaction with real life situations and environment thus adoption of a student centered approach and participatory learning. In addition, Sulyman and Oliniyi (2023) study on the influence of pragmatism in teacher education in Nigeria found out that Dewey's pragmatic theory has greatly facilitated science and Technology in providing solutions to problems of individuals and society for instance, rape, murder and unemployment.

Anita *et al* (2023) study on use of pragmatic approach in teaching speaking skills for Vocational high school students found out that the approach enables students to practice interpersonal, communication, innovative skills and incorporating language theories into real life. According to Rai and Lama (2020) a literature review on pragmatism and its contributions in Indian education system found out that the theory is relevant in Indian education system and the key influence lies in the idea of practical learning, engagement of real life and participatory learning.

Firmanto *et al* (2019), study on pragmatism as a philosophy of John Dewey's Education: Role and Position in learning information literacy in Indonesia, found out that Dewey's theory is relevant in learning information literacy however, it poses a threat because it never considers the substance behind reality but tends to be at the level of practical science to solve problems faced by human beings.

In Kenya, study carried out by Mbehero *et al* (2022) on the analysis of the core competencies of CBC in light of pragmatic theory found out that Competency Based Training in Kenya can only be implemented effectively when teachers are well vast in the Dewey’s education thought on adoption of learners’ interests while planning for learning activities and provision of conducive environment. In addition, Mugambi and Chepkonga (2022) study on application of pragmatism to CBC in Kenya from a philosophical perspective opines that education in CBC classes in Kenya can be made more meaningful by considering prior experiences of learners and their interests. The above studies are only carried out on general education and higher education. The study being academic research aimed at establishing how the democratic concept can facilitate TVET in Kenya towards attaining Sustainable development by identifying possible aspects of democratic concept in CBET implementation and assess whether they can reinvent TVET towards realizing Sustainable Development in Kenya.

This is summarized in Fig. 1

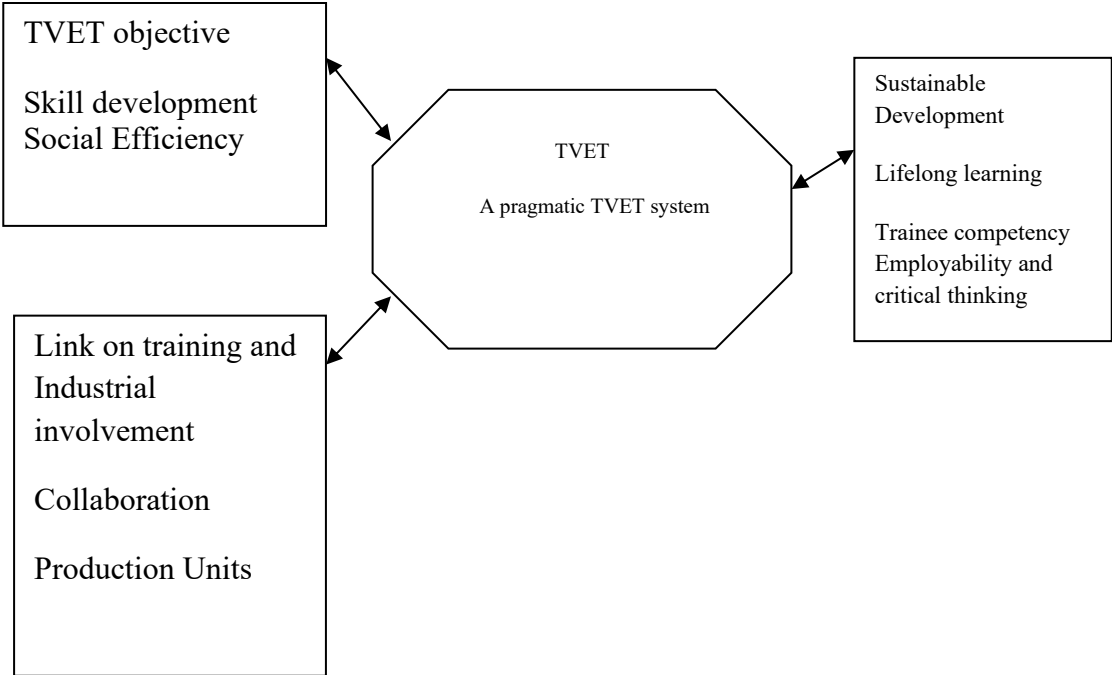


Figure 1: Pragmatic Technical Vocational Education and Training

CHAPTER TWO

LITERATURE REVIEW

2.0 Introduction

This chapter presents the related literature review according to objectives of the study. Factoring the objectives of TVET in Kenya, Pragmatism, TVET Practices linking training and TVET, and finally Dewey's concept of democracy and sustainable development as variables. After each objective, a related review summary is given to identify the gaps that facilitated the study to be carried out.

2.1 Related literature review on Objectives of TVET in the light of pragmatic theory towards lifelong learning

Literature review in this section was reviewed based on the potential objectives of education and training in Kenya towards attaining lifelong learning. According to Njoroge and Bennars (1990), the dimensions of education and training are skill development, cognitive, psychomotor and character development. Guided by these dimensions related literature was reviewed by adopting the following subsections: Trainee skill development, inclusivity, apprenticeship, stakeholder engagement and competency skilling.

2.1.1 Trainee Skill Development

Skill development is an objective that has been overemphasized since inception of TVET as an engine of the development agenda of developing nations (International Labour Organization, 2019). A skill therefore is an acquired trait that enable one to perform specific work or trade in the line of study (Allais, 2020). Skills are diverse in nature for instance, employability skills, technical skills, lifelong learning skills competency skills (Guyen, 2020).

Table 1. indicates different levels of institutions offering TVET. The Technical and Vocational Colleges, National Polytechnics, and Technical Universities have distinct specialized areas and skills they train on.

Table 1: Number of TVET institutions by category, 2017-2021

| Category | 2017 | 2018 | 2019 | 2020 | 2021 |
|--|-------|-------|-------|-------|-------|
| Public Vocational Training Centres (VTC) | 899 | 982 | 1,149 | 1,156 | 1,156 |
| Private Vocational Training Centres | 47 | 47 | 47 | 83 | 88 |
| Public Technical and Vocational Colleges (TVC) | 91 | 101 | 191 | 230 | 255 |
| Private Technical and Vocational Colleges | 627 | 628 | 742 | 820 | 885 |
| National Polytechnics | 10 | 10 | 10 | 11 | 11 |
| Kenya School of TVET formerly KTTC | 1 | 1 | 1 | 1 | 1 |
| Total | 1,962 | 1,769 | 2,140 | 2,301 | 2,396 |

Source: Economic survey (2022)

From the government reports, the urge for Kenya to realize a skilled labour force started at independence and thus skill development has been central in education and training (Republic of Kenya, 1964). In light of the Ominde report skill development was to help Kenya as a nation solve hunger, disease and poverty. The human aspect of skilling is towards social economic development of country (Shinga et al., 2021).

Industry plays a crucial role in training and skilling and it is the role TVET institutions to facilitate linkages, placement and even assessment of trainees on the skill relevant in the industry (Rufai et al, 2013).

The setting of the institution can also contribute to the skilling and thus exposure to the global world (Darol et al., 2020). Difference in rural and urban setting demand a variety of skills from the trainees and sometimes exposure to the skills can be facilitated by trainers or the nature of training equipment order to achieve uniformity and quality skills (Agrawal, 2014).

Skill development among trainees has not been smooth due to the fact that trainers are unskilled, demotivated, incompetent, inadequate and incapacitated to handle technical courses (Chepkoech et al, 2021). On the other hand, Dawo & Sika (2021) observe that management of TVET institutions have also contributed in the skill development for the world of work.

Contributions of different stakeholders in skilling has been observed however, a phenomenon has been observed in the policy orientation of developing nations that there is a skills mismatch (Federation of Kenya Employers, 2023). The skills that are being trained in technical institutions are at variance with the industry's expectations (Khatete & Chepkoech, 2018).Some scholars have collectively opined that the government has not done much in reinventing TVET in skill delivery in terms of curriculum modification, equipment and modernizing training environment, supply of trained and qualified trainers in TVET institutions (Chepkoech *et al*, 2021,Kigwilu *et al*, 2016 ,Changilwa & Akala, 2018).Others have directed this skills variance to unresponsive industries, limited in nature and lack of fruitful partnerships between training and industry (Ondieki *et al*, 2018).

2.1.2 Training for Inclusivity

The principle of inclusivity can be viewed in the following perspectives. First and foremost, as a promotion of education for all (People with Disabilities, Women In Technical Education or increased access to all), secondly education and training from a curriculum level to adopt diverse methodologies that allow every child to be involved in learning. The Salamanca Declaration emphasized the aspect of people with disabilities as key in empowering the whole society for economic development (UNESCO 1994). Whereas, the Dakar declaration education for all on the other hand interrogates how

African states have embraced education for all policies through a legislative process (Dakar, 2000).

In 2015, the member states of the United Nations adopted 20130 agenda for Sustainable Development which includes seventeen Sustainable Development goals to guide in international development effort between 2016 to 2030. Goal 4 of the SDGs calls upon member states to ensure inclusive and equitable quality education and promote lifelong learning opportunities for all. In target 4, all states are committed at all levels of education and vocational training to promote People with disabilities, women and youth empowerment among others toward lifelong learning.

Kenya as member state in the UN has oriented education through different approaches. For instance, girl child empowerment through sanitary pad and 100% transition policy framework by MOE. This has been possible due to the inclusion of a chapter on Bills of rights in the constitution 2010 tasking all members and statutory bodies to implement the inclusion policy. The Economic survey reports (2017-2021), as indicated in Figure 1.1 below, reveals a 250% increase in trainee enrolment in TVET. However, this high enrolment is not matched with the increased recruitment of trainers in TVETs. According to the MoE status report, 2022, the approved enrolment capacity of public TVET institutions under MoE as of December 2022 was 164,388, while the actual enrolment was 318,179, translating to an over-enrolment of 153,791 (93.6%).

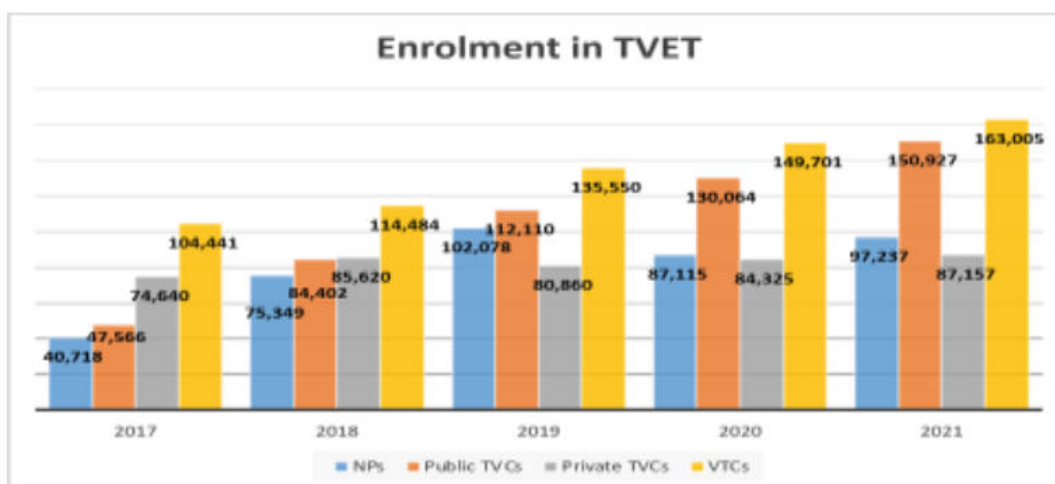


Figure 1: Enrolment in TVET
Source: Economic Survey (2022)

According to the Kenya Constitution 2010, every Kenyan child is entitled to education and training and TVET as one avenue of training every youth has to be facilitated to access this commodity (Republic of Kenya, 2010).

According to Chege & Kariuki (2016) increasing women participation in technical education can only be achieved through ODEL. However, through technical education by gaining short courses that provide skill for production, service and entrepreneurship skill empowerment the increasing student enrolment can also be skilled (Arunga, 2018).

2.1.3 Training as Apprenticeship

Apprenticeship is a form of training that involve taking initiative as a trainee to be trained hands on within the premises of an artisan or company for a longer period (ILO, 2020). Apprenticeship can be distinguished from internship in terms of timeframe and on relationships. First and foremost, this apprenticeship takes a longer duration than internship which takes 3 to 6 months. In addition, training in apprenticeship can be arranged in terms of 50 percent in the instructional college and another 50 percent in the

industry (ILO, 2020). Apprenticeship is coordinated by the industry that offers placement whereas internship is managed by the instructional institution (Haasler, 2020). The key objective in dual training is improving the skill and TVET system in correcting skills mismatch (ILO, 2020).

African countries' appraisal of TVET systems finds that the existing status of TVET systems in Africa varies from country to country, college to college and internship centres. TVET being a means towards effective training of the workforce for economic development each state is pumping resources in it towards addressing labour and mismatches at world work (Onwusa, 2021).

Some states in Africa like Nigeria have prioritized education and training by putting in place strategies to revitalize TVET towards lifelong learning by placing emphasis on trainee empowerment and skill promotion (Afeti, 2018). However, there are several challenges that hinder Nigeria's TVET from handling unemployment and skill mismatch for instance: Infrastructure, human resource challenge, fixed curriculum, low TVET image just to mention but a few (Onwusa, 2021). According to Ikenga (2022) to curb these challenges adopting a holistic approach in training by bringing on board the private and public agencies in offering internship to polish skills has offered a possible solution or by adopting a Competency-Based Training that focuses on the key competencies required in world of work.

In Kenya, apprenticeship has been equated to the *jua-kali* industry and the role this industry is doing to education and training in offering real life training and providing a social role in creating jobs for the graduates is enormous (Republic of Kenya, 2021). However, policy documents observe that there are skills that need to be tapped from industry and equally, there is need for certification of men and women in the

industry who by chance former rigid curriculum did not offer opportunity to do so (Republic of Kenya,, 2019).

