



(RESEARCH ARTICLE)



## Trainers' competence in the knowledge of the subject content in technical vocational education and training institutions in Bungoma County, Kenya

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### Abstract

The purpose of the study was to examine Technical Vocational Education and Training (TVET) Trainer's competence in the knowledge of the subject content in technical vocational education and training institutions in Bungoma county, Kenya. Understanding trainers' competence in the knowledge of the subject content has implications for the quality of training because it influences trainers' motivation, informs curriculum designs and helps to develop department trainer development programs. The study adopted a descriptive survey design. The study targeted trainers from the major Technical Vocational Education and Training institutions in Bungoma county, Kenya. The researchers constructed a questionnaire which was used to gather data, which was later analyzed using SPSS. Results indicated that most trainers were satisfied with the training organization and agreed that the tasks and assignments were adequate for teaching and learning. However, majority noted that they are not well motivated, there were delays in provision of timely feedback to the trainees, and that the instructional equipment and materials were inadequate for training and learning. The study concluded that it's important for all aspects which impact on the quality of teaching and learning to be available for competence development. The study recommended that Technical Vocational Education and Training institutions should lobby the national and county government for more funds to enhance trainers' salaries and wages as a way of motivating them; increased budget for Technical Vocational Education and Training institutions to enable them purchase the latest training tools, equipment and materials; and that Technical Vocational Education and Training institution administrators control the quality of training by establishing quality assurance office to coordinate all levels of Technical Vocational Education and Training in Kenya.

**Keywords:** Competence; Content; Knowledge; Trainers'; Subject

### 1. Introduction

Around the world, Technical and Vocational Education and Training (TVET) is widely seen as having a key role in promoting both economic and socio-economic growth, increasing productivity, empowering citizens and alleviating poverty. Yet the quality of TVET in terms of trainees' outcomes and teaching inputs is variable ([UNESCO-UNEVOC, 2014]). The effectiveness of all education systems depends critically on the quality of teaching and learning in the classrooms, workshops, laboratories and other spaces in which the education and training takes place. While outstanding trainers, engaged trainees, well-designed courses, facilities which are fit for purpose, and a good level of resources are necessary if any kind of educational provision is to be excellent, they alone are not sufficient. The real answers to improving outcomes from vocational education lie in the „classroom“, in understanding the many decisions „trainers“ take as they interact with trainees ([Lucas, B., et al 2012])

The overarching goal of vocational education is, enabling people to learn how to do things to a standard set by experts from the occupation into which they are progressing. The primary outcome of vocational education is expertise – being

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able to do skillful things of a kind and in an area of work that is quite clearly specified and understood. This distinguishes vocational education from more academic forms of education where the valued goal is to be able to write and talk about something; to be able to explain, critique, theorize and justify (Lucas, B., et al 2012). To improve TVET in all of its many forms there is need to understand the teaching and learning methods which make it work best. In short a robust model of vocational pedagogy – the science, art and craft of teaching and learning vocational education. There is need to describe with clarity and confidence the teaching and learning methods that are most effective for a range of different trainees seeking to acquire skills, competences and dispositions in many different contexts (Unesco-Unevoc, 2014).

In 2014, a global monitoring report about teaching and learning: achieving quality for all noted that there is a global learning crisis. Despite the efforts to improve universal access to education, 250 million children are not learning even the basic skills, let alone the skills they need to thrive in the world of work. The report stresses that more efforts should be made to ensure that children have real opportunities to learn when they go to school and that governments invest in well qualified and motivated trainers to ensure that all children are appropriately educated (UNESCO. 2014). Workforce training is now recognized as highly important while previously vocational education was seen as a “secondary-class” education compared to university education. However, there is concern that the skills necessary in this new century, especially those in new processes and services, are not yet available in general education institutions, especially in at least the developed countries (Fien et al 2009).

### 1.1. Technical, Vocational Education and Training in Kenya

In Kenya, Technical, Vocational Education and Training (TVET), includes Business education hence it is known as Business, Technical, Vocational Education and Training (TVET). The most significant legal instrument guiding the policy formulation and reforms for this education sector is the TVET act of 2013. The act provides that the objective of TVET is to provide relevant and quality knowledge, values and skills for purposes of academic progression and employment in the labour market to the larger number of persons in an affordable way, and to enhance the productivity capabilities of the individual for employment and self-employment (GoU, 2008).

