

Establish Dewey's Concept of Democracy in TVET in Kenya Towards Realizing Sustainable Development. A Pragmatic Approach

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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 lack employability skills. The study was tasked to establish how Dewey's concepts of democracy can facilitate TVET in Kenya to realize Sustainable Development. The study sought to answer the following research question: how can Dewey's concepts of democracy facilitate TVET in Kenya towards realizing Sustainable Development. The study used rational research design that adopted philosophical analysis and synthesis methods. Both primary and secondary sources were purposefully sampled. Content analysis was adopted to analyze data. The study found out that the change from 8.4.4 education system to Competency Based Education and Training (CBET) in technical education and training was motivated by Dewey's principles of democracy of education and thus full implementation of CBET can lead to Sustainable development in Kenya. However, there exists challenges of unqualified trainers, inadequate resources and poor industrial and training institution linkages to breed skills for the world of work. The study recommends adequate funding of TVET institutions to facilitate TVET in Kenya to have adequate resources for trainee empowerment, coordinate collaborations between TVET institutions and industry in skilling for the world of work and, finally, promote critical skills in problematized learning.

Keywords: Democratic concept, TVET, Sustainable Development, Pragmatic

Introduction

Globally, Sustainable development (SD) paves the way as a means towards mitigating social, economic and environmental challenges of development. Education and training have been taken as prerequisites 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 (Technical and Vocational Education and Training) 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 the 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 for giving trainees required skills, attitudes and knowledge related to occupations towards self-empowerment and lifelong learning (Darol et al., 2020). TVET being a major workforce supplier 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 Sustainable Development Goals(SDGs) (Muigua, 2020), that can achieve national development agendas 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 (Okoth, 2022). However, two TVET models that adopt formal sector firm based and non-formal training are of interest in 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. 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 the African continent, Ahadzie (2003) opines that social, economic and political conditions in African countries have made TVET systems in Africa 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 industrialisation and in company approaches in technical training has had significant impact in Africa TVET systems (AU, 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 path 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 approaches while others a 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).

Kenya is a developing nation and Kisirroi (2019) looks at the acts of parliament and commissions of inquiry as great contributions 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 of 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 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; focusing on quality and relevance, 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 to attain 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 an effect on enrolment (Kamar, 2022), resource allocation (Arunga, 2018) and even curriculum implementation in TVET. This has caused internal inefficiency in Technical Training Institutions (Okinyi et al., 2021), weak monitoring, and the evaluation of TVET system is heavily supply driven rather than demand driven (Amutabi, 2021) with a low image and stigmatization (Osuanyi 2014). Despite the above, political goodwill has facilitated TVET curriculum with empowering youths towards employability and lifelong learning by embracing competency training (GOK, 2018). Competency education and training have raised concerns among scholars in terms of the cost (Odada & Kariuki, 2023) and

preparedness (Osawa *et al.*, 2023). The reality of the situation indicates that few institutions have presented trainees for summative assessment, attained competent status for the world of work demands, or produced demand compliant graduates (Federation of Kenya Employers, 2023). Of the few institutions that have accomplished this, there is still a gap between the required skill and what the industry is demanding as is evidenced by the still skyrocketing unemployment rates (Musau, 2023). The policy field of TVET is relatively insignificant, even compared to general and higher education. Investment in TVET is relatively low. And TVET research also has hardly any significance in the research landscape. There is thus a discernible contradiction between the current and growing perception of TVET as a policy-making field and its traditional and actual importance. So how can the role of TVET be strengthened in the political perception and in relation to actual political decisions? Against this background, it becomes clear what significance supranational cooperation has for strengthening TVET. Our study, therefore, is tasked to assess the applicability of Dewey's educational thought in the implementation of CBET in Kenya towards creating lifelong learning among trainees to fix the training industry gap that exists at the moment.

1.1 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 employable skills, knowledge and attitudes towards lifelong learning. The government of Kenya, through policy framework and funding, has tried to reinvent and re-position training to produce a skilled human resource that is relevant to society and provides vast knowledge, skills and attitudes towards realizing its development agenda.