2.1.4 Training for Competency and world of work

The growth of technical education in Kenya is traced as early as 1963 at the independence 7-4-3-2 system, the 8.4.4 system and Competency Based Education and Training (CBET) (Republic of Kenya, 2019). Since independence, through commissions, Task forces and Ministerial reports educations at all levels has been reorienting its curriculum implementation approaches to deliver specific traits needed for individual training empowerment in terms of skills, attitudes and knowledge and finally the service delivery in the job market thus building a strong economic work force. According to GOK (2007), education in Kenya was meant to preserve and transmit societal norms and values to the upcoming generation thus a conservative approach to education.

The Kenya Education commission (1964) called Ominde Commission was appointed to survey existing education resources and advice government on the formulation of national policies for education. Using Ominde's terms of reference the country education agenda was to address national unity and cohesion, trained a skilled workforce to replace the colonial regime. A critical analysis indicate that conservative theory played a crucial role in orienting education and training but it reveals a limitation of education philosophy to domesticate the goals, aims and objectives of education (GOK,1964).

Bearing in mind that manpower survey ought to have influenced training, the report was very cautious in expanding TVET since excessive expansion could cause unemployment and thus waste and frustrate human resource (Sifuna, 2020). According to Sifuna (2020) policy framework demanded for a skill survey and data base, course formulation and

diversification to train resource that was relevant to offering necessary skills for the country's development agenda.

The glorification of white-collar jobs made many to escape manual and arduous kind of training and thus the commission downplayed the value of practical and creative subjects towards restructuring of the colonial system of education to offer projections towards an expanded education system that values theory and practice (Dawo and Sika ,2021).

The second commission was called the Gachathi commission (1976) with the increased youths who had been prepared for the white-collar jobs, unemployment among the youths was a real phenomenon and thus government required to assess the situation through a commission to reorient training towards employability. The Gachathi commission had the following Terms of reference; to review education and prepare objectives and policies to be adopted for the second decade of Kenya's independence in the attempt to assess the relationship needs, existing facilities and cost of education (GOK,1976).

To find ways of eliminating the white-collar job syndrome, Gachathi proposed the initiation of production units at training level to facilitate hands on skills.

“Production oriented education and training would mean the installation of production units at education and training institutions in which items would be made under conditions which stimulate real occupations in which students will eventually be productively self-employed” (GOK,1976).

The Mackey Commission report was established in 1981.It is the famous commission that scrapped off A level 7-4-2-3 to adopt 8.4.4 system. The Terms of Reference of the commission were: to prepare detailed plans and recommendations on the establishment

of the second university in Kenya and facilitate change of the education system to 8.4.4 (GOK, 1981).

A practical oriented curriculum was design to accommodate technical subjects at all levels of training. The practical orientation was to avail innovation skills to trainees toward self-reliance and technological advancement of the country (Mackatian *et al*, 2016). The commission overemphasized higher education above any other level of training with the establishment of the second university in the country (Republic of Kenya, 1981). With the lack of technical vocational teachers, the Technical schools were prioritized as centres of self-reliance and skilling centres which later became Technical training institutes (Sifuna, 2020).

The overemphasis of university education created a view that TVET institutions are of low cadre and some were grabbed to be made full fledge universities for instance Western College of Science and Technology, Kimathi institute currently Dedan Kimathi University and Muranga Institutes currently Muranga University ,Kenya Polytechnic currently Technical University of Kenya, Mombasa Polytechnic currently Technical University of Mombasa and Kenya Communications College-Kenya Multimedia University (Sifuna, 2020).This trend contributed in the low image in Kenya and degrading of technical education towards production of sufficient human resource for attaining Kenya's development agenda (Changilwa & Akala, 2018).

The Kamunge Commission (1989) report was chaired by Kamunge and at this time the county was facing a great challenge of increased levels of unemployment. The terms of reference were: to review national education and training for the next decade and beyond. In addition, strengthen technical and vocational education and training in Kenya. It is at this level that Harambee institutes (Institutes of science and Technology) were set up to

adopt failures of the 8.4.4 system and drop outs of primary and secondary levels (Sifuna, 2020).

The Koech Commission (1999) as other commissions had its terms of reference that were meant to guide education and training. They include: to review education system and recommend ways and means of enabling it to facilitate national unity; To recommend a possible programme of action to alleviate government from financial constraints. Education system adopted quota system in provincial schools and discriminated students and at the same time hindering national unity. According to Sifuna (2020) this commission contributed in the low financing of TVET institutions despite absorbing the high number of Kenya Certificate of Secondary Education (KCSE) graduates.

The Odhiambo commission established in 2011 with its terms of reference as to analyze the implications of the new Constitution on education and training; to undertake needs assessment gaps in relation to curriculum delivery process and finally to review educational training research to conform to new education. This commission gave rise to the Sessional paper no. 1 of 2012 prioritizing reforms in education and the TVET ACT 2013 (GOK, 2012).

According to the TVET Act 2013, TVET in Kenya is offered in Three levels: Technical universities, Technical Vocational Colleges (TVCS) and Vocational Training Centres (VTCs). These institutions are meant to promote acquisition of skills to the trainees for the labour market and the government has to improve the infrastructure, rebrand and reposition TVET due to its negative perception (Musyimi, 2021). Some of the activities to improve access and participation include: establishment of a printing and publishing unit in TVET, conduct TVET fairs and Technology contests and TVET institutions to offer relevant course (Khatete & Chepkoech, 2018). This has increased enrolment in

TVET and thus caused constraints on resources and delivery of TVET curriculum towards effective skilling for the world of work(Kamar,2022). The common elements in the above curricula include:

2.1.5 Trainee Cognitive Development

According to Nasaina (2018) Plato (427-347 BC) is the first philosopher to appreciate the role of the human mind in contemplating the ideal. Plato's understanding of the forms as ultimate truth tasked him to categorize knowledge as both particular and universal based on the methods of acquisition. In addition, sensual knowledge acquired through sense and wisdom acquired through contemplation facilitate an individual towards the ideal truth. The quest for achieving objectives of education and training is within two major rifts: theory and practice. According to Sande (2021) the concepts of change of curriculum and static use of existing curriculum contribute to the creation and generation of knowledge for the societal use through innovations and research.

According to Aristotle (384-322) creativity can be achieved through bodily training, character formation and intellectual training (Koji, 2012). In exploiting the principles of causality, act and potency Aristotle opines that nature is knowable through observation and cataloguing of phenomena Aristotle's theory thus is applicative and interpretive since it is open to diversified environments and settings in education (Koji, 2012). In addition, the overemphasis on intellectual formation of the learner limits education and training towards technical orientation for lifelong learning (Koji, 2012).

Knowledge creation and development in technical education has been pegged on the quality of trainers and their ability to integrate new technologies in the delivery of curriculum to trainees (Chepkoech *et al*, 2021). Cognitive development of learners' mind

improves their ability to create new knowledge, invent items and even share their innovations to the global market (Kintu *et al.*, 2019).

According to Rai & Lama (2020), pragmatic curriculum manifests utility, interest, experience and integration of activity in training. Curriculum should be useful by attending to trainees needs and meet future expectations of life. Stakeholders can be involved in education and training in terms of offering conducive environment for training through placement, construction of learning workshops and even mentorship of trainees and trainers through a provision of an effective curriculum.

The Kenyan CBET curriculum has heavily banked on the industry for the support in preparing training occupational standards, training and even assessment (Miseda and Kitaiinge, 2021). However, industry prioritizes profits and the skilling sector might be suppressed to meet the world of work demands. Industry is yet to declare the degree to which it shall sustain TVET towards providing a skilled resource for lifelong learning and attaining of the Vision 2030.

Secondly, Trainees have priorities that need to be attained and thus ought to be attended to by curriculum and the content given by trainers for the world of work (Langthaler, 2015). Activities involved in training must create interest in terms of conversation, construction, investigation, and creative expression in order to generate new knowledge (Rai, 2020). Knowledge creation is a concept that provides possible solutions to existing problems (Asha Kanwar, 2019).

Competency education and training is a curriculum that incorporates institutional mode of training, recognition of prior learning and dual training approaches in skilling for the world of work (Republic of Kenya, 2021). With an aim of improving trainees' transition

from the colleges to the world of work with requisite skills for lifelong learning (Kithinji, 2022).

According to the CBET policy 2018, the objectives of the CBET are to: Establish occupational standards which can 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 have the confidence of all stakeholders, Promote lifelong learning through progression and transfer ,Encourage individuals to achieve their full potential, Develop attitudes and abilities to respond rapidly to change.

And with this in mind, the policy aims at bringing on board the following ;those currently educated and trained who need to update their competences , individuals from the informal sector , individuals from the formal sector ,the unemployed population , out of school youth ,those with little or no education ,those individuals who are made redundant so that they can learn new competences and those who have retired but who would like to develop new skills and competences (Republic of Kenya,, 2018).

The CBET curriculum aims at educating and training all for the world of work and also empowerment for lifelong learning since the curriculum aims at empowerment of youths and old people in the industry through Recognition of Prior Learning (Republic of Kenya, 2021). In Kenya, the current establishment of trainers in public TVET institutions under the Ministry of Education (MoE) is 6,205, servicing an enrolment of 318,179 trainees, while the recommended ratio of trainer-to trainee in STEM and business-related courses is 1:20 and 1:30 respectively (TVETA, 2021). With regard to TVET, this implies that about 15,022 trainers are required in the country today. There is, therefore, a shortage of 8,817, meaning additional staff are required for effective curriculum implementation. Table 1.2 shows the current trainer-trainee ratios in public TVET institutions under MoE.

Table 2: Trainer-Trainee Ratio in Public TVET Institutions

| Courses | Enrolment as at December 2022 | No of PSCK Trainers | Trainer: trainees Ratio | Recommended Trainer: trainee Ratio | Required PSCK trainers |
|--------------------------|-------------------------------|---------------------|-------------------------|------------------------------------|------------------------|
| Business/Liberal Studies | 53,292 | 956 | 1:74 | 1:30 | 1,777 |
| STEM | 264,887 | 5,249 | 1:50 | 1:20 | 13,245 |
| Total | 318,179 | 6,205 | | | 15,022 |

Source: MoE (2021)

2.1.6 Activity Based Learning

Training methods are essential in attaining critical skills for the world of work. Pragmatism prioritizes action against thought and thus the taught or content recipient is at the center of the training process. Methods that promote learning by doing are task based and are promoted as opposed to rote learning and memorization (Sande, 2021). Experiences in the training process must promote problem solving, purposeful attitude and vocationalisation. The activity-based learning and integration of work-based learning approaches enable diversification of thought and promotion of new way of approaching reality. New attitudes are shaped and discipline is individual trainee acquired as opposed to traditional imposition of rules and codes of conduct. According to Khasawneh, *et al* 2014, Pragmatism is moderately applied in Jordanian schools and this is due to teacher involvement.

2.1.7 Stakeholder Involvement

Education and training as an enterprise that supplies human resource to the world of work demands for the involvement of industrial partners, government and trainers in attaining required. According to Osabwa (2021) government involvement in realigning education theory and practice can positively facilitate curriculum implementation and orientation

of training towards human skilling for the national development agenda. However, education and education has highly been interfered by political parties' manifestos in Kenya and that is why implementation has always been stray and subjective (Mackatian *et al*, 2016).

Industry on the other hand, absorbs skilled human resource as attaches and workforce in specific areas of production. In addition, the preparation of occupational standards provides a platform for assessing demands by the world of work upon which training ought to attain (GOK, 2018).

2.2 Related literature on Lived experiences of Principals and ILOs TVET practice linking training and industry towards attaining trainee empowerment

Since there was dearth in Literature on lived experiences of principals and ILOS on TVET practices linking training and industry towards attaining trainee empowerment, the review for this objective used lived experiences and TVET practices linking training and industry towards empowering trainees to acquire new skills for lifelong learning as key words in identifying gaps for the objective.

According to Eini *et al.*, (2020) the study on lived experiences of 30 youths in Israel vocational schools revealed exploitation and violation by employers and everyday coping strategies by the youths. On the other hand, Ngubane *et al.*, (2022) exploring experiences of 6 TVET graduates in South Africa a case of TVET colleges in Kwazulu-Natal, the study revealed that systematic challenges faced by graduates concern alignment of curriculum with the needs of TVET students from rural areas, college management unaware of seventy of the challenges encountered by students in serving in-service training opportunities the study recommended Policy making and curriculum developers aligning issues and enhance support mechanisms for TVET

Deepthi & Exley (2023) Exploring student experiences of technical and vocational learning in university technical colleges during the pandemic in England, the survey on 252 students during 2019 -2020 academic year revealed those learners lost learning and training opportunities and the need for students to adopt their aspirations and their carrier goals to the new economic circumstances.

According to Jbara (2022) the study on lived experiences of 12 Elementary school principals in Dubai, using phenomenological research design, found out that a 5 step analysis strategy team work,Empatis community and versality emerged as key features influencing the principals in managing the schools. The study according to Kipngetich et al (2025) on workplace experience on quality education in TVET institutions in Kenya, using a descriptive survey found out that inadequate workshops and low academic requirements during recruitment hamper trainee development in TVET institutions and trainee skilling for the world of work. According to Mukhebi *et al* (2024) the phenomenological analysis study on experiences of parents, teachers and students about exam malpractices in Kisii county revealed that exam malpractice is a complex phenomenon and therefore, requires both conventional and non-conventional mechanisms to handle and solve.

According to Bronte (2022) a phenomenological study exploring the lived experiences of women leaders in information technology in Nairobi, found out that women involvement is limited despite constitutional reinforcement of the two third gender rule. According to Nyabuto et al (2022) phenomenological study on experiences of 12 Persons Living with Disabilities (PLWDs) on Governments' poverty alleviation strategies in Transmara West subcounty, Narok county, Kenya found out that dishonest in populating PLWDs has contributed to a minimal disbursement of benefits.