The TVET system comprises– public; private; and firm based training. There are 210 public institutions; about 300 private training service providers and an unknown number of apprenticeships and enterprise based training programs operating in Kenya. The national vision is to develop a TVET system that will enable greater access, and realization of the full potential of Kenya’s human resources. For the benefit of the economy, Business, Technical, and Vocational Education and Training (TVET) is capable of producing a competent and polyvalent workforce with practical work skills, entrepreneurship skills and orientation that are essential for employment (MoEs, 2011). Over the last five years, all TVET institutions have experienced increases in trainees’ enrolment and the demand is continuing to rise. The demand for employment oriented skills training will therefore continue to raise both in the medium term and in the long run. In the light of all the above realities, TVET needs appropriate recognition and support so that it can have a significant impact on poverty eradication within the context of the pro-poor economic growth strategy (Okinyal, H. 2012). Realizing the importance of TVET in facilitating skills development for the socio-economic and technological development, the Kenyan government has been at the forefront in advocating for reforms in the TVET education subsector. A 10-year TVET strategic plan 2011-2020, launched in October 2012 and titled „Skilling Kenya“, emphasizes a more comprehensive system of skills development to raise the quality and economic relevance of TVET. The strategic plan targets to reform the way TVET programs are delivered to different groups so as to improve the competences of graduates and make them competitive in the labour market (MoEs, 2011). The graduates should be competent enough to fit into Kenya’s labour market, which has had a shift in economic structure. The predominantly agricultural economy has steadily shifted to industry and services, tourism, construction, oil and gas. All these have increased the demand for skills in the labour market (w o r l d b a n k , 2 0 1 2 ). However, it has been noted that most graduates from training institutions fail to get absorbed into the Kenyan labour market because their skills profile are ill-suited to find appropriate employment, yet opportunities do exist (MoFPFD, 2014). This was further confirmed by a School-to-Work Transition Survey (SWTS) carried out in 2015 which revealed that young persons with tertiary level of education had higher levels of unemployment (12 percent) than the national average (7 percent) (Kenya bureau of statistics, 2016). An example is that of the flower export enterprises. When these businesses began in Kenya, there was no skilled labor to carry out the work, so employees were imported from Kenya (wood, J.C.M. 2008).

Similar cases are found in the hotel industry, oil and gas and the road construction sectors where most workers are foreign yet Kenyan TVET institutions produce many graduates in these fields annually. In almost all African countries, large numbers of graduates coming out of school system are unemployed, although opportunities for skilled workers do exist in their economy (Unesco 2007). The purpose of the paper was therefore to examine trainers’ perception of the teaching and learning approaches used for competence development in the TVET institutions in Kenya. Understanding trainers’ perceptions about the way teaching and learning is conducted has implications for the quality

of training because it influences trainers' motivation, informs course designs and helps to develop department/trainer development programs. The study was guided by the research question; "How is the teaching and learning conducted in the TVET institutions in Kenya?"

The study was conducted between February, 2018 to August, 2018 and it was limited to only engineering/technical fields.

## 1.2. Theoretical Framework

The study was anchored on two theories, the constructivist learning theory and vocational pedagogy

### 1.2.1. The Constructivist Learning Theory

The constructivist theory explains how people acquire knowledge. The theory suggests that humans build up knowledge and meaning from their experiences (Bada and Olusegen, S. 2016). The major assumption of constructivism is that knowledge is constructed, it's not independent of the trainee. Some of the prominent philosophers associated with constructivism are Piaget (1970), Blumer (1969), Kuhn (1996), von Glasersfeld (1989), and Vygotsky (1978). However, Piaget's theory of constructivism in particular, has had a profound impact on learning theories and teaching methods in many educational reforms. The major philosophical and epistemological assumptions of constructivism are:

- There is a real world with multiple realities.
- The organization of the world is formulated in the mind based on interactions and understanding.
- The mind generates symbols for identifying and translating the world.
- Human understanding is inspired and progresses from different views, experiences and communal interfaces.
- Meaning is an outcome of an interpretive process which depends on experience (Vrasides, C.2000).