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

1.2 Specific Objectives of the Study

The study aimed at establishing how the Dewey's concept of democracy can facilitate TVET in Kenya towards realizing Sustainable Development.

1.3 Research Question

The research question was: how can Dewey's concept of democracy facilitate TVET in Kenya towards attaining Sustainable development?

1.4 Theoretical Review

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 making sense of observations by providing an overarching structure of the studies (Yamauchi et al., 2017). 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, roles of the teacher, curriculum and finally the content for effective training.

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

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

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

According to Adeleye (2017) the influence of pragmatic thought in Nigerian schools has revealed a shift away from teacher centered curriculum training, with limited student interaction with real life situations and environments, towards the adoption of a student centered approach and participatory learning. In addition, the study by Sulyman and Oliniyi (2023) 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 that impact individuals and society; for instance, rape, murder and unemployment.

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

Firmanto’s et al. (2019) study on pragmatism, that looks at the educational philosophy of John Dewey in learning information literacy in Indonesia, found out that Dewey’s theory is relevant in learning information literacy. However, Dewey’s view also poses a threat because it

never considers larger questions about the nature of reality but tends to remain at the level of practicality, focused on solving problems faced by human beings.

In Kenya, the study carried out by Mbehero et al. (2022) on the analysis of the core competencies of CBC in light of pragmatic theory found that Competency Based Training in Kenya can only be implemented effectively when teachers are well acquainted with Dewey's educational thought on the adoption of learners' interests while planning for learning activities and creating a conducive learning environment. In addition, the study by Mugambi and Chepkonga (2022) on the 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 the prior experiences of learners and their interests. The above studies are only carried out on general education and higher education. The study aimed at establishing how democratic concepts of education can facilitate TVET in Kenya towards attaining sustainable development by identifying possible democratic concepts in the implementation of CBET, and then assessing whether they can reinvent TVET towards realizing sustainable development in Kenya.

2.1 Dewey's Concept of Democracy

John Dewey (1859-1952) was one of the most significant philosophers of the 20th century who developed a philosophy that called for the unity of theory and practice (Feng, 2019). Born in Burlington, Vermont in 1859, he encountered diverse views and influenced by Charles Sanders Pierce and William James he produced a philosophical theory that many scholars have termed 'instrumentalism,' which refers to Dewey's pragmatic approach to education (Kaur, 2019). His theory found relevance in his Laboratory school in Chicago. Dewey's philosophical thoughts can be summarized as follows.

The 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 (Feng 2019). 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 fulfills our purpose. Thus, true knowledge was gained through methods of natural science and absolute knowledge was not easily attained by human abilities (Feng 2019).

Human beings are social beings by nature, an insight embraced by the axiological perspective of Deweyan educational thought, which is based on subjectivity (Terna, 2020). Thus, the influence of others 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 society; hence, there are no fixed values since they change with time and place (Adeleye, 2017). Aims and habits in Dewey's philosophy are revised often and the ethical considerations of such an

approach are geared towards being inclusive of marginalized groups, especially youths (Roberts, 2005).

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

According to Dewey, many educational problems exist due to a kind of dualism between thought and action. Thus, a functional pedagogy that is interested in the learner's needs and environment and that also designs the curriculum to reflect learners' needs, is required to address problematic assumptions of the past and facilitate self-realization and societal transformation, and thus, lifelong learning (Miettinen, 2000).

Reflection as a tool of solving problems does not remain at merely posing solutions but continuously searches for the best possible workable solution to solve existing problems in society (Miettinen, 2000). Thus, such pedagogy assumes that children are not *tabula rasa* (blank slate) when they come to the school environment. Some activities and interests from home can be raw material for the teachers to factor in during lesson and curriculum orientation (Roberts, 2005).