2.2.1 Mentorship

Industrial attachment is a method introduced within training for exposing trainees to the job market before graduation (Leong 2004). Acquisition of skills for development right environment, right tools and equipment for practice and competent supervisors are essential during industrial attachment. Gumbe *et al.*, (2012) on assessment of student's perspectives on Industrial attachment found out that students appreciate the vital role of Industrial attachment in linking theory and practice of the trade course they are doing and improving of curricular content with labour demands.

Despite the challenges of Industrial attachment such as limited placement opportunities in firms, rough and tough working environment in firms, male dominated working environment thus gender biased, high firm expectations, industrial attachment has facilitated acquisition of skill to trainees and at the same time lowered firm's hiring rates during the period of attachment (Motuka & Orodho., 2018). (Musyimi, 2021) recommends the improvement of Technology and equipment in the college to enhance effective and efficiency in hands on training to supplement external companies' effort.

On the challenge of finding attachment places, Owusu *et al.*, (2014) opines that extension of period of attachment can enhance effective search and familiarization of the firm's running activities in order to facilitate easy alignment with specialty of training. In addition, Colleges to facilitate the getting of attachment opportunities through industry college partnerships.

Assessment process during industrial attachment should be objective and linked to the course of study. According to Chinyemba and Bvekerwa (2012) workplace assessment is not competent based and in addition, lack of communication between attachment coordinators and employers on what to be evaluated thus, there in need for reorienting

assessment to competency by communicating the competencies required to the parties concerned and training trainers in handling Competency Based assessment.

Whereas Gumbé *et al* (2012) and Owusu *et al* (2014) looks at students' perspectives on Industrial attachment using the descriptive design methodology in university and polytechnic respectively, Chinyemba and Bvekerwa (2012) analyses assessment of Industrial Attachment issues using descriptive methodology in university, this study shall look at industrial attachment as a pragmatic method of facilitating skill acquisition towards attaining Trainee empowerment

2.2.2 Project Based Learning

According to Blumenfeld *et al.*, 1999, Project based learning is a comprehensive classroom approach that is designed to engage students in the investigation of authentic problems in order to provide authentic solutions to them. In project-based learning, the students take charge of their learning with some degree of independence and responsibility while working on a project, and the teacher's role is that of a facilitator or a coach who assists in enabling students to reach their learning objectives (Thomas, 2000)

Project-based learning involves students working, mostly in teams with others, on a venture or enterprise in real-world environments under the mentorship and guidance of their teachers or other adult facilitators (Mills & Treagust, 2003). Despite the very fact that Project Based Learning is demanding in terms of resources (Blumenfeld, 1999), Project-based learning helps students to acquire problem solving skills in real-life situations, promotes the development of inter-personal communication skills, and students learn how to work in teams, which promotes high-order thinking and reasoning skills (Mills & Treagust, 2003). Further, project based learning promotes in-depth

understanding of the subject matter and its applicability to real-world situations (Blumenfeld et al., 1991)

According to Thomas (2000) further study on this method in terms of its effectiveness in availing skills to the learner is vital to provide strengths and weakness and how to go about them. That is why this study shall critique the PBL in relation to availing skills to trainee in Kenyan Technical Training institutes

2.2.3 Production units

According to Atsu and Awudu (2016), Competency Based Production unit in TVET institutions in Ghana provide an alternative to training, skill empowerment and wealth creation for the Technical Institutes, however, this study found out that they units require measures to block loopholes for misuse of funds, training and collaboration.

Kenya as a third world country identifies the role of Research and Development in state development, the improvement of equipment and workshops in training institutions can be an avenue of reinventing TVET production units in facilitating skilling and improving the skill gap (Musyimi, 2021).

2.2.4 Trade fair, Exhibition and Innovation

Etymologically, Fairs comes from Latin word “Feria” meaning “holiday” as well as “market fair. Whereas “exposition” means “display” or put on a show. The human enterprises, activities, products undertaken with definite reasons to achieve certain results are availed. According to Sasaka (2012) effectiveness of trade shows as a marketing toll is as a result of pressure in organizations to look for a cost-effective marketing strategy.

Innovation is a complex and uncertain, thus continuous participation in evaluating market demand of the innovations should be carried out more often (Pavitt 2003). According to Neven and Kanitz (2014) successful participation of parties in Trade fairs is motivated

by price mix, communication mix, distribution mix and product mix. This hints to us that the existence of trade fairs precedes the motivating factor. Equally participation of TVET institution in Trade fairs in Kenya call for motivating factor and this study shall critic whether such objective is being attained.

In the study of Trade fairs as a knowledge generating avenue Hakon (2009) identifies firms, government agencies, universities, private sector and trade fair organizers as main parties that share on market demands, new technologies and state of their collaboration. In addition, he recommends the use of partnership in order to facilitate funding for new technologies that require enough resource input to attain relevant product.

2.2.5 Trainee empowerment

Education for sustainable development agenda is an educational initiative that has been embraced by many countries in the world, Kenya included. Currently the initiative is driven by the Millennium Development Goals (MDG) and the goals of Education For All (EFA) and Sustainable Development Goals (SDGs) (UN, 2021). The MDG's with direct reference to women education are Goal 2: Achieve universal primary education and Goal 3: Promote gender equality and empower women. On the other hand, the goals for Education For All that are directly centered on women education are: Goal 2: Provide free and compulsory primary education for all and Goal 5: Achieve gender parity by 2005 and gender equality by 2015 (UNESCO, 2003) (Corbett, 2021).

According to Essien and Offiong, (2017) Sustainable development is a development which meets the needs of the present without compromising the gains of future generation. Sustainable development has two sub-concepts – the concept of needs and the idea of limitation. The concept of needs relates to the useful needs of the world's door, to which overriding priority should be given and on the other hand the idea of

limitation imposed by the state of technology and social organization in that the environment's ability to meet present and future needs (Salami, 2013).

According to Maclean *et al.*,(2013), TVET is regarded as a tool for achieving relevant and high-quality education for all (EFA) Education for sustainable development (ESD) and Millennium Development Goals (MDGs). The links of TVET and Sustainable Development as expressed by the Bonn Declaration demanded the addressing of the environmental issues, marginalized groups especially youths and the poor UNESCO-UNEVOC (2004).

According to the defenders of UNESCO, The Incheon Declaration (UNESCO, 2016, p. 28) clearly outlines the possibility of achieving lifelong learning

“Quality education requires relevant teaching and learning methods and content that meet the needs of all learners, taught by well-qualified, trained, adequately remunerated and motivated teachers, using appropriate pedagogical approaches and supported by appropriate information and communication technology (ICT), as well as the creation of safe, healthy, gender-responsive, inclusive and adequately resourced environments that facilitate learning.”

On the other hand, McGrath and Langthaler (2013) observed that among the 17 SDGs with 169 targets to be achieved, Goal 4: Ensure inclusive and Equitable quality education and promote lifelong learning opportunities for all and Goal 8 promote sustained inclusive and sustainable economic growth, full and productive employment and decent work for all as crucial in TVET and SD discussion.

According to AU (2007), there is need for linking TVET and the world of employment however the link has stimulated economic orientation and emphasis of workplace skill in TVET and thus suppressing the growth of soft skills like understanding of the ethics of corruption and bribery and non-cognitive skills of self-worth, confidence and motivation.

In addition, reorienting education towards the Trainee empowerment and big 4 agenda has met several challenges among them: increased dropouts at all levels, limited resources for training, Increased pupil-teacher ratio 1:80 rather than the ideal 1:40. The Trainee empowerment document highlights the role of education and training in empowering the Kenyan people for the Vision (Republic of Kenya, 2023). The social nature of the vision is key in identifying essential skills and knowledge towards empowering the people for those sectoral developments (GOK, 2007).

The social pillar of the Trainee empowerment aims at investing in the people of Kenya and highlighting the social aspect concerning TVET, the document mentions recruitment of trainers to address the trainee trainers ration during training, Curriculum reforms especially adoption of Competency Based Education and Training, Equipping TVET institutions with modern equipment (Mechatronics) towards industrialization and finally Training artisans to effectively skill the youth for industrial revolution(GOK, 2007). There has been views that the goal is a mere copy paste of global standards and as it appears, is an illusive ideal that cannot be implemented in Kenya (Motuka & Orodho, 2018). However, according to Musyimi (2021) modern equipment in Technical Institutions can facilitate new skills for the achievement of the Vision 2030 through provision of new skills for the market demands.

Analysis from literature on industrial involvement indicate that the skill mismatch in training has led to increased unemployment in the country (Republic of Kenya, 2019). Because training in Technical Training Institutions is overemphasizing knowledge acquired rather than competencies thus promoting supply of workforce rather than demand driven training (Federation of Kenya Employers , 2023). The need for a reconstruction of TVET and the entire education system in realizing trainee skilling for

realizing lifelong learning must be an agenda that educational philosophers must engage to give direction in order to solve this puzzle (Kisirkoi, 2019).

2.3 Related literature on Dewey's Democratic concept in TVET towards realizing Sustainable Development in Kenya

This objective used democratic concept and sustainable development as key words in the study. John Dewey (1859-1952) was the most significant philosopher of the 20th century who developed a philosophy that called for the unity of theory and practice (UNESCO,1999).Born in Burlington, Vermont in 1859, he encountered diverse views and in the light of Charles Sanders Pierce and William James he produced a philosophical thought that many scholars have termed instrumentalism, Deweyan approach or generally term pragmatic approach to education (Kaur, 2019). His theory found relevance in his Laboratory school in Chicago. Dewey's philosophical thoughts can be discussed as follows:

Epistemological Perspective of Dewey's education philosophy is inclined towards thought and action. From a tradition where, true knowledge was vested in a well-designed curriculum, Dewey is confronted with curriculum centered approach and a learner centered approach (UNESCO 1999). Dewey worked on a theory of knowledge that contested dualism of mind and world, thought and action (Roberts, 2005). According to Dewey, thought was not only a collection of impressions or an absolute mind, but a meditated functional pedagogical drive meant to serve the interests of human survival and welfare (Ord, 2012). Thus, it was necessary for every thought to be tested by action and thus truth was that which works and fulfill our purpose. Thus, true knowledge was gained through methods of natural science and absolute knowledge was not easily attained by human abilities (UNESCO 1999).

Human beings by nature are social being form the Aristocratic conception Axiological perspective of the Deweyan education thought is based on subjectivity (Terna, 2020). Thus, the influence of the other in a learning environment is of great importance and cannot be assumed. In addition, human life is a series of experiments directed towards specific functions in the society hence, there are no fixed values since they change with time and space (Adeleye, 2017). Aims and habits thus in Dewey's philosophy are revised often and ethically considerations of such an approach are towards targeted marginalized groups including youths (Roberts, 2005).

Reality exists in objects and actions that have been meditated upon by thought. Every other time the action generates an act consequences of the action are true manifestation of reality. Knowledge therefore, can be related to thinking and they only meet in an act (Talebi, 2015). Action is superior to thought however, action and thought are complimentary (Kaur, 2019).

According to Dewey, Educational problems existed due to this kind of dualism and thus a functional pedagogy that is interested in the learner's environment, needs and also tasks the curriculum to reflect learners' needs could address the problem and facilitate self-realization and societal transformation thus lifelong learning (Miettinen, 2000).

Reflection as a tool of solving problems does not remain at posing but continuous search for the possible workable solution to solve existing problem in the society (Miettinen, 2000).. Thus, such pedagogy assumes that children are not Tabula rasa when they come to the school environment some activities and interests from home can be raw material for the teachers to factor during lesson and curriculum orientation (Roberts, 2005).

A functional pedagogy thus demands that teachers were expected to reinstate into experience (subject matter of curriculum) of their students, Psychologize the curriculum

by constructing an environment in which problematic situation shall be encountered by the learner to stimulate learning by innovation or corrections (Darwish, 2009). In order to implement such a high-class curriculum which is self-made with a specific context, it demands teachers to be highly skilled professionals, knowledgeable in the subject matter, trained in child psychology and skilled in techniques for providing specific and necessary stimulus to stimulate specific outputs so that the subject matter becomes part of the learners' experiences as they grow up (Osamah Bataineh., 2009).

2.3.1 Social change

Dewey is a highly recognized scholar who developed a well textured pragmatic approach that laid foundation for the creation of a democratic classroom and thus society (Roberts, 2005). This view opened a new discussion in the conceptualization of education and the role of education to the learner and society. Education as such is not a preparation for life but education is life itself (Talebi, 2015). This discussion led to a technical definition of education as a reconstruction or reorganization of experiences (learners' interests and opinions and environmental activities) with a view to generate new knowledge and address existing problems (UNESCO,1999).

On the nature of experience, Dewey has the following:

“When we experience something, we act upon it, we do something; then we suffer or undergo the consequences. We do something to the thing and then it does something to us in return; such is peculiar combination. The connection of these two phases of experience measures the fruitfulness of experience, thus mere experience doesn't constitute experience” (Dewey, 1916:104)

According to Ord, 2012 experiential learning therefore, is based on assumptions like people learn best when they are involved in the learning experiences, knowledge is

generated by the person interacting with and experience and it has to be meaningful and finally personal disposition and commitment to learning is highest when they are free to set their own learning objectives, aims and goals. Pragmatic theory assumes that no absolute standards of life exist eternally and permanently for an effective type of education and training (Tabeli, 2015).

Democracy on the other hand is more than a form of government. In the view of education as a social function, it is a mode of associated living of conjoint, communicated experience (Roberts, 2005). Striking a balance between a hidden curriculum demands and a child centered approach, Dewey's freedom for the student involves in the ability of the learner to interact with his or her environment and generate new knowledge (Ord, 2012). Here the teacher only provides learning material based on learners' interests. The activities the student is involved in are set by the teacher towards innovation, interaction and testing of a theory through a specific consequence that addresses existing problems (UN, 2021).