Constructivism regards learning as an active process in which trainees construct new knowledge based upon their prior knowledge. Constructivism is learner-centered, assuming that trainees learn better if they construct knowledge for themselves, rather than being led by an instructor (Vrasides, C. 2000). Constructivism is grounded in several philosophical traditions with three orientations: individual constructivism (Piaget, 1969, 1971), social constructivism (Vygotsky, 1978) and radical constructivism (Von Glasersfeld, 1994) (Hadierrout, S. 2005). These approaches are not mutually exclusive. They are closely related to each other. Whereas individual constructivism concentrates on individuals and their learning, social constructivism focuses on groups and their learning within socio-cultural contexts. For radical constructivism there is no knowledge independent of that constructed by trainees, because knowledge is based upon constructions that are not tied to any external reality (Hadierrout, S. 2005).

## 1.3. Implications of Constructivism for Teaching and Learning in Technical Vocational Education and Training (TVET)

The theory of constructivism is that learning is an active process. In their article about constructivism learning theory (Bada and Olusegen, S. 2015) quote Brooks and Brooks (1993) who reviewed a large portion of literature on the descriptions of "constructivist trainers". They consider of a constructivist teacher as someone who will:

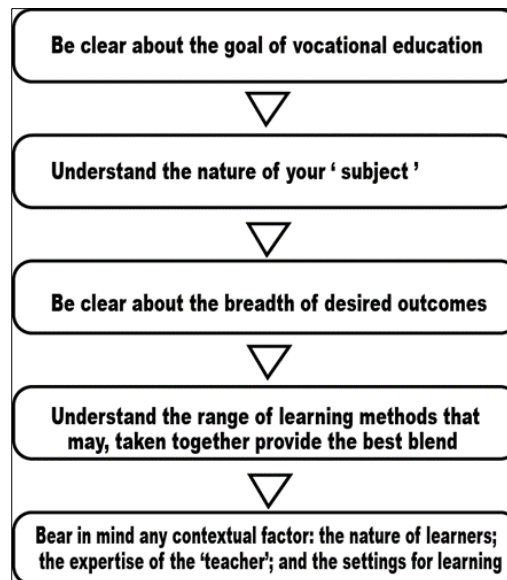
- Inspire and allow student independence and resourcefulness;
- Use various instructional materials and encourage trainees to use them;
- Find out about trainees' understandings of concepts before giving his /her own understanding of the same;
- Encourage trainees to discuss with their teacher and amongst themselves;
- Encourage trainees to ask questions and to find solutions amongst themselves;
- Provide time for trainees to build relationships and create illustrations;
- Evaluate trainees' thoughtfulness by assigning open tasks.

Therefore, from the perspective of constructivism, the primary role of the trainer is to build and maintain a collaborative environment, where trainees are allowed to build their own skills, and the trainer works as a guide (Bada and Olusegen, S. 2015).

## 1.4. Vocational Pedagogy Theory

The second is the Vocational Pedagogy Theory. „Vocational pedagogy" is defined by (Lucas, B. 2014) as "the science, art and craft of teaching and learning vocational education". "Or you could say more simply that vocational pedagogy is the sum total of the many decisions which vocational trainers take as they teach, adjusting their approaches to meet the needs of trainees and to match the context in which they find themselves". The theory of vocational pedagogy as coined

by (Shulman, L.s. 2005) refers to “the type of teaching that organizes the fundamental ways in which future practitioners are educated for their new professions”. As stated „signature pedagogies“ make a difference. “They form habits of mind, habits of the hand and habits of the heart. Whether in a lecture hall or a laboratory, in a design studio or clinical setting, the way we (trainers) teach will shape how professionals behave” ... Shulman further explained a „signature pedagogy“. “It has three magnitudes: surface structure, deep structure, and an implicit structure. Surface structures consist of concrete, operational acts of teaching and learning, while deep structures reflect a set of assumptions about how best to impart a certain body of knowledge and know-how. The implicit structure includes a moral dimension that comprises a set of beliefs about professional attitudes, values, and dispositions” (Shulman, L. S.2005). „Learning by doing“ is normally the way in which vocational pedagogy is termed, but such understanding complicates the fact that there is no one vocational pedagogy, just as there is no one idealized notion of a TVET trainer (Wheleban, L. 2010). Some fundamental questions and answers underpinning the theory of vocational pedagogy are indicated in the figure 1.