A functional pedagogy thus demands that teachers are expected to reinstate into experience (the subject matter of curriculum) the interests of their students and psychologize the curriculum by constructing an environment in which problematic situations shall be encountered by the learner to stimulate learning by innovation or correction (Darwish, 2009). In order to implement such a complex curriculum while refining it to reflect a specific context, demands that teachers be highly skilled professionals, knowledgeable in their subject matter, trained in child psychology, and skilled in techniques for providing specific and necessary encouragement to stimulate specific outputs so that the subject matter becomes part of the learners' experience as they grow up (Osamah & Allazzi, 2009).

2.1.1 Social Change

Dewey is a highly recognized scholar who developed a well-designed pragmatic approach that laid foundations for the creation of a democratic classroom and thus facilitate a democratic society (Roberts, 2005). This view opened a new discussion in the conceptualization of education and the role of education for 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).

According to Ord (2012), experiential learning is based on assumptions that people learn best when they are involved in the learning experiences, knowledge is self-generated and the experience of learning has to be meaningful; finally, the personal disposition and commitment

to learning is highest when they learners are free to set their own learning objectives, aims and goals. Pragmatic theory does not assume absolute standards of life exist eternally and permanently for an effective type of education and training to be possible (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 and a child centered approach, Dewey's emphasis on student freedom involves 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 with a view towards innovation, interaction and theory-testing through looking at specific consequences that address existing problems (UN, 2021).

2.1.2 Learner Development

First and foremost, this progressive approach to education 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 problems and find solutions within that context, thus providing evidence of effective training.

However, Dewey's learner-centered approach is based on the teacher's ability to reorganize training that matters and that favors learner interaction, stimulating learning and innovation. Dewey's recognition of prior learning in analyzing the conventional approach of his time targeted the educational practices of his day which had assumed trainees (learners) were passive recipients of authoritarian works and political structures, and thus prevented learners from self-discovery and communal inquiry; learning was a monopoly organized by set institutions. Instead, Dewey assumes learners' local environments are rich in content and experiences. Learning ought to move from the Known to the Unknown, which helps the effective delivery of TVET to realize life-long individual development, and by extension, socio economic development. Thus, opposed to the "Tabula Rasa" assumptions of Empiricists, Dewey formulated a rational empiricist approach to the process of knowing (Tabeli, 2015). Interests, activities, and prior experiences are necessary elements in the process of knowing.

2.1.3 Participatory Learning

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 the ability of education practitioners to link related subjects, i.e. 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).

The notion of 'Intersubjectivity' has also been addressed in relation to a teacher centered conception of education (Andafu & Simatwa, 2014). Dialogue between the teachers and students is to be encouraged during and after learning. Education is a social act, students are to collaborate, discuss and be directed towards helping others by transforming the totality of society. Thus, education is a project of freedom, self-reflection, self-managed life, and, in particular, involves notions of critical agency (Giroux, 2010).

2.1.4 Intersubjectivity

According to Ord (2012), Dewey's experiential learning theory is vital in providing a theoretical ground for any study related to working with youth. In addition, it clearly defines the teacher's demands in terms of teacher training to orient a curriculum with clear goals but temporary objectives towards specific actions. In the analysis of *Teachers Perceptions on Critical Thinking in Jordanian Secondary school*, Osamah & Khaled (2001) observed that education geared toward 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 (2016) opines that interest and activity are key elements for personal development and thus organizing class around activities that build off student interests must be clearly stated within the curriculum. This reinforces the need for strong teacher training towards empowering the young with vital skills for lifelong learning.

Social change is pushing all levels of education to adjust and fit with the changing demands of work. However, for a diverse culture Dewey's theory can serve as a heuristic tool in reconceptualising what is research and what goals can be met within a given framework (Jia, 2005). Moreover, according to Maddux and Donnett (2015), Dewey's theory is vital in service training. On the other hand, it is only DeFalco (2026) who attempted to evaluate Dewey's theory on Vocational Education and Training and he observes that vocational training is still seen myopically, as preparing students for the world of work and thus includes only vague expectations when it comes to addressing social problems. In addition, vocational education and training has overemphasised "Learning to earn," an ideology far removed from Dewey's pragmatic thought. Thus, simply assuming that vocational education and training in any country is oriented towards problem solving and so, by extension, well grounded in Dewey's theoretical framework, would be a hasty generalization.