2.3.2 Learner development

First and foremost, the progressivism approach narrows down to paying attention to trainee needs in terms of skills, knowledge and attitudes during preparation of training tools, training methods and assessment (Tabeli,2015). The emphasis on trainee skill for employability has strongly promoted project-based learning that motivates Trainers and trainees to positively interact with the problem and find solutions within that context and thus providing evidence of effective training.

However, Dewey learner centeredness is based on the teacher's ability in reorganizing training matter that favors learner interaction and stimulates learning and innovation. Recognition of prior learning Dewey in analyzing the conventional approach of his time,

the education practice and theory assumed trainees as passive recipients of authoritarian works and political structures thus prevented learners from self-discovery and communal inquiry and therefore learning was a monopoly of institutions of learning. Learners' local environment is rich in content and experiences; Dewey assumes that learning ought to start from Known to unknown for effective delivery of TVET towards realizing long life individual development and by extension socio economic development. Thus, opposed to "Tabula Rasa" attitude of the Empiricists, Dewey formulated a rational Empiricist approach to the process of knowing (Tabeli, 2015). Interests, activities, prior experiences are of necessity in the process of knowing.

2.3.3 Freedom

A functional pedagogy is viewed as one that spearheads individual trainee consciousness, decisiveness and critical evaluation of issues (Geert et al, 2006). Therefore, Participation is an objective, as well as a means, of development. According to (Uzma Quraishi ., 2018) participation should be viewed as fostering critical consciousness and decision-making as the basis for active citizenship. Development strategies should empower citizens, especially the most marginalized, to articulate their expectations towards the State and other duty-bearers, and take charge of their own development.

This principle relies on ability of education practitioners to link related subjects ie engineering, production and entrepreneurship in solving environmental issues. On the other hand, Dewey opines that students' interest is key in participation. Student's interests are conservation, investigation, construction and creative expression (Sakshi et al., 2018).

Intersubjectivity was to address the issue of teacher centered conception of education (Andafu & Simatwa, 2014). Dialogue between the teachers and students was to be

encouraged during and after learning. Educations being a social act, students were to collaborate, discuss and directed towards helping others to be free by transforming the totality of society. Thus, education is a project of freedom, self-reflection, self-managed life, and particularly notions of critical agency (Giroux, 2010).

2.3.4 Intersubjectivity

According to Ord (2012) Dewey's experiential learning theory is very vital in providing a theoretical ground for any youth work related study. In addition, it clearly defines the teacher's demands in terms of teacher training to orient a curriculum with clear goals but temporarily objectives towards specific actions. In the analysis of Teachers perceptions on critical thinking in Jordanian secondary school, Osamah & Khaled, (2001) observed that critical thinking has its origin in Dewey's functional pedagogy and it is vital in decision making and problem solving.

Applying Dewey's theory to counseling, Kalkbenner Michael., (2016) opines that interest and activity were key elements for personal development and thus activity organisation and students interests must be clearly stated within the curriculum. This reinforces the need for a strong teacher training towards empowering the young with vital skills for lifelong learning.

The social change drive is pushing all levels of education to adjust and fit in thw world of work demand. However, for a diverse culture Dewey's theory can serve as a heuristic tool in reconceptualising what is reseach, what goals can be met within a given framwwork (Jia, 2005). But according to Maddux and Donnett, (2015) dewey's theory is vital in in service training. On the other hand it is only (DeFalco, 2016) who attempted to evaluate Dewey's theory and Vocational Education and training and he opinnes that Vocational Training is still seen myopically as preparing students for the world of work

and thus vague expectations which can address social problems. In addition, Vocational education and training has overemphasised “Learning to earn” an ideology not closer to Dewey’s pragmatic thought. Taking for granted that Vocational education and training in any country is oriented towards problem solving and thus by extension well grounded in Dewey’s theoretical framework this would sum up a hasty generalization.

2.3.5 Lifelong Learning

Lifelong learning is an aspect of education and training that aims at learning to learn (Cronholm, 2021). Lifelong learning in the modern world involves accumulation of relevance modern skills like digital literacy for digitalization of the world (ADEA, 2020). In attempting to design principles of university education, Cronholm (2021) identified the need education the whole person rather than part of the person for employability. On the other hand, Palmer (2020) identifies informal sector as a huge contributor in empowering the youths for lifelong learning.

The rift between industrial demand for the competencies which they haven’t facilitated in training and reality of training TVET institutions demands for a philosophical reflection on a possible theory that can guide training for lifelong learning (Osabwa *et al*, 2022). The study sought to establish whether Dewey’s Democratic concept can facilitate TVET in realizing lifelong learning in Kenya.

2.4 Summary on Related Literature Review

Kenya’s TVET system throughout the 8.4.4 system was just a part of the tertiary institutions and all the goals of education cut across the levels. It is also clear from the literature that apprenticeship was adopted since early civilization since the essential skills were to help man towards modernity (Osabwa, 2021). Skilling has been an avenue for human empowerment and even orientation towards attaining higher goals (Pretti *et al*, 2020).

Through the human capital theory that emphasized the supply driven training, unemployment and skills mismatch has been identified as a limitation of Kenya attaining its industrialization agenda (Changilwa & Akala, 2018). This motivated scholars to claim that attaining of the educational goals is a mirage and illusive (Motuka & Orodho., 2018). However, there ae scholars like Osabwa (2021) who opine that reconstruction of Kenya Educational Philosophy can offer a better approach in skilling towards attaining Sustainable development. The study therefore is tasked to establish how Dewey's democratic concept can facilitate TVET in realizing Sustainable development

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter consists of the research design, research methods, data collection and analysis procedures. The study adopted a qualitative approach in collecting and analysis of data.

3.2 Research Design

The study adopted constructivism as paradigm. This is a paradigm that holds to the view that reality is not objective and every person can actively construct their own notions of reality from the cognition (Kisirkoi, 2019). Constructivism as a paradigm allowed the researcher to construct meanings from TVET attempt to attain Sustainable development by adopting literature review and lived experiences of Principals ad ILOs on the link between training and industry. The study used philosophical research design. According to Kamal (2019), a constructive philosophical design embraces logical analysis and argumentation whereby premises are stated and logical rules followed to arrive at a sound conclusion, solutions, and recommendations to a specific problem under study.

The design was also adopted because of its ability to aim at clarifying, arguing reflecting on assumptions and providing tentative logical conclusions (Osabwa, 2021).The design also facilitates the tracing for consistency among different concepts in order to free technical education and training from contradictions (Ibanga, 2020).Therefore, the study used this design to clarify TVET objectives, Trainee empowerment , training industry link and the applicability of Dewey’s concept of democracy in reinventing TVET to attain Sustainable development in Kenya.

3.3 Research Methods

According to Ibanga (2020), these are techniques used in enhancing clarity of thought and sometimes a study can adopt one or several of them may be simultaneously applied to a single study. This study adopted the philosophical analysis and synthesis method and hermeneutic phenomenological method.

3.3.1 Philosophical Analysis

Etymologically, the word analysis is derived from ancient Greek term “*analusius*” (Angadi, 2019). The prefix “*ana*” means “up” while “*lusis*” means “loosing”, “release” or “separation” so that “analysis” means losing up or “dissolution” the term was readily extended to the solving or dissolving of a problem and it was employed in ancient Greek Geometry and Philosophy (Kauka, 2018).

Analysis therefore is a critical evaluation, usually made by breaking a subject down into smaller concepts in order to understand it (Osabwa, 2022). Analysis is as essential to science as it is all rational enterprise since it involves three major stages; first and foremost, the search for an hypothesis which is sufficient to explain what reality accomplishes, secondly investigation of the extent to which this explanation is a necessary one and finally comparison with experience in order to verify or correct the explanation (Osabwa et al, 2021).

This method was adopted in identifying objectives of TVET in the in Kenya in the education acts, reports, commissions and session papers since independence. The method was used to trace the terms of reference of each commission or report and sought the extent to which the references were necessary and finally compare with experiences as at now to verify or establish the ought of TVET in terms of objectives towards lifelong

learning in the light of Dewey's pragmatic thought. In addition, Synthesis method was adopted to provide conclusion.

3.3.2 Synthesis method

This is a philosophical method that is concerned with the combination of element of a system in order to make judgment or a clear understanding as a whole (Osabwa, 2021). This method finds its origin in analysis and thus it complements philosophical analysis. The aim of synthesis is to obtain clear, conclusive statement of the findings of the scattered research to be clearer and consistent (Angadi, 2019). Synthesis adopts conclusions from each research topic, categorize, compare the similarities and differences and bring out the conclusion from all the studied literature (Singporn & Nuangchalem, 2021). This study adopted this method in the examination of objectives of TVET in the light of pragmatic theory by looking at what sources like journal, reports and books and finally answers to the question what objectives have guided TVET in line with Dewey's thought toward attaining lifelong learning among trainees. The method was also used in the summing up of critical concepts of Dewey's education thought that apply to TVET and they have guided TVET towards realizing the country's development agenda.

3.3.3 Hermeneutic Phenomenological method

Phenomenology etymological derived from Greek words "*phainem*" to show and "*phainesthai*" to appear, and "logos" meaning reason (Newberry, 2012). Thus a philosophy that subscribes to the movement of a Edmund Husserl that concentrates on detailed description of conscious experiences, without recourse to explanation, metaphysical assumptions and traditional philosophical questions (Newberry, 2012) (Friesen, 2023). Whereas hermeneutic is a theological term meaning the interpretation of spiritual truth of the Bible, also borrowed by philosophers to mean investigation and

interpretation of human behavior, speech, consciousness, feelings, emotions, and imagination.

Hermeneutic phenomenological method is also known as interpretive hermeneutics is used to interpret the meaning of lived experiences and communicate the interpretations textually or symbolically (Newberry, 2012). The lived experiences can be psychological for instance, trauma, joy, labour pain etc. or a pedagogical experience for instance caring the troubled youths in training (Friesen, 2023). This method has been extensively been adopted in health sciences, human sciences because of the nature of experiences under study being psychological in nature (Gorgi., 2012). Pedagogical experiences are best studied by the phenomenological method and thus the study adopted Max Van Manen approach in data collection and analysis (Van Manen, 2014).

The Hermeneutic phenomenological method was adopted in assessing the lived experiences of Principals and Industrial Liaison Officers (ILOs) on TVET practices in Technical Training Institutions this method was used to assess the TVET Practices linking training and industry in correcting skill gap towards attaining Trainee empowerment.

3.3.4 Critical Method

According to Njoroge and Bennaars, (1986) the term critical originates from the Greek words "*Krinein*", meaning "to judge". It involves subjecting of values, facts, principles, conversations and assumptions usually taken for granted to severe questioning. This method is usually adopted by researchers to encourage honesty of thought, protect man from fanaticism and hypocrisy, from intolerance and dogmatism, from slogan and ideologies and falsehood (Kauka, 2018). It is also called Socratic Method. This method shall allow the researcher to philosophize with the findings presented in each objective.

3.4 Strategies for collecting lived experiences from Principals and Industrial Liaison officer in Technical Training Institutions in Kenya

Though the study is situated in Kenya, to collect lived experiences on the TVET practices linking training and industry towards attaining trainee empowerment, phenomenological method facilitated a qualitative field study.

3.4.1 Location of the study

In the second objective the study examined the lived experience of the principals and the ILOs in the 14 technical training institutions that exist in Kakamega, Vihiga, Busia and Bungoma a region formally known as western region see *Appendix ii map*. The region was selected because of its richness in technical institutions that have seen, implemented and piloted some of the policies including the CBET 2018 policy towards attaining the Trainee empowerment.

3.4.2 Target population and Sample selection

Study is in the constructive philosophical paradigm using a phenomenological method therefore, the researcher was guided to avoid deviating unwittingly to a positivist view of cause and effect thus driving research from perspective of the researcher than that of the respondent (Joseph & McCormack, 2018). Semi- structured interviews were also used as tools for data collection conducted with a small, homogenous and purposively sampled sample size (Rajasinghe, 2020). This section highlights how this was done.

According to Robinson & Williams(2024), there is no general rule when using phenomenological approach in selection of target population however some authorities recommend a sample size between 5 and 25 for semi structured interviews and 4-8 for focused groups so as not to reach saturation (Hennink, 2022). Saturation is a point at which interviewees introduce no new perspectives on the topic of study (Wajeih, 2023). Saturation point is the degree at which one has to stop sampling (Saunders et al.,

2017). In addition, when a qualitative transcription is done from the collected data, the point at which repletion of themes, concepts and views occurs (Wajeih, 2023).

The study targeted 14 TVET institutions that have been in existence for the last five years and have started implementing the CBET policy 2018. The target population of the 28 respondents was sought simplified as, 14 Principals and 14 ILOs. The Principals were targeted because of their role in engaging stakeholders in training while industrial liaison officers are responsible of placement, assessment, feedback management in the linkages between training and industry.

In addition, purposive sampling technique was adopted in identifying respondents because of the uniqueness of the respondents in this qualitative research (Ibanga, 2020). The sample size adopted was 13 respondents out of 28 target population. The sampled respondents are within the threshold of 5-25 respondents in phenomenological the interviews as indicated by See table 1

Table 1: Sample size

| Description | Target pop | Sampling | Sample size | Data collection Technique |
|--------------------|-------------------|-----------------|--------------------|----------------------------------|
| Principals | 14 | Purposive | 8 | Semi-structured interview guide |
| ILOs | 14 | Purposive | 5 | Semi-structured interview guide |
| Total | 28 | | 13 | |

Source: Researcher,2024

3.4.3 Data Collection Instruments

For the study of Research Question No 2, study adopted Observation checklist and semi structured interview guide for both the Principals and ILOs.

3.4.3.1 Observation Checklist

This instrument was adopted by use of a filed note book and mere use of sensory organs in order to record on Institutional preparedness in terms of incorporating practical oriented training towards empowering trainees for the world of work. Items required but not limited on production units, TVET fair projects, functional mechatronic and centres of excellence. The comments were recorded to guide the researcher on interpretation of the anecdotal reports.