**Figure 1** The theoretical underpinning of vocational pedagogy

1.4.1. Source: [2]

Understanding vocational pedagogies enables policy-makers to advance models and tools which can help TVET trainers more effectively match teaching and learning methods to the needs of their trainees and achieve the wider goals of vocational education and training (CEDEFOP,2015).

## 2. Literature Review

Several studies in different countries have been conducted about teaching and learning in TVET.

In South Africa, (Arfo, 2015) did a comparative analysis of technical and vocational education and training policy in selected African countries. The study explored, analyzed and compared the TVET policies of South Africa, Ghana and Nigeria to identify their nature, similarities and differences. The analysis revealed that the implementation of the TVET policies is poor in all countries and that the policies had failed to provide needed skills for employment, economic and national development. The TVET experts agreed on the fact that graduates were poorly trained and are not matching to the needs of the labour market. The sector is faced with many challenges, which include inadequate funding, lack of proper teaching and learning materials, and bad governance.

This is in contradiction to the findings of the European Centre for the Development of Vocational Training (CEDEFOP 2015), who noted in their paper about vocational pedagogies and benefits for trainees, that the design and use of learning materials are critical elements of teaching and learning. Adequate provision of learning materials is positively associated with high levels of attentiveness by trainees. The learner survey conducted revealed that 91.3% of trainees reported that they frequently gave all their attention to the tasks in lessons and agreed that their school offers enough learning and training material, compared with 8.7% of those who reported that they seldom gave all their attention to learning tasks in lessons.

In Kenya, (Kitainge, 2016) researched about automotive training in TVET Institutions. The sample comprised of 31 automotive trainers in Kenya. The study established that the training programs are not fully aligned to the requirements for the future practice in automotive industry. The study concluded that training at the technical training institutes should be designed for flexibility with key stakeholders being involved. Training facilities should be as close as possible to the work place facilities. In China, (Bai and Geng, 2014) noted that since 2006 many national demonstration vocational colleges have implemented new teaching and learning methods to encourage more flexible and diversified approaches. For example, the teaching of a special course on agriculture was arranged according to the farming seasons. Student-centered teaching-learning methods such as teamwork, discussion and workshops were also introduced to supplement traditional teaching methods. They further note that student-centered teaching and learning process includes stages such as informing, planning, deciding, realizing, controlling and evaluating. These have been practiced in Chinese demonstration schools and colleges as follows:

Trainers design teaching contents in accordance to teaching objectives, and based on student-centered approaches, trainers then prepare teaching resources such as notes and worksheets, power point slides, websites, blogs, and teaching courseware. This development indicates that many demonstration schools' teaching and learning have been influenced by action-orientation learning theory (Bai and Geng, 2014).

In Kenya, (Arakit, 2016) researched about improving teaching and learning process of pastry and bakery using learner centered approaches. Data was collected from eight trainees of the pastry and bakery certificate class of 2015 September intake at Kenya Hotel and Tourism Training Institute (UHTTI), Jinja and two instructors in the pastry and bakery department. During interviews, all the respondents argued that there was need to teach vocational education in a way that enables the learner to interact and communicate with fellow trainees, create knowledge, think critically and solve problems especially on their own. It is necessary for trainers to involve trainees actively in the teaching and learning process especially during planning of lessons, setting goals of the lessons and assessment of trainees' achievements in the classroom. The use of action learning methods was further supported by (Kuany, M. D.W. 2012), in his research about improving professional practice and trainees' learning skills through action learning in economics education in South Sudan. His findings revealed that action learning is integral to pedagogical approaches in improvement of trainees' insight of both theory and practice in economics education. Applied learning scenarios and mentorship methods are enormous attributes in motivating trainees to be active participants in the learning process.

In China, (Bai and Geng, 2014) in their paper about transferable skills in technical and vocational education and training noted that one of the policies; the secondary vocational education reform and innovation action plan emphasized the importance of reform and innovation in teaching methods. It encouraged schools to explore project-based teaching, case teaching, situated teaching and virtual and simulated teaching, so as to promote the all-rounded development of trainees. The action plan highlighted the importance of comprehensive competencies and transferable skills for student development.