2.2 Concept of Sustainable Development in Kenya

"Sustainable development" is terminology that is being used in the 21st century to define a way of living that strikes a balance between the present and future generations without infringing or compromising lives, environment or standards (Mensah, 2019). The United Nations has

defined the concept of sustainable development in a way that identifies social, economic and environmental pillars as key to planning for future generations (United Nations, 2021).

Education for sustainable development has been identified by the United Nations as an agenda that developing nations and developed nations can adopt to facilitate equality and empowerment of the young towards lifelong learning (Mensah, 2019). Key elements in education for sustainable development, as identified by Sustainable Development Goals (SDGs) goal 4 and Goal 16, include: conservation of environment, human resource management, good citizenship. To attain these goals, nations have prioritized lifelong learning and skill development to cultivate a citizenship that is responsive to changing times (Muigua, 2020).

2.2.1 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 relevant modern skills like digital literacy to meet the digitalization of the world (ADEA, 2020). In attempting to design principles of university education, Cronholm (2021) identified the need for education to address the whole person rather than part of the person for employability. On the other hand, Palmer (2020) identifies the informal sector (civil society) as a huge contributor in empowering the youths for lifelong learning.

The rift between industrial demand for competencies which still haven't been successfully facilitated in training versus the reality of training TVET institutions, demands a philosophical reflection on a possible theory that can guide training for lifelong learning (Osabwa et al., 2022). Our study sought to establish whether Dewey's concept of democratic education can facilitate TVET in realizing lifelong learning in Kenya.

2.2.2 Skill Development

The Kenyan Government has adopted a global initiative to empower future generations through education and training (GOK, 2007). The Kenya Vision 2030 prioritizes the social pillar as key in encouraging a responsible society and education is a legitimate means of achieving the goals and objectives of this pillar. The change from 8-4-4 education system to CBET facilitates skills in environmental literacy, work ethic and employability (GOK, 2018). The core competencies, common and basic competencies have been outlined in different occupational standards to facilitate training for the world of work (GOK, 2018). The skills required to reinvent TVET towards facilitating an industrialization agenda in Kenya lies in a TVET system that is responsive to change and able to initiate innovativeness and embrace outcomes (GOK, 2018).

3.0 Research Methodologies

The study adopted a qualitative analysis of texts and systematic analysis of the government of Kenya commissions and taskforce reports in order to establish whether Dewey's concept of democracy can be applied in TVET to attain lifelong learning among Kenyan youths and bridge the existing unemployment and skill mismatch.

3.1 Research Design

The study adopted constructivism as its paradigm. According to Kamal (2019), this paradigm is best suited for qualitative studies with a philosophical orientation. 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 cognition (Kisirkoi, 2019). The study used rational design. According to Mbehero et al. (2022), a rational design embraces logical analysis and argumentation whereby premises are stated and logical rules followed to arrive at a sound conclusion, solutions, and recommendations to the specific problem under study.

This design was also adopted because of its ability to aim at clarifying, reflecting on assumptions, and providing tentative logical conclusions (Osabwa, 2021). The design also facilitates tracing for consistency among different concepts in order to free technical education and training from contradictions (Ibanga, 2020). In sum, the study used this design to clarify TVET objectives, Kenya Vision 2030, the training industry link, and the applicability of Dewey's concept of democracy in reinventing TVET to attain sustainable development in Kenya.

3.2 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 simultaneously and apply them to a single study. This study adopted Conceptual analysis also known as philosophical analysis. This method adopts analysis and synthesis methods.

3.2.1 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 is witnessed in reality; 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).