3.4.3 .2 Semi structured Guide

Interviews are useful since they allow respondents to narrate their experiences freely (Nigar, 2020). Since Principals in TVET institutions are responsible for stakeholders engagement and mobilization while the ILOs directly place and facilitate assessment of trainees in the industry and handle feedback from different supervisors, semi structured interview guide was vital for them because it elicited the responded to share underlying opinions and belief and even share emerging trends and ideas on the mapping and industrial involvement in training and as to whether the world of work demands are worthy satisfying with existing relationship. An interview schedule with open ended structured questions was adopted

3.5 Trustworthiness

Trustworthiness in qualitative studies while in quantitative studies it is referred to as Validity. In philosophical research, this is determined from the truth value, based on how the conclusion is arrived at (Nigar, 2020). In a deductive argument, the conclusion follows necessarily from the premises and the truth value can either be valid and sound or valid and unsound. According to Bryman (2016), qualitative research measure validity and reliability using trustworthiness. The study adopted the criterion of confirmability,

dependability, transferability and credibility to validate the method instruments, and data through expert consensual validation (Nigar, 2020).

To ascertain the validity and reliability, the researcher developed the instruments based on Researcher Question 2 , assess lived experiences of principals and ILOs on TVET practices Linking Training and industry towards attaining Trainee empowerment, submitted to the supervisors who ensured that all the items in the research objective were covered and also checked the Research Question in line with research design and methods to determine the face and content validity and their views were used to improve the instruments

3.6 Data Collection Procedures and Ethical Considerations

This section discusses data collection procedures and ethical considerations for the entire study.

3.6.1 Data Collection procedures

Through the Post Graduate School Director at Masinde Muliro University of Science and Technology, the researcher sought for approval letter that shall facilitate the search for a permit and a research authorization letter from the National Council for Science and Technology (NACOST) before embarking on the research. Besides, the researcher disclosed the real purpose of the research to the TVET regional Director before commencing data collection in the purposively sampled institutions.

For the Research Question No 1 and 3, the researcher used a literature review matrix analysis table to analyse reports, journals and books with the related keywords, presented the findings in each literature and identified themes for discussion, analysis and synthesis.

For Research question 2, using phenomenological method, first the respondents from the sampled institutions were emailed the introduction letter and consent confirmation form to accept to participate in the study. The second step the emailing of Observation guide and interview schedule to guide the respondents was done to offer insight on what is expected in the study. Interviews were schedule based on the availability of the responds. Thirdly, the interview took place between October 2021-2022, taking 40-50 minutes whereby Note making, filling of observation check list and with respondents provided consent for recording of interviews were recorded for future analysis. Fourthly, Reflection on the data audio clip, observational notes was done. Reading and listening was effectively done by transcribing the data to a summary sheet, transcription sheet identified key words that led the researcher to identify themes on the TVET practices linking training and TVET towards attaining Trainee empowerment and presented the transcriptions in tables. The researcher wrote the descriptions and presented them in tables.

3.6.2 Ethical Considerations

This is a practice in research that observes the following aspects: voluntary participation by participants in research, informed consent, anonymity, confidentiality, risk of potential harm and right to result communication (Fleming & Zegwaard., 2018).

The study adopted a philosophical research design that allowed for library based and field study. The phenomenological method that facilitated going to the sampled institutions in Kenya, allowed the researcher to collect views and opinion on TVET practices linking industry and training from Principals and ILOs. The researcher requested the participants through a formal letter upon which they voluntarily attempted to answer the short questions to provide an anecdotal note on their willingness to participate in the research. Upon this informed consent, the researcher carried out

interviews and recording them for transcription purposes with participants consent and permission and data was transcribed and coded by using abbreviations P1-5 to represent principals while ILO1-8 to represent Industrial Liaison officers for anonymity and confidentiality. After the transcription, results were shared with respondents to ascertain their authenticity and accuracy.

3.7 Data analysis

For objectives 1 and 3, Document analysis was adopted as a method of data collection and data analysis used conceptual analysis to identify assumptions, clarify concepts and present themes a critical reflection was given in light of Insights from other disciplines and finally reconstruct new arguments to facilitate synthesis of conclusion.

For objective 2, Interpretive phenomenological analysis was adopted in analyzing the lived experiences since it entails interpretive profile creation a vital tool in analyzing phenomenological data (Oerther, 2020). In this study in attempt to answer the research question 2, the researcher read the anecdotal reports from the respondents, taking the observation notes and listening to the interview in order to write a transcribed sheet showing verbatim what each respondents said, reflected on the lived experiences in the structural stage, developed and selected emergent themes, searched for connection across emergent themes and finally wrote about the reflection on the lived experiences as given by respondents, comparing with reality and looking for patterns and giving critique conclusion (Robinson & Williams., 2024).

The phenomenological analysis adopted Smith *et al*, (2009) approach that describe the hermeneutic cycle in the following steps:

Step 1: Transcription of the semantic content of each individual interview based on audio recording

Step 2 reading and rereading immersion in the data and searching for the detailed section shafting from generic to specific accounts and patterns

Step 3: Initial noting. Identify specific ways the participant talks about an issue. An unstructured commentary. Describe what matters of the participant and the meaning of those things

Step 4: Developing Emergent themes based (step 3 reducing volume of data capturing complexities, mapping interrelationships, connections and patterns

Step 5: Searching for connections across emergent themes mapping how the themes fit together and related to the research questions. The table below shows how each objective’s data was analyzed

Table 2 Data Analysis

| Specific Objective | Variables | Methods |
|---|--|---------------------------------------|
| Examine the objectives of TVET in Kenya in light of pragmatic theory towards lifelong learning | <ul style="list-style-type: none"> • Objectives of TVET • Lifelong learning | Philosophical Analysis and synthesis |
| Assess the lived experiences of principals and ILOs on TVET practices linking training and industry for trainee empowerment | <ul style="list-style-type: none"> • TVET practices link training and industry • Trainee empowerment | Hermeneutic Phenomenological Analysis |
| Establish the applicability of Dewey’s democratic concept in TVET towards realizing Sustainable Development in Kenya | <ul style="list-style-type: none"> • Dewey’s democratic Concept • Sustainable Development | Philosophical Analysis and synthesis |

Source: Researcher, 2024

CHAPTER FOUR

DATA PRESENTATION, INTERPRETATION AND DISCUSSION

4.1 Introduction

This chapter presents results, interpretation and discussions of the study. The findings are presented as per the objectives which were: to examine the objectives of TVET in Kenya in the light of pragmatic theory towards lifelong learning among, to assess the lived experiences of principals and ILO'S on TVET practices linking training and industry towards attaining the Trainee empowerment and establish how Dewey's concept of democracy can facilitate TVET towards realizing Sustainable Development,

4.2 Examine objectives of TVET in Kenya in the light of pragmatic theory towards lifelong learning

Systematic analysis of government of Kenya policy documents from 1964 to 2023 was done by identifying the report, stating the terms of reference or objectives and recommendations of the report. The researcher using philosophical analysis identified underlying assumptions as themes within each document and recorded as the key objectives of TVET either explicitly or implicitly identified. The researcher gave a brief discussion on each report and voiced the limitations and finally using synthesis identified the cross-cutting objectives in the analyzed documents discussed and gave critique on the assumptions that have been overemphasized and some taken for granted yet they contribute TVET facilitating lifelong learning. The table below gives the results from the reports commissions that were systematically analyzed Table 3

Table 3 Analysis of Government of Kenya Educational Policy Documents

| Report | Terms of Reference | Recommendations | Objective/Theme |
|----------------------|---|---|--|
| Ominde Report 1964 | <ul style="list-style-type: none"> To survey existing resources in Kenya advise government on formulation of policies for education Address problems inherited from the colonial government and make education responsive to the needs of the country. | <ul style="list-style-type: none"> To reform education system thus responsive to Kenya's needs. Racial integration to be put in education, curriculum to foster national unity, cultural integration. To address regional inequalities. TVET to be expanded after a human resource survey to avoid wastage. | <p>Social efficiency</p> <p>Democratic participation</p> |
| Gachathi Report 1976 | <ul style="list-style-type: none"> To review education and prepare objectives and policies to be adopted in attempt to assess the relationship needs, existing facilities and cost of education. | <ul style="list-style-type: none"> Abolition of school fees from STD 5-6, Proposed 9-2-4 system of education Stress the importance of national unity and cultural aspirations of the Kenyan people. Emphasis on early childhood education. | <p>Inclusivity</p> <p>Participation</p> |
| Mackay Report 1981 | To prepare detailed plans and recommendations on the establishment of the second university in Kenya. | <ul style="list-style-type: none"> Scrapping off A level, segment and introduction of 8.4.4 system of education. Establishment of the commission of Higher Education. | <p>Skill development</p> <p>social efficiency</p> |

| | | | |
|----------------------------|--|---|--|
| | | <ul style="list-style-type: none"> • Establishment of the second university, Moi | |
| Kamunge Report 1988 | To review national education and training for the next decade and beyond. | <ul style="list-style-type: none"> • Strengthening Vocational and technical education. • Emphasize on the need of cost sharing and establishment of a strong professional structure | Social efficiency Skill development |
| Koech Report 1999 | To review education system and recommend ways that means of enabling it to facilitate national unity and also recommend a possible programme for action to alleviate government financial constraints. | Total integrated quality education (TIQET), expanded and free basic education, strengthening alternative continuous education and finally review the education act. <ul style="list-style-type: none"> • Reduction of Subjects | Skill development |
| Constitution of Kenya 2010 | Art 43: The right of the youth to access relevant education and employment Art 55: Right of minorities and marginalized groups to education and employment Art 56: Right of persons living with disability. | Right to education for all | Democratic participation Gender mainstreaming aspects |
| Odhambo Report 2011 | Analyze the implications of the new constitution to education, undertake needs assessment gaps in relation to curriculum delivery process, and finally review educational training research to conform to new education. | Flexible and comprehensive structure of education, revision of school calendar and term dates, development of a progressive assessment framework and finally expansion and access of education at all levels. | Skill development Democratic participation |
| TVET ACT 2013 | Establishment of Technical and vocational education and training system, provide governance and management of institutions offering technical and vocational education and | A TVET system that recognizes prior learning 2 tiers: National government (TTIs, TVCs, National Polys) and county Government(VTCs) | Skill development Democratic participation |

| | | | |
|--------------------------|---|---|--|
| | training, provide coordinated assessment, examination and certification, institute a mechanism for promoting access and equity in training and finally assess standards, quality and relevance and for connection purpose. | Management of TVET through: TVETA TVET CDACC KNQA | |
| Republic of Kenya (2018) | The objectives of the CBET are to: <ul style="list-style-type: none"> • Establish occupational standards which can 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 have the confidence of all stakeholders • Promote lifelong learning through progression and transfer • Encourage individuals to achieve their full potential • Develop attitudes and abilities to respond rapidly to change | Target: i) those currently educated and trained who need to update their competences ii) individuals from the informal sector individuals from the formal sector, the unemployed population, out of school youth, those with little or no education, those individuals who are made redundant so that they can learn new competences and those who have retired but who would like to develop new skills and competences | Competency Skilling Democratic participation |

Source: GOK, 1964-2023

From the Table 3, the following views were identified in each document and discussed;

First and foremost, the findings reveal that at independence the objective of general education was reinventing education towards alleviation of poverty, hunger and diseases and this is highlighted in the Ominde report. The policy framework thus promoted education for skill development and elimination of racial lines that hindered many to attend to schools. The finding also reveals that TVET was to be expanded cautiously on the basis of a manpower survey to avoid human resource wastage.

Secondly, the Gachathi report (1976) reveal that the aspects of education funding by government were put in place and general education was to be funded basing on the resources available. The Mackay report (1981) on the other hand highlights the glorification of a self-reliant system and university education. It is upon this trend that TVET institutions in Kenya were adopted and made fully fledged universities thus killing expansion of TVET and increased the degree syndrome by having preference for Degree graduates over TVET graduates in employment opportunities and degrading TVET as a cadre for examination failures in Kenya (Sifuna, 2020).

From the table 3 it is also revealed that the Kamunge report (1988) and Koech report (1999) identified Technical skills as key in the empowerment of the workforce towards attaining Kenya's development agenda. Technical skills are relevant in the general education and thus the issue of the number of technical subjects to be handled was not clarified and this led to the Koech report (1999) that reinvented a move towards removing technical subjects in general education because of the lack resources. This was an avenue that led to the mutilation of technical vocational education and training in Kenya (Ngure, 2022).

The findings reveal that it is after the constitution of Kenya 2010, that TVET system sees the light by operationalization of the TVET system by the guidelines of the Constitution and endorsing of the TVET act 2013 to realign TVET towards training for the world of work demands rather than supply demand. This finding is in agrees with the policy documents and scholars that have voiced that TVET in Kenya has been thought of too late to be thought of as an engine towards the attaining of Kenya's agenda and thus facilitating any form of development is mere illusion (Motuka & Orodho., 2018). However, the preparation of the CBET policy 2018 and the Recognition of prior learning

policy 2021 is a new development in empowerment of the youths towards skill development for all in order to realize lifelong learning.

From the government reports and commissions, the researcher used philosophical analysis to identify the aspects that are either explicitly or implicitly voiced by the document and common and examined them as objectives of TVET in light of Pragmatic theory towards attaining lifelong learning. The themes were: Education for skill development, education for social efficiency and education for democratic participation. This section makes an interpretation systematic analysis provided in the table.

4.2.1 Education for skill development

From the presented data it is noted that since independence, each report or commission was trying to reinvent education and training towards bridging the skill gap. Though TVET is not explicitly identified as an avenue for skilling manpower for attaining the development agenda from 1964-2012, Technical education is a key player in skill development for the world of work has evolved after the Constitution 2010 (Republic of Kenya , 2019) .