According to a European agency for development in special needs education report (European Agency for development in special needs education, 2010), trainers in inclusive settings must provide the following for their trainees: developmentally appropriate content, clear instructions for practice, opportunities to practice at an appropriate level of difficulty, opportunities to participate in appropriately designed task progressions and accurate feedback and assessment of subject matter and role performance. While relating to the teaching of physical education, these points show the importance of trainers' skills in creating an interactive and responsive learning environment and managing the trainees in achieving multiple learning outcomes.

In his article about enhancing the potential of youth employment (Brewer, 2013), notes that learning environments requires school systems to use assessments that enable trainees to think in a creative way. It is important that school systems use assessments that emphasize the actual problems of the real world, involve trainees in observation and investigation and provide opportunities for trainees to use what they know in meaningful ways. He further describes the various techniques that should be incorporated into the training of a modern teacher to enhance the process of learning skills such as teamwork, communication, and problem solving. The various methods according to (Brewer, L. 2013), are:

- Interactive teaching, whereby trainers give exercises that provide opportunities for experience, practice, strengthening, and meditation. This approach requires skilled instructors and a well-designed curriculum, but has the disadvantage that the exercises, no matter how well designed, lack the authenticity of the real workplace.
- Changing the classroom setting where general skills or technical skills are taught to trainees so that the class is similar to the workplace. This approach, which includes training companies, workshops, learning

responsibilities, provides a real environment for teaching and learning.

However, (Brewer, 2013) confirms that the problem in many schools and training programs does not work in this way. They focus on the technical skills required for special work, because this method is simple, affordable and easy to teach a large number for a short period of time. Many young people who qualify from this type of program do not have the necessary skills in the current labor market and are unable to cope with changing needs and remain temporary employees.

According to CEDEFOP any given learning environment that is not properly designed may also constrain teaching and learning. Considering the case studies conducted by (CEDEFOP, 2015), the barriers identified were grouped as follows: cost, scale, inertia, lack of clear vision, lack of leadership at national or local level, unproductive relations between school/VET systems, and lack of training for the trainers, and piece meal change that is unsustainable.

In 2012, the United States (US) national research council in a brief report about education for life and work: developing transferable knowledge and skills in the 21st century, suggested the following successful teaching methods;

- Use multiple and varied representations of concepts and tasks, such as diagrams, numerical and mathematical representations, and simulations, along with support to help trainees interpret them.
- Encourage elaboration, questioning, and explanation – for example, by prompting trainees who are reading a text to explain the material aloud to themselves or others as they read.
- Engage trainees in challenging tasks, while also supporting them with guidance, feedback, and encouragement to reflect on their own learning processes.
- Teach with examples and cases, such as modeling step-by-step how trainees can carry out a procedure to solve a problem while explaining the reason for each step.
- Prime student motivation by connecting topics to trainees' personal lives and interests, engaging trainees in problem-solving, and drawing attention to the knowledge and skills trainees are developing and their relevance, rather than grades or scores.
- Use "formative" assessments, which continuously monitor trainees' progress and provide feedback to trainers and trainees for use in adjusting their teaching and learning strategies.

### 3. Material and Methods

The study adopted descriptive survey research design. According to Nwagu (2005) a descriptive survey research design is used to collect data from well-defined population or systematically selected segment of the population for the purpose of determining and identifying the attributes and characteristics of the population of the study. The design has been considered suitable because the study would determine the technical trainers' competencies on knowledge of subject content and skills acquisition among technical trainees in Bungoma County, Kenya. The researcher also used the design to determine the prevailing conditions or needs of the technology education program and provide insight on which the desired decisions will be based, in aiming to help improve the training.

The term population refers to the group of people or study subjects who are similar in one or more ways and which forms the subject of the study in a particular survey (Kerlinger, 2003). The target population in the current study comprised of 400 TVET trainers and 800 trainees. This is shown in table 1 below.