3.2.2 Synthesis Method

This is a philosophical method that is concerned with the combination of elements of a system in order to create an over-arching judgment or clear understanding of the whole (Osabwa, 2021). This method finds its origin in analysis and thus it complements philosophical analysis. The aim of synthesis is to obtain a clear, conclusive statement of the findings of the various research to gain clarity and consistency (Angadi, 2019). Synthesis adopts conclusions from each

concept, categorizes them, compares the similarities and differences, and brings out the conclusion from all the studied literature (Singporn & Nuangchalerm, 2021). The method was also used in the summing up of critical concepts of Dewey's educational thought that apply to TVET, and that have guided TVET towards realizing the country's development agenda.

3.3 Data Collection

Sources of data collection were purposively sampled. Both primary and secondary sources of data were used. The primary sources included, but are not limited to, Dewey's texts on democracy and education, experience and education, Kenya vision 2030 and CBET policy documents TVET ACT 2013 and CBET policy 2018. The secondary sources included journals and repository papers and published theses and works.

3.4 Data Analysis

Through conceptual analysis, a research question was developed, content from Dewey and CBET concepts was sourced, biases and assumptions were drawn, units and categories of coding were developed, which entailed summarizing the contents under themes without coding but with notes. In this way, the relevant information was summarized repeatedly, guided by keywords and phrases already mentioned. The series of summarizing, which were manually done, was aimed at bringing out the basic results with regard to the viewpoints of each data input and to remove discrepancies and irrelevant data. The reasons for discarding particular aspects of each summary result were noted while each summary was being prepared in order not to forget the reasons for their exclusion. Pieces of information gathered through the summaries were synthesized, interlinked and paraphrased to make them more condensed, concise, coherent and manageable, being careful not to change the meaning of the data when combining the themes. The end result was a more concise and refined summary of the relevant literature regarding the key issues that were presented.

3.5 Validity and Reliability

Validity in philosophical research is determined from the truth value, based on how the conclusion is sought (Nigar, 2020). In a deductive argument, the conclusion follows necessarily from the premises and the truth value can either be valid and sound or invalid and unsound.

4.0 Findings and Discussion of the Study

The study is an attempt to answer how John Dewey's democratic concept can facilitate TVET in Kenya towards attaining Sustainable Development. The findings of the study reveal that Dewey's democratic concept, as demonstrated in his works *Democracy and Education* and related journals, indicate that 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 improving skills, attitudes or knowledge. While the concept of democracy entails educational activities creating a conducive environment

that promotes growth. The study identified the following themes in Dewey's concept of democratic concept as key in guiding TVET towards attaining Kenya Vision 2030.

4.1 Learner Centeredness in Training

According to Dewey (1916), the primary role of the teacher is to plan for interesting activities for the learner to acquire specific aspects of active learning and thus attempt problem solving.

Former teaching methods have embraced lecture methods, however, classroom management, according to Dewey, demands trainers to engage trainees in identifying learning activities and thus guide them towards self-directed learning. This creates an environment where every member is involved in shared decision making and helps lead to a representative democracy in larger schools where student representatives and staff make decisions. Democratic classroom management consists of good student-teacher relationships, student authority to make decisions, and discussion-based pedagogy. 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, that of "the trainee" needs and interests, being part of the trainers' planning and training. Unlike empiricist assumptions that people are born *tabula rasa*, pragmatists suppose that people are dynamic, and thus the stimulation of our various sensory organs can readily create interests that 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.

This view is in agreement with the prospects of Competency Based Education and Training (CBET) policy in Kenya that has been characterized by trainee empowerment, giving trainee activities that ignite creativity and innovation (Republic of Kenya, 2021). It is also in agreement with the Kenya Federation of Workers (2023), that there is need for stakeholder involvement in providing attachment and internship opportunities towards upskilling in technologies, new trends in the world of work, and existing societal problems.

4.2 Partnerships Training

Dewey (1938) believes that industry, education, and training cannot be done in a vacuum. In technical education, the adoption of the laboratory, workshop, practical rooms and practice sites indicate the appreciation of the fact that the environment for training must be hands on and foster skill development. Dewey (1938) set up a laboratory school in Chicago modeled on his pragmatic learning approach that insisted on sharing roles among trainees, using hands-on 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.