The sessional paper 1 of 2019 critically states the role of TVET:

“TVET provides young people and the unemployed with the competencies to gain productive employment and provides those already in employment (including entrepreneurs) with an opportunity to upgrade their skills.” P 48

The study also notes that, General education included technical subjects in the curriculum by the Kamunge report (1988) and Koech report (1999) to empower the graduates with technical skills, Entrepreneurship skills, competency skills employability skills and even lifelong learning skills are essential for human survival. This is also emphasized by the Competency-Based Education and Training policy of 2018 (Republic of Kenya, 2018).

In relation to pragmatic theory, Human life is for education and education is for human life. The humanism in education and training indicates the core role of engaging trainees with real life experiences for individual development and for social development.

Dewey in the Treatise Democracy and education outlines that:

“Education, in its broadest sense, is the means of this social continuity of life. Every one of the constituent elements of a social group, in a modern city as in a savage tribe, is born immature, helpless, without language, beliefs, ideas, or social standards. Each individual, each unit who is the carrier of the life-experience of his group, in time passes away. Yet the life of the group goes on.”
P 10

This study noted that skill development has been overemphasised throughout the policy documents. This study finding is in agreement with the Policy framework recommendations that skill development has been the central objective of TVET in order to correct skills mismatch in the industry (Federation of Kenya Employers , 2023). Though acquisition of the skills is dependent upon resource allocation and context as alluded by Chepkoech et al, 2021 and Dawo and Sika, 2021, the study opines that since education for skill development is a human activity as voiced by Dewey, there is need to understand man who is to be skilled, how, where and when.

4.2.2 Education and training for social efficiency

The findings reveal that Ominde report (1964) and Kamunge report (1988) identify education and training as a tool for social efficiency. The interactions are meant for social integration, innovation and sharing of knowledge, skills and attitudes. However, the study deviates from the findings of Mwaka et al 2013 that the education system in Kenya failed in achieving unity because of the aftermath of post-election violence in 2007/2008.

In light of pragmatic thought, Dewey however notes that school environment needs to bring up the young in an informed pace.

...more important functions of this special environment are: simplifying and ordering the factors of the disposition it is wished to develop; purifying and idealizing the existing social customs; creating a wider and better-balanced environment than that by which the young would be likely, if left to themselves, to be influenced. p 27

The study found out that skill development is for the trainees who ought to be exposed to the world of work. This indicates the opaque nature of the society and education system whereby values, skills and attitude acquired are transferred back to the society. It follows necessarily therefore that improper skill development leads to improper social efficiency.

4.2.3 Education for democratic participation

The finding reveals that the Ominde report (1964), Gachathi report(1976), Odhiambo report(2012) and the CBET policy(2018) outline this objective of TVET. The freedom and ability to share resource for the common good is indicated by these documents. Therefore, the finding indicates that TVET has explicitly identified democratic learning approaches through the CBET policy framework and the prior learning frameworks. This is in line with Dewey in his Democracy and Education;

“The two points selected by which to measure the worth of a form of social life are the extent in which the interests of a group are shared by all its members, and the fullness and freedom with which it interacts with other groups. An undesirable society, in other words, is one which internally and externally sets up barriers to free intercourse and communication of experience” p. 103

Rights and interest of trainees in training: Technical Training institutes have a specific curriculum that is followed in training and the planning of the course delivery approach demands that trainees interact with practical lessons, trips, attachment and even internship. Trainees are allowed to select the course, select the training model

The core elements of Dewey's school were – the child, the school and the society. To these three he added three more notions – democracy, growth and experience. Dewey wrote in *Democracy and Education*, that

“Education means the enterprise of supplying the conditions which insure growth or adequacy of life, irrespective of age” (Dewey, 1966, p. 51).

Dewey's school aimed at educating a flexible, creative, thinking and cooperative pupil and not a passive person. He wanted school to be a social institution representing life as vital to the child as that carried on at home.

“A society which makes provision for participation in its good of all its members on equal terms and which secures flexible forms of associated life is in so far democratic. Such a society must have a type of education which gives individual a personal interest in social relationships and control, and the habits of mind which secure social changes without introducing disorders” (Dewey, 1966, p. 99).

The study therefore, found out that TVET in Kenya has facilitated democratic learning and trainee participation in both training and in the industry. This has been observed through reports, attachment placements and stakeholders' feedback (Federation of Kenya Employers , 2023).

4.2.4 Critique of skill development as an objective of TVET in light of Pragmatic theory towards lifelong learning

In this section the researcher gives a synthesis over the discussions by looking at a dominant objective of TVET skill development as indicated has been overemphasized by the documents under study.

Critique on economic view of human capital development: Overemphasis of skilling at the expense of critical reflective learning has led to many TVET institutions to diversify courses, making a TVET institution as a shop of all services, increased production of

similar graduates thus flooding labour market in addition, emphasizes of employability skills that depend on contextual factors.

The second critique philosophical anthropology concept of man. The overemphasis is skill development handles part of the human person (hands, head) or from a philosophical anthropological view body and mind. These debates take use to the philosophical problem of what reality “is”. According to Stumpf (1999) in the treatise From Socrates to Sartre, man is a project. This is clearly elaborated in three perspectives from an anthropological exegesis. First, from a Cosmo-centric view, early Greek Philosophers opine that: Thales: All is water which implies man is made of water, Anaximander: all is Apeiron and this implies was made of apeiron, Anaximenes: all is air which implies that humans are air, Heraclitus: Human are changing(one can’t step into the same river twice which implies that human are in flux) man is changing both mentally and physically, , 2017, pp. 28-29). Anaxagoras: ‘Humans are constituents of four elements of earth, water, fire and air’ Democritus: ‘Humans are aggregates of atoms’ Plato: ‘Humans are made up of body and soul’ Aristotle: ‘Man is a rational animal’

From a theocentric view man was made in the likeness of God (Imago Dei) and following the Judea Christian and plates dichotomy of man as soul and body tradition St Augustine discusses the process of illumination as a way of knowing reality. On the other hand, St Thomas Aquinas adopted the Aristotelian principle of act and potency in his Entity and essence to discuss man as soul and body where they meet and where they disintegrate (Copleston,1993).

Finally, the modern view of man indicate man; Socrates: Humans should know their self, Descartes: Man is thinking being, Kant: Humans use understanding and sense perception in making judgments Kierkegaard: Humans are existential beings Wittgenstein: Humans

should make their language easy and clear in order to transform and communicate their thoughts and technology. Sigmund Freud: ‘Man is made up of three personality traits Id, Ego and Super Ego’ (Tariq et al, 2018).

Both the cosmocentric, medieval and modern views about what man is guided in the understanding of the epistemological problems that man encountered and possibilities of solving relies heavily on philosophy to discuss and solve the problems.

Therefore, it follows necessarily that the economic conception of TVET in facilitating training for lifelong learning was a unproductive approach in training because of the reduction nature of man to hand work, what about the will, the soul and thus man in totality as “being”.

4.3 Assess the lived experiences of principals and ILO’s on TVET practices linking training and industry for attaining trainee empowerment

In this objective, data was collected using hermeneutic Phenomenological method were lived experiences were collected from the 05 Principals and 08 ILOs who were purposively sampled and data collection was through semi structured interviews that were carried out between the month December 2021 to June 2023 with all ethical considerations. Semi structured Interviews were carried out for 40-50 minutes and audio recorded with respondent’s permission. The researcher read the notes from the observation checklist and listened carefully to the recorded semi structure interviews, the researcher presented data in tables: First the researcher presented Demographics for as per the guiding questions on CBET implementation for competency skilling, dual training, production units and mechatronics and recognition of prior learning. transcribed and themes were identified and presented as follows;

4.3.1 Lived experiences of Principals and ILOs on TVET practices linking training and industry towards attaining trainee empowerment

In this section the researcher presents the findings got from the transcription forms for Principals and ILOs. The lived experience of Principals on the implementation of CBET towards attaining trainee empowerment are presented in *Table 4* Lived experiences of ILOs on CBET delivery and implementation towards attaining trainee empowerment are presented in *Table 5*

In *Table 5*, The study reveals that among the principals interviewed 3 principals acknowledge the fact that in their live world, they are facing a challenge in implementing CBET curriculum for it requires enough resources. While 2 principals noted that the availability of equipment's from the ministry, Jitume labs delivery and other institutional incentives are encouraging CBET delivery and implementation for it encourages production of products, utilizing available labour with limited resources to training.

Table 5: Lived experiences of Principals on CBET Delivery and implementation towards attaining Kenya trainee empowerment

| Respondent | Verbatim | Theme |
|-------------------|--|--------------------|
| P1 | Implementation of curricula is resource intensive especially the physical and ICT infrastructure and thus assessment for TEP is cheaper as compared to ModularCBET is a more intensive curriculum thus requires more funding to implement. | Resource challenge |
| P2 | Trainers involvement has been key in curricula implementation and limited trainers has limited effective delivery and assessment ...when new trends come, trainers require capacity building to facilitate implementation CBET. | Resource challenge |
| 3 | Training materials and workshops have been stress hence there is | Resource challenge |

| | | |
|---|--|-------------------|
| 4 | increased enrolment to facilitate training. In addition, when there is limited funding and limited industries CBET is the way to go because learning is based on evidence and learning by doing. The production of items in the production unit especially here we produce Cabros for the country government ,Mechanical department process kiosks for the county government | Institutional hub |
| 5 | Change is like rest, new technologies in the world of work if exposed to trainees and trainers always improve training for the world of work, the obsolete nature of technical training institutions' equipment can't accelerate training for the world of work. Competences required for the realization of the Vision can only be attained when CBET curricula orients both trainers and trainees on effective utilization of resources and environment by production of evidences of training. | Institutional hub |

Source: Researcher, 2023

Table 6: Lived experiences of ILOs on CBET delivery and implementation towards attaining trainee empowerment

| Respondent | Verbatim | Theme |
|-------------------|--|-------------------|
| ILO 1 | “The TEP program has attachment at the end of each course, however modular has an integrated attachment period in the middle and at the end and this modular approach provides exposure for students to realities r project work.” For CBET, reality has it that industries are dying globally due economic implications, I think there is need to re-invent industries | Limited Industry |
| ILO 2 | The modular program has been enhancing adoption of best practice in the field and this embrace change. | Institutional Hub |

| | | |
|-------|--|-------------------|
| ILO 3 | <p>...CBET shall demand that both trainers and trainees are exposed to the experience before collaboratively training for attaining the vision this can be achieved through dual training and simulation of projects.</p> <p>Trainees have been always under pressure to complete TEP whereas modular has been relaxed and at the pace of student's ability. In addition, industrial involvement in curriculum formulation, assessment brings on board corrective measure to the system since all stakeholders are involved in skilling.</p> | Institutional hub |
| ILO 4 | <p>I think the Training needs and demands for the TEP program emphasized reproducing and using skills acquired in the field while modular curriculum emphasized innovation and creativity, diversification and project wok. The new curriculum adopts new technologies in learning, training and even innovations: robots, TVET fairs."</p> | Institutional hub |
| ILO 5 | <p>".....The stakeholder collaboration is necessary in CBET curricula, however little has been made by the institutions to position the modalities of training in the institution and the training in the industry and how and when assessment is due." TVET is moving away from theoretical learning however, industries are very few for dual training.</p> | Limited industry |
| ILO 6 | <p>The trainers had a key role in curriculum delivery; assessment and even student care modeling. Trainee skill development is evidenced through Portfolio of evidences which some trainees haven't picked up the role of facilitating assessment because of the intensive nature of training.</p> | Resource |
| ILO 7 | <p>Dual training has been mentioned by the Competency policy it is still a challenge for me to expose trainee to the world of work because it is not clear yet how may courses, units and</p> | Limited industry |

| | | |
|-------|--|-------------------|
| ILO 8 | <p>examinations the trainee shall undertake. In addition, limited industries are not yet willing to accommodate trainees on a new model because of logistical issues of insurance of trainees and who benefits from the deal</p> <p>“Ability of CBET to work within the policy framework has allowed adoption new trends in training Robotics, production units and jitume labs are true avenues that can offer training for us as we implement training.”</p> | Institutional Hub |
|-------|--|-------------------|

Source: Researcher, 2023

In table 6 the findings reveal that out of eight interviewed ILOs, 3 ILOs opine that there is limited industrial to facilitate CBET delivery and implementation, 4 ILOs observe that existing institutional hub are guiding CBET delivery and implementation towards skilling for attaining Trainee empowerment while one ILO opine that CBET delivery and implementation is resource intensive and students require more requirement to facilitate skilling for the attaining of Trainee empowerment.

The findings on the lived experience Lived experiences of Principals and ILOs on CBET delivery and implementation towards attaining Trainee empowerment indicate that there is limited industrial involvement yet the curriculum has heavily been operationalized by the occupational standards from the industry. This observation out to be interrogated to facilitate smooth delivery and implementation of the curriculum to attain a workforce competent enough for attain the Trainee empowerment.

4.3.2 Lived experiences of Principal and ILOs on dual training towards attaining Trainee empowerment

The section presents in table 7 the lived experience for Principals on dual training towards attaining Trainee empowerment and in table 4.6 the lived experience for ILOs on dual training towards attaining Trainee empowerment.

From table 7 all 5 principals agree that dual training is primary in skill development however the results reveal that 03 principals opine that industry is still limited for the trainees, 01 principals agree that institutional hubs can provide skilling for attaining of Trainee empowerment and finally one principal view the dual program as thriving on illusion. The response by the principals ignites the researcher to check whether there exists policy framework on dual training in Kenya.