**Table 1** Target Population

S/no.	Strata	Target Population
1.	TVET trainers	400
2.	TVET trainees	800
4.	TVET college principals	85
Total		1285

Technical and vocational colleges were selected using stratified random sampling to ensure representation from each cadre of the strata. The strata were composed of technical and vocational colleges, colleges of science and technology and technical and vocational training centers (youth polytechnics). Principals and heads of department were selected

using purposive sampling technique, so as to cater for the different categories of institution as stated above. Purposive sampling requires access to key informants in the field who can help in identifying information rich cases (suri, 2011). For colleges of science and technology and technical training colleges census sampling was done because Bungoma County had only one known college of science and technology and three technical training colleges (T.T.I) at the time of study. One principal and one heads of department were picked per colleges. The principal was picked because the colleges principal is the central factor determining skills acquisition in the colleges (Nasongo and Lydiah, 2009), and the head of department was in charge of the practical sessions and the department in the colleges. The trainers and the trainees in technical and vocational colleges were obtained using stratified sampling techniques to ensure equal representation of males and females.

## 4. Results and Discussion

### 4.1. Demographic Characteristics of the Trainers.

This section presents the demographic characteristics of the trainers. It includes the gender, age, qualifications, work experience and the areas of specialization of the TVET trainers. Data for each of these characteristics are indicated below

#### 4.1.1. Gender of Trainers

**Table 2** Gender of Trainers

		Frequency	Percent	Valid Percent	Cumulative Percent
	Male	58	72	72	72
Valid	Female	22	28	28	100.0
	Total	80	100.0	100.0	

As seen from table 2, there were more male trainers 58 (72%) than the female trainers 22 (28%) in the study.

#### 4.1.2. Age of Trainers

**Table 3** Age of Trainers

Age Range		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	31-40	43	54	54	54
	41-50	16	20	20	74
	51 and above	21	26	26	100.0
	Total	80	100.0	100.0	

As indicated in table 3, 43(54 %) of the respondents were in the range of 31- 40, 16(20%) of the respondents were in the age bracket 41-50 and 21(26%) were above the age of 51. This indicates that the majority 59 (74%) of the trainers were below 51. This implied that the trainers were in the young age bracket.

#### 4.1.3. Qualifications Level of the Trainers

**Table 4** Qualifications Level of the Trainers

Attainment		Frequency	Percent	Valid Percent	Cumulative Percent
	PhD	3	4.0	4.0	4.0
	Master"s	12	15.0	15.0	19.0
Valid	Bachelor"s	20	25.0	25.0	44.0
	Diploma	38	48.0	48.0	92.0
	Certificate	7	8.0	8.0	100.0
	Total	80	100.0	100.0	

As indicated in table 4, the majority of the trainers were diploma holders at 38(48%).

#### 4.1.4. Work Experience of the trainers

**Table 5** Work Experience of the trainers

Work Experience		Frequency	Percent	Valid Percent	Cumulative Percent
	1-5 years	39	49.0	49.0	49.0
	6-10 years	11	14.0	14.0	63.0
Valid	10 years and above	10	12.0	12.0	75.0
	Below one year	20	25.0	25.0	100.0
	Total	80	100.0	100.0	

As indicated in table 5, the majority of the trainers have an experience of ranging from 1 to 5 years,39(49.0%) an indication that the trainers in the study have enough experience. However, nearly one quarter of the trainers at 25.0% lack any work experience or have worked for less than one year.

#### 4.1.5. Areas of Specialization of the TVET trainers

The study purposively sampled trainers from the technology area of TVET. Table 5 provides the distribution of the respondents by area of specialization.

**Table 6** Areas of Specialization of the TVET trainers

		Frequency	Percent	Valid Percent	Cumulative Percent
	Automotive	26	32.0	32.0	32.0
	Foods and beverages	28	35.0	35.0	67.0
Valid	Electrical	12	15.0	15.0	82.0
	Building	14	18.0	18.0	100.0
	Total	80	100.0	100.0	

As seen from table 6, the majority of the respondents were from the foods and beverages field 28 (35.0%), followed by those from Automotive engineering field 26(32.0%), then those from Building engineering field 14(18.0%) and the minority were from the electrical field 12 (15.0%). This indicates that the majority of the trainers in the study were from the foods and beverages field.