The findings in the analyzed primary sources and secondary sources reveal that the source of problematized learning is the interaction of training and society and failed solutions. This finding agrees with Chepkoech et al. (2021) and that increased partnerships expose students and trainers to new training materials, equipment and projects towards that avail workable solutions

to existing societal problems. However, Osabwa et al. (2021) observes that these industrial linkages aren't the facilitators of an effective training in a pragmatic set up; rather, it is the philosophical orientation of training in technical and training institutions that is the cause of the missing link in training and industrial engagement.

Trainees can work on their own projects and through participating in TVET fairs, share insights by embracing problem-based learning. Dewey thinks that a problem is a thesis that provides an antithesis for another thesis; the creation of knowledge is continuous and through multiple attempts workable solutions for society are achieved. This thought agrees with the findings of Mbii et al. (2024) that found out that achievement of sustainable development goals in junior secondary schools in Kenya is possible through community service learning and citizenship education.

4.3 Activity Based (Problematized) Training

Dewey (1938) identifies activity learning methods as keys in critical thinking and orienting learners towards solving societal problems. This is also called the 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.

Our finding agrees with Kaur (2019), who established that place-based education draws on the progressive idea that education should be multi-disciplinary in nature and that learning activities should be authentic and go beyond the school setting. 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 (Ord, 2012). The other goals of activity-based education are to strengthen students' relationships to their region and the land as well as create relationships between humans and their natural communities. Dewey (1938) 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. Our analysis agrees with Defalco (2016) that the need for TVET to provide vocational education involves embracing activity-based learning to improve relations among trainees, empowering their critical abilities and embracing problem solving as an aspect of interacting with society.

5.0 Implications of Dewey's Democratic Concept in Technical Vocational Education and Training in Kenya Towards Attaining Sustainable Development

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

First and foremost, trainee engagement is a crucial activity of 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 competencies required in the world

of work. The curriculum reflects the need for a more relaxed form of training geared toward skills for the world of work and also facilitates continuous learning. A curriculum that facilitates skills emphasizes the competencies required for the world of work as opposed to theoretical learning. From the standpoint of policy orientation, TVET CBET curriculum has prioritized learners' activities and trainee empowerment. However, there still exist challenges to enhancing skills and empowering trainees. These challenges include limited resources, unqualified trainers and an exam-oriented system in assessment process limiting access to TVET.

Secondly, 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 and industrial involvement has been prioritized, which can be aided through the formulation of curriculum, training and even assessment of trainees. However, although our analysis reveals the need for partnerships in training, industrial involvement is still limited due to narrow mandates and industry policies. Industries have prioritized production and profits as opposed to investing in meeting institutional demand for skilled work. The lack of a common goal between educational institutions and industry hinders effective training for lifelong learning.

Finally, 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 filled with complex problems that require new ways of thinking, working, learning, and living together? Learning focused on problem-solving provides key projects for students to search for possible solutions to living in a complex society. 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. There exist new trends in training, especially those that prioritize Artificial Intelligence, Robots, Simulations and Integrated System, but there is a general feeling that overreliance on technology, along with exam-oriented educational systems, limit the human brain from cultivating critical skills and effectively applying them. It is, therefore, our view as researchers that critical skills for trainees be developed that engage current technologies while also targeting innovativeness that can find application in the world of work. And this can only be done by adopting Dewey's concept of democratic education.

5.1 Recommendation

Our analysis recommends continuous and maximum funding of TVET programs by the Government of Kenya to provide adequate resources that enable the creation of conducive environments for training and building skills useful for the world of work. Our research also recommends coordinated industrial-institutional linkages and partnership to facilitate an environment to encourage innovations and develop workable solutions for the problems existing in society. Finally, our research recommends that CBET curriculum in its core, common and basic units prioritize critical skills for trainees that enable them to tackle complex problems that facilitate lifelong learning.

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