Table 7 lived experience for Principals on dual training towards attaining Trainee empowerment

| Respondent | Response | Theme |
|------------|---|------------------|
| P 1 | The mapping and existence of attachment opportunities has been done by ILO however there is no surety that the trainee shall be employed after completion. | Limited industry |
| P 2 | Though attachment period has been scheduled for each trainee, some end up not learning anything due to limited skills required either by the company or student lacking required skills for attachment. | Limited industry |
| P 3 | The dying manufacturing industries in the country has reduced our catchment for internship and attachment opportunities | Limited industry |
| P 4 | Curriculum diversification demand industry to guide this session as opposed to institutional internship that institutions guided. Industry is yet to get a clear road map of engagement | Illusive link |
| P 5 | Production units and industries have provided effective training to our trainee however, due to increased number of trainees the retention rates of trainee within the companies as employees has been low. | Industry link |

Source: Researcher, 2023

In *Table 8*, 02 ILOs opine that dual training exists in TVET institutions although there is limited industrial collaborations to facilitate training, 04 ILOs agree that despite the existence of dual training there still exist skill variance, one ILO view dual training is achievable though Institutional hubs that exist at colleges. One ILO is pessimistic about the impact of Dual training citing the none clear nature of the objective of training by the parties.

Table 8: lived experience for ILOs on dual training towards attaining Trainee empowerment

| Respondent | Response | Theme |
|-------------------|---|--------------------|
| ILO 1 | Stakeholders have been supplementing training by offering internship and attachment for students however chances are very limited. | Limited industry |
| ILO 2 | The formal set up for the engagement of trainees by industry is not yet clear, Dual training has exposed trainees to the new trends in their areas of study however, training materials and equipment in TVET institutions have not matched with industry offer due to technological advancement. | Skill Variance |
| ILO 3 | There exist industries but some courses have limited industrial opportunities to accommodate the increased intakes | Limited industry |
| ILO 4 | The required skills by industry have not matched with what training in institutions is offering. Sometime there is need for retraining and up skilling program to enrich the competencies. | Skill variance |
| ILO 5 | The industries that produce specific output have a constant skill and technology thus sometimes little knowledge or skill is acquired by attachees towards realizing lifelong learning. | Skill variance |
| ILO 6 | As the world changes some skills require unique environment and industries for training especially the ICT related courses. Technology | Institutional hubs |

| | | |
|-------|--|------------------------|
| | advancements have facilitated sometime simulation of ideal situations in industries without real attachment | |
| ILO 7 | Attachment for trainees has been limited thus need to increase duration. In addition, there is a Gap in terms of identifying industrial supervisor to offer training | Skill Variance |
| | I don't know how government intends to regulate skilling when all masons for instance demand for dual training yet industry cannot accommodate all in the TVET institutions. | |
| ILO 8 | Though industry is open to receive trainees, trainers have been left out to be retrained and orient themselves with advancements in the industry and the need to reconcile training needs and industrial goal of making profits. | Illusive Dual training |

Source: Researcher, 2023

From *Table 7* and *Table 8* the researcher noted that though there exists dual training as an avenue of skilling for the world of work, there is still limited industry to offer dual training. However, absence of a clear policy framework on dual training is clearly noted from the dissenting lived experiences of the principal and ILO who feel the dual training is still illusive.

4.3.3 Lived experiences for Principals on Production units and mechatronics towards attaining trainee empowerment

Table 9: Lived experiences for Principals on Production units and mechatronics towards attaining Trainee empowerment

| RESPONDENT | RESPONSE | Themes |
|--------------|---|--------|
| Principals 1 | Mechatronic machines are obsolete and expensive to run | idle |
| P2 | The equipment was supplied in 2012 however the program and manuals were still with the company that installed | idle |
| P3 | The mechatronic machine here was supplied by the Ministry and operating the machine has not been easy because of the incomplete installation | idle |
| P4 | Our machines are running, we have been able to prepare nuts, cut blades for our sugar factories and we are engaging other stakeholders to give us the tender to make metallic chairs, kiosks and even supply metallic door. | Viable |
| P5 | The power and the maintenance cost of the machines is just too high to run them at the expense of training. In addition, the equipment is only in this college, industry doesn't have any of this kind. | idle |

Source: Researcher, 2023

From the above table, all principals agree that their institutions have a mechatronic or machines send to the institution by the ministry to support training. Out of 5 principals, 04 acknowledge that the mechatronic machines are idle due to their expensive nature of maintenance or lack of expatriates to operate. 01 principal agree that the mechatronic is viable and it is a source of income to the college. The study notes that there are idle hubs in TVET institutions that can be revived to support CBET training.

4.3.4 Lived experiences of principals and Recognition of prior learning toward attaining trainee empowerment

Table 10: Lived experiences of principals on Recognition of prior learning toward attaining Trainee empowerment

| RESPONDENT | RESPONSE | theme |
|------------|--|-----------|
| P 1 | There is need to prepare uniform curriculum for all RPLs towards empowerment o required skills, not yet accredited as a center for assessment and evaluation due to statutory procedure, this has hindered our enrolment and venturing into skilling of the people who are in the industry | procedure |
| P2 | Since CBET is still a new idea it has been a challenge to adopt this cohort because of their uniqueness and therefore there is need for a comprehensive curriculum that understands their needs. | awareness |
| P3 | we have not started implementing it because of statutory procedure but we look forward implementing | procedure |
| P4 | We are in the process of first getting a curriculum then start with Building department | procedure |
| P5 | We are with our first cohort looking for their employers to evaluate and send feedback for certification | procedure |

Source: Researcher, 2023

From *Table 10* all 05 Principals have the knowledge of Prior learning policy and are in the initial stages of implementation.

4.3.5 Reflection on the lived experiences on TVET practices linking training and industry towards attaining trainee empowerment

This section is tasked with carrying out the activities in the hermeneutical cycle of looking for patterns in the themes in order to reveal the findings of the objective. This cycle entails the bringing together, disintegrating views and aligning them towards conclusion. These were done by synthesis method also termed in hermeneutic phenomenology, hermeneutic cycle (Smith *et al*, 2009). From the interpretation of Table 5 and 6 shared lived experience by the Principals and the ILOs is a limited industry for implementing CBET curriculum, from Tables 7 and 8 the theme seen dominant is limited industry, from Table 9 outstanding theme is idle mechatronics and production units and Table 10 the identified theme struggling implementations (see Fig 2)

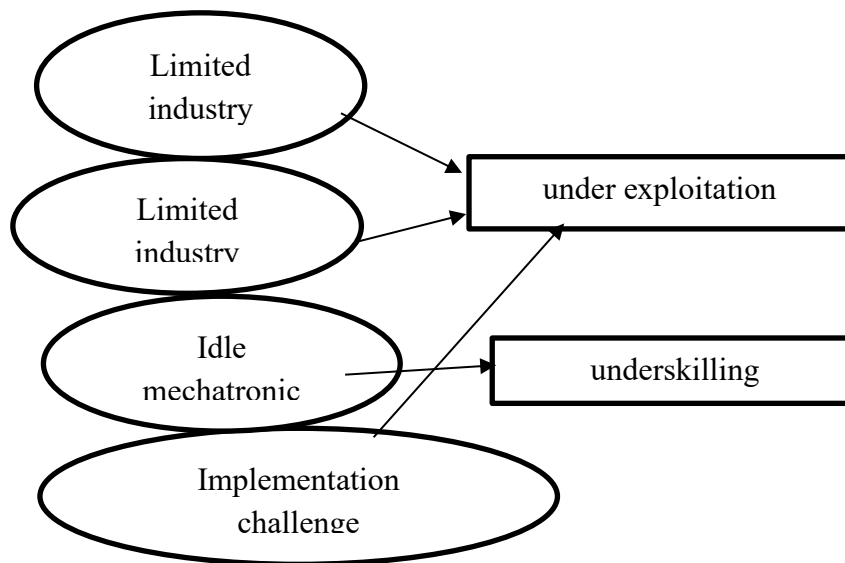


Figure 2: Development of emergent themes and mapping

The development of emergent themes as indicated in Fig 2 facilitated the searching of connections and coming up with collaboration and institutional hubs as two major themes. The study therefore established that on assessing lived experience of Principals and ILOs on TVET practices linking training and industry towards attaining the Trainee empowerment, collaboration and institutional hubs are realities that can reinvent the training and industry link in attaining Trainee empowerment.

4.3.5.1 Under exploitation

The study revealed that there exist resources within reach that TVET institutions can use in order to reskill or trainee towards the attaining of labour market demands. This finding agrees with the demands of Competency Education and Training policy that insist of the concept of partial learning in the instructional institution and partial training in the industry in order to expose trainees and trainers to training resources (Republic of Kenya, 2018). These collaborations according to the Trainee empowerment and its medium-term plan, skill shortage can only be corrected when TVET institutions encourage innovations and linking skill development to industry (Republic of Kenya, 2018). This study also agrees with Dawo & Sika (2021) that adequate involvement of TVET institutional managers through collaboration between TVET and industry with periodically reviewed feedback would lead to provision of relevant practical skills.

4.3.5.2 Under skilling

The study revealed that TVET institutions lack prerequisite approach of grabbing the world of work demand due to the conditioned environment of training. The study findings reveal that in the sampled institutions the Government had supplied mechatronic and *Jitume* labs for supporting education and training, skilling and innovation in TVET institutions however, such conditioned situations are not in the world of work. The study agrees with Musyimi (2021) that the modern equipment in technical colleges is a resource that can unlock the industrial growth since they facilitate skilling for the world of work.

4.3.6 Reflection on the Lived experiences Linking training and industry towards attaining trainee empowerment

The Kenya's blueprint for the development agenda for the next decade was documented in the Trainee empowerment and education and training was a key element in empowerment of the people of Kenya (GOK, 2007). This is also seconded by the

sessional paper no 1 2019 on education reforms on the need for a demand-oriented curriculum that fits trainees in the labour market (GOK,2018). According to Motuku (2018) the actions towards this blueprint are mere mirage and the achievement of the goal is illusive.

Despite the challenges of political interference (Osabwa et al, 2021), qualified trainers (Chepkoech *et al*, 2021), These hubs have been avenues that have enabled the effective implementation of TVET CDACC courses in TVET institutions (Odada & Kariuki., 2023).Secondly Skill gap in Education and training has been observed when trainees miss employability skills and this is evidenced by the number of trainees who leave the companies after attachment to seek employment elsewhere (Federation of Kenya Employers , 2023). This means retention of employees in the industries of attachment is very low. In addition, the increased unemployment rates indicate flooded or supply of trainee is greater that the demand which is specific with a type of skill.

The findings of this study therefore position dual training as pivotal in skilling for the world of work and role industry plays in the training is key.

4.4 Establish how Dewey's concept of democracy can facilitate TVET in Kenya towards attaining Sustainable Development

Dewey's concept of democracy was identified in *Democracy and Education*, a masterpiece for John Dewey's educational thought. Other related literature was analyzed taking assumptions and clarify some views on Dewey's democratic concept and determine the best position for the theory in TVET towards empowering the youths for lifelong learning.

Dewey's educational thought is reflected in two major concepts: the concept of growth and the concept of democracy. The concept of growth entails a reflective development

and acquisition of knowledge towards skill empowerment, attitudes or knowledge. While the concept of democracy, entails educational activities creating a conducive environment that promotes growth. The Table 11 highlight Dewey’s conception of democracy and outstanding themes it also relates the themes to scholars who have expanded the tenets in studies.

Table 11: Analyzed literature on Dewey’s concept of democracy

| AUTHOR /YR | CONTENT | THEME | RELATED LITERATURE |
|--------------|--|-------------------------|---|
| Dewey (1916) | (Dewey, 1916: 104). ‘Trying’ refers to the outward expression of intention or action. It is the purposeful engagement of the individual with the environment or in Dewey’s words, ‘doing becomes trying; an experiment with the world to find out what it is like’ (ibid). Through action an attempt is made to have an impact on the world. ‘Undergoing’, the other aspect of the ‘transaction’ in experience, refers to the consequences of experience on the individual. In turn, in attempting to have an impact, the experience also impacts on us. ‘Undergoing’ refers to the consequences of the experience for us. | Activity based learning | Terna (2020) (Rai & Lama ., 2020) |
| | <i>“Since a democratic society repudiates the principle of external authority, it must find a substitute in voluntary disposition and interest; these can be created only by</i> | Training as partnership | Afubwa (2018) Feng (2019) Kira (2019) |

education. But there is a deeper explanation. A democracy is more than a form of government; it is primarily a mode of associated living, of conjoint communicated experience” (p. 87).

Ploeg (2016)

“A primary responsibility of educators is that they not only be aware of the general principle of shaping of actual experience by environing conditions, but that they also recognize in the concrete what surroundings are conducive to having experiences that lead to growth” (p. 40).

Learner centeredness

(Sakshi et al., 2018)

(Kaur, 2019)

(Sande, 2021)

(Sakshi et al., 2018)

4.4.1 Learner centeredness

According to Dewey, it is the primary role of the teacher to plan for the interesting activities for the learner to acquire specific aspects for activity learning and thus attempt problem solving. Dewey says:

“A primary responsibility of educators is that they not only be aware of the general principle of shaping of actual experience by environing conditions, but that they also recognize in the concrete what surroundings are conducive to having experiences that lead to growth” (p. 40).

Former teaching methods have been embracing lecture method however, classroom management according to Dewey demands trainers to engage trainees in identifying learning activities and thus guide them towards self-directed learning thus creating an environment where every member is involved in shared decision making, as well as of representative democracy in a larger school in which representatives of students and staff make decisions. Democratic classroom management consists of good student-teacher relationships, student authority to make decisions, discussion-based pedagogy, etc.

Democratic human relations often mean that students can get to know each other and their teachers well to form relationships based on trust.

The central aspect in this theme is the person “the trainee” needs and interests being part of the trainers’ planning and training. Just as opined by the empiricist, man is born Tabula rasa, however, pragmatists opine man being a dynamic element and thus with the growth of the sense organs, imprints create interests which facilitate learning and training. The center of the training process must and should always be the empowerment of the trainee who is born free to discover and invent.

4.4.2 Training Partnerships

Dewey opines that

“The problem of social readjustment is openly industrial, having to do with the relations of capital and labor. The great increase in the social importance of conspicuous industrial processes has inevitably brought to the front questions having to do with the relationship of schooling to industrial life.” (Dewey 1938 p 322)

In technical education, the adoption of the laboratory, workshop, practical rooms and practice sites indicate the appreciation of the fact that environment for training must be hands on and foster skill development. Dewey in his mind setting up a laboratory school at Chicago was to set up a model of his pragmatic learning approach that insisted in sharing of roles among trainees, hands on and using problem solving methods for discovery and innovation. Linkages with the world of work through practice confirm to trainees the ability of integrating theory in solving societal problems.

For Dewey in his Democracy and Education:

“A vocation means nothing but such a direction of life activities as renders them perceptibly significant to a person, because of the consequences they accomplish, and also useful to his associates. The opposite of a career is neither leisure nor culture, but aimlessness, capriciousness, the absence of cumulative achievement in experience, on the personal side, and idle display, parasitic dependence upon

the others, on the social side. Occupation is a concrete term for continuity.” p 315

4.4.3 Activity based training

Dewey identifies activity learning methods as key in critical thinking and orienting learners towards solving societal problems. This is also called problem solving approach to learning. This entails exposure to a challenging situation where trainees work in groups and discover the mechanisms and the functionality of the projects in question. The working project becomes a yard stick of the consequent projects towards solving societal problems.

“Its technique is now technological: that is to say, based upon machinery resulting from discoveries in mathematics, physics, chemistry, bacteriology, etc. The economic revolution has stimulated science by setting problems for solution, by producing greater intellectual respect for mechanical appliances.” P 322 (Dewey, 1938)

The ideologies of John Dewey are present in activity-based learning According to Graham (2007), place-based education draws on the progressive idea that education should be multi-disciplinary in nature and that learning activities should be authentic and *“seek to extend learning beyond the walls of the school”* (p. 377). On the other hand, Ord (2012), terms this the fruit of experiential learning. One of the goals of activity-based education is to have students effectively build relationships with each other, which shows evidence of Dewey’s social learning theory. The other goals of activity-based education are to strengthen students’ relationships to their region and the land; to create relationships between humans and their natural communities Dewey was a proponent of making learning experiences centered around student interests and developing socially responsible citizens; all of these real-world, meaningful connections that occur in place-based education, contribute to creating educational experiences that result in socially responsible citizens.

According to Defalco (2016) the need for TVET to vocationalise is to embrace activity-based learning towards improving relations among trainees, empowering their critical abilities and embracing problem solving as an aspect of interacting with society. On the other hand, Ploeg (2016) this interaction orients the young towards being responsible citizens because they are part of the social transformation agenda in the society.

4.5 Implications of Dewey’s Democratic concept in Technical education towards attaining sustainable development

This section presents a synthesis of the tenets of learner centeredness, partnership and activity-based training in Kenya and establish how the concept can facilitate the attaining of the sustainable development.

4.5.1 CBET and Learner centeredness

Trainee engagement is a crucial activity that each curriculum. The role of the trainer is a facilitator, helper and innovator. From a traditional form of training to a current form of training the CBET policy 2018 clearly indicates the :

“It is individualized – learning is trainee centered and the role of the trainer changes to that of a facilitator. Trainees can access learning through different methods and means. And Limited entry restrictions – generally anyone can apply for a programme. Entry is not just based on qualifications or age but will take account of prior achievement. Sometimes a bridge module may be necessary. It is flexible, not time-based – learners progress through units/modules at their own pace and complete which ever modules are appropriate for employment” p. 7 (GOK, 2018)

The curriculum reflects the need for a more relaxed form of training towards skilling for the world of work and this facilitates continuous learning. A curriculum that facilitates skilling emphasizes on competencies required for the world of work as opposed to

theoretical learning. This finding agrees with Sande (2021) who opines that pragmatism is the way to go for Kenyan universities to reclaim a training objective.

4.5.2 CBET and collaborations

Competency Education and training in Kenya has realized that the supply demand model of training was a cause of skills mismatch in Kenya and a factor in the delay of Kenya's achievement of national development goals. The shift to demand driven mode of training, industrial involvement has been priorities and thus enhanced through possible formulation of curriculum, training and even assessment of trainees (GOK, 2018).

Industrial involvement in training facilitates enriching curriculum with current skills, employability skills and provision of future employment. Through dual training and project-based learning TVET in Kenya is reorienting towards lifelong learning and thus provide vital skills for the world of work. This finding agrees with Dawo and Sika (2021) that employability skills can only be sought through engagement of partners and industry.

Trainees can also work on their projects and in TVET fairs through sharing of insights by embracing problem-based learning. Dewey opines that a problem is Thesis that provides an antithesis for another thesis, creation of knowledge is continuous and through these attempts workable solutions for society are achieved.

Given the challenges facing societies in the twenty-first century, what could and should be the role of education in preparing young people for a changing world with complex problems that require new ways of thinking, working, learning, and living together. An education that is for democracy can provide young people with the critical and creative capacities to engage in collaborative and collective responses to these complex challenges.

An education that is for democracy recognizes that young people's agency in the world depends on their interrelations within societies, but also importantly within ecosystems and the finite planet upon which we all rely for our continued existence.

Dewey's democratic concept as examined can provide a basis of CBET training towards realizing sustainable development however, the implicit nature of the concept limits its guidance in the curriculum implementation.

CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

This chapter presents the summary of the study findings, conclusions, recommendations and suggestions for further research. They will be based on the research objectives and research questions. The research was tasked to address a single problem. This was to investigate TVET toward realizing lifelong learning in the light of pragmatic theory.

5.2 Summary

First, it sought to analyze the objectives of TVET Technical Training Institutions in Kenya in the light of pragmatic theory towards lifelong learning. The researcher analyzed

various commissions, Education Acts, journals to establish the objectives of a functional TVET towards lifelong learning. The study found out that the objectives of TVET in light of pragmatic theory are: education and training for skill development, education and training for social efficiency and education and training for democratic participation. The study found out that education for skill development has been overemphasized in all the documents reviewed

The second objective was to assess the lived experiences of Principals and ILOs on TVET practices in linking training and industry in realizing Trainee empowerment. The study found out that Under skilling and under exploitation are major themes. The study found out that under skilling and Under exploitation of the link between training and industry exist due to lack of a clear Government policy framework that guides parties involvement on a praxis for development.

Thirdly, the objective was to establish how Dewey's concept of democracy can facilitate TVET in Kenya towards sustainable development. The study found out that Learner centeredness, TVET industry collaborations and activity based training as possible avenues of facilitating CBET curriculum to skill for attaining sustainable development.

The major findings reveal the efficacy of TVET in realizing Sustainable Development lies in theoretical foundation that is sensitive to the person and environment and this foundation is solely pragmatic.

5.3 Conclusion

The conclusions of the study are in line with the three objectives of the study.

The study first of all sought examine the objectives of TVET in light of pragmatic theory towards lifelong learning and found out that education for hard skill development has

been overemphasized in Kenya thus living Critical problem solving skills for the world of work.

The second objective was tasked to assess the lived experiences of Principals and Industrial Liaison officer on TVET practices linking training with Industry towards realizing Kenya's Vision 2030. The study concluded under skilling and under exploitation are experiences lived by principals and ILOs during the linkages.

The third objective was tasked to establish how Dewey's concept of democracy can facilitate TVET in Kenya towards realizing Sustainable Development. The study concluded that trainee centered training and collaborations are ways Dewey's Concept of democracy can facilitate TVET in Kenya towards realizing Sustainable Development.

5.4 Recommendations

The recommendations are in line with the three objectives of the study.

5.4.1 Promote holistic education and training (critical and problem-solving skills)

The first objective was to analyze the objectives of TVET in Kenya in light of pragmatic theory. The objectives are: education and training for skill development, education and training for social efficiency and education and training for democratic participation. From the literature, education and training in Kenya has always oriented training towards grades, certification and technical skills. This research therefore recommends that CBET training to adopt a holistic training approach that appreciates the entire person.

5.4.2 Promote dual learning in Institutional hubs and industry with a national policy framework

The second objective was to assess the lived experiences of Principals and ILOs on TVET practices linking training and industry towards attaining Trainee empowerment.

The study found out that under skilling and under exploitation as lived experiences of Principals and ILOs. The experiences if addressed the link between training and industry shall facilitate attaining of the Kenya vision 2030. In order to correct skills mismatch that is existing in the country, there is need to promote the growth of institutional production units and promote dual training through a national policy framework that guides industry operations and involvement in training.

5.4.3 Explicitly Adopt Dewey's Democratic concept in CBET Implementation

The third objective was to establish how Dewey's concept of democracy can facilitate TVET in Kenya towards realizing Sustainable Development. The study found out that through the democratic concept tenets; learner centeredness and collaboration, TVET in Kenya can attain Sustainable development. The study recommends an explicit adoption Dewey's educational thought as a foundation to reposition CBET training towards attaining Sustainable Development.

5.5 Suggestions for further research

This study attempted to evaluate the efficacy of TVET in realizing Sustainable Development in Kenya; A pragmatic approach. On the basis of the findings the following are suggestions for further philosophical research recommended.

1. A study should be carried out on TVET and adoption of problematized learning approaches.
2. A study should be carried out on the Skilling and exploitation of Industrial linkages for of attaining Kenya's Vision 2030
3. A study should be carried out on activity-based training as applied in business, science, engineering towards skilling for Sustainable Development.

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APPENDICES

Appendix i: Letter of introduction,

Semi open ended questionnaire for recording participants lived experiences

Dear Sir/Madam,

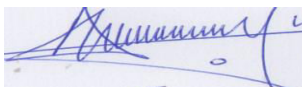
RE: REQUEST FOR RESEARCH DATA

I am a post graduate student from Masinde Muliro University of Science and Technology. I am carrying out a research on **EFFICACY OF TECHNICAL VOCATIONAL EDUCATION AND TRAINING IN REALIZING SUSTAINABLE DEVELOPMENT IN KENYA: A PRAGMATIC APPROACH.**

The data collected from you or given by you will be treated with utmost confidentiality and will only be used for the academic purposes. To enable me conduct this research effectively and successfully, I humbly request you to complete the attached questionnaire form.

Thank you in advance.

Yours Faithfully,



Alfred Simiyu Khisa

EPH/G/04/2015

Appendix ii: Location of the study



Source: [map of western province in Kenya pdf - Search Images \(bing.com\)](#), 2022

b) Semi structure Interview questions

Instructions

1) Please fill this form by writing real experiences about collaborative learning between technical training institutes and industry

2) All information shall be confidential

Question 1 What are aspects of collaborative learning for trainee empowerment towards lifelong learning have you observed as you assess trainees?

a) What have you experienced CBET training?

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.....
.....
.....

Question 2 How has the industrial facilitated dual program for skilling towards attaining the trainee empowerment?

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.....

3. How has the policy on prior learning been adopted and implement in your institution?

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END


Thank you for participating in the study

c) Interview Open ended Question


- i) Comment something on CBET in terms of: training for the world of work?
- ii) : Training for the world of work and employability?
- iii) : Skilling for Trainee empowerment?
- iv) How have you mapped the industries? How many exist?
- v) Say something on production units and mechatronic equipment?
- vi) How prepared are institutions prepared to manage and run Production units through modern machines?
- vii) How has your institution factored recognition of prior learning in training?

Thanks you

Appendix iv: Permits for Research



REPUBLIC OF KENYA




**NATIONAL COMMISSION FOR
SCIENCE, TECHNOLOGY & INNOVATION**

Ref No: 526679

Date of Issue: 15/November/2021

RESEARCH LICENSE




This is to Certify that Mr. Alfred Simiyu Khisa of Masinde Muliro University of Science and Technology, has been licensed to conduct research in Bungoma, Busia, Kakamega, Vihiga on the topic: EFFICACY OF TECHNICAL VOCATIONAL EDUCATION AND TRAINING IN REALIZING SUSTAINABLE DEVELOPMENT IN KENYA: A PRAGMATIC APPROACH for the period ending : 15/November/2022.

License No: NACOSTI/P/21/14140

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SCIENCE, TECHNOLOGY & INNOVATION**

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REPUBLIC OF KENYA

MINISTRY OF EDUCATION
STATE DEPARTMENT OF VOCATIONAL & TECHNICAL TRAINING
Office of the County Director, TVET - Kakamega

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E-mail:cdtvvetwr@gmail.com
When replying please quote our ref. no.

County Director
Technical, Vocational Education
and Training Office
P O Box 2441 – 50100
KAKAMEGA

Ref. No. TVET/WR/TT/GEN/1/3(72)

Date 29th November, 2021

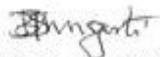
Alfred Simiyu Khisa
P.O Box 2227-50100
KAKAMEGA

RE: INTRODUCTION LETTER FOR ALFRED SIMIYU KHISA A STUDENT OF MASINDE MULIRO UNIVERSITY OF SCIENCE AND TECHNOLOGY

Your letter dated 19th November, 2021 in which you sought authority to undertake research in the four Institutions:- Friends College Kaimosi, Sigalagala National Polytechnic, Shamberere TTI, and Bushiangala TTI within Kakamega and Vihiga Counties on the topic "Efficacy of Technical Vocational Education and Training in Realizing sustainable Development in Kenya: A pragmatic Approach" refers. This office has authorized you to undertake the research and upon completion of your research you are expected to share your findings with this office.

The purpose of this letter, therefore, is to introduce you to the principals of the named institutions for the purpose of this research.

We wish you well.


JOSEPH B. SUNGUTI
COUNTY DIRECTOR, TVET
FOR: PRINCIPAL SECRETARY, STATE DEPARTMENT FOR
VACATIONAL & TECHNICAL TRAINING

COUNTY DIRECTOR TECHNICAL, VOCATIONAL
EDUCATION & TRAINING
KAKAMEGA COUNTY
P. O. Box 2441-50100,
KAKAMEGA

The Principals
- Sigalagala National Polytechnic
- Bushiangala TTI
- Shamberere TTI
- Friends College Kaimosi