## 4.2. Trainers' Rating of the Teaching and Learning Process in the Technical Vocational Education and Training institutions

The trainers in the TVET institutions were also invited to rate their agreement about the teaching and learning process in the TVET institutions. They were invited to fill a researcher constructed questionnaire. Table6 below highlights the trainers' perception of the time for teaching and learning in TVET institutions.

From items presented to the trainers as indicated in table 7, the first four items, that is, „Adequate time is available to cover training content“ (4.28). Trainees are given enough time to practice tasks“ (3.80). Adequate rest time is allowed between training sessions“ (3.47), „There is proper time management during the training process (3.69), were all rated above the mean average. Whereas the remaining two items, that is, “Trainees have enough time for personal reflection“ (2.92), and „Feedback from assessment is provided on time“ (2.61), were rated below the mean average on the scale running from 1 to 5. This implied that the TVET trainers agreed that there were issues with time for trainees' reflection and provision of feedback to the trainees during the training. From items presented to the trainers as indicated in table 8, all the eight items, were all rated above the mean average on the scale running from 1 to 5. This implies that TVET trainers also agreed that the organization of training in TVET institutions was adequate.



**Table 7** Trainer perception of the time for teaching and learning in TVET institutions (N=80)

Statement	Strongly Agree		Agree		Not Sure		Disagree		Strongly Disagree		Mean	Standard Deviation
	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%		
Adequate time is available to cover training content	34	42.0	38	48.0	-	-	6	8.0	-	-	4.28	0.83
Trainees are given enough time to practice tasks	35	44.0	14	18.0	8	10.0	22	27.0	-	-	3.80	1.28
Adequate rest time is allowed between training sessions	2	2.0	54	68.0	8	10.0	14	18.0	2	3.0	3.47	0.92
There is proper time management during the training process	5	6.0	58	72.0	-	-	16	20.0	-	-	3.69	0.85
Trainees have enough time for personal reflection	4	5.0	30	38.0	-	-	44	55.0	-	-	2.92	1.07
Feedback from assessment is provided on time	14	17.0	9	11.0	-	-	48	60.0	8	10.0	2.61	1.31

**Table 8** Trainer perception of the Tutoring (Organization) of training in TVET institutions (N=80)

Statement	Strongly Agree		Agree		Not Sure		Disagree		Strongly Disagree		Mean	Standard Deviation
	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%		
Teaching is learner centered	27	34.0	22	27.0	4	5.0	24	30.0	2	2.0	3.59	1.31
Group learning is encouraged to foster teamwork	28	35.0	25	31.0	4	5.0	22	28.0	2	2.0	3.74	1.24
The modules have been organized from simple to complex	27	34.0	18	22.0	4	5	26	32.0	4	5.0	3.59	1.31
There is proper choice of training methods	8	10	31	39.0	8	10	26	33.0	4	5	3.22	.98
There is continuous assessment of trainees	21	26.0	30	37.0	4	5.0	24	30.0	1	2.0	3.51	1.26
Record of instructional tasks given is taken	8	10	36	45.0	8	10.0	22	27.0	8	10.0	3.09	1.09
Trainee individual learning differences are catered for during the training	14	17.0	30	37.0	4	5.0	26	32.0	5	8.0	3.17	1.32
Trainees are motivated to attend regularly	14	17.00	30	37.0	16	20.0	14	17.0	5	8.0	3.63	.96

**Table 9** Trainer perception on the tasks and assignments given to trainees in TVET institutions (N=80)

Statement	Strongly Agree		Agree		Not Sure		Disagree		Strongly Disagree		Mean	Standard Deviation
	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%		
Assessment is based on demonstration of skills from tasks	17	21.0	16	20.0	4	5.0	39	49.0	2	2.0	3.06	1.29
Trainees are given real life tasks	12	15.0	36	45.0	4	5.0	21	26.0	4	5.0	3.59	1.06
Trainees are guided to accomplish tasks	17	21.0	48	60.0	4	5.0	2	2.0	6	8.0	3.89	1.10
Tasks are reviewed to reflect up to date requirements in the world of work	14	18.0	29	36.0	6	8.0	22	27.0	9	11.0	3.24	1.33
Adequate tasks are given	20	25.0	28	35.0	4	5.0	20	25.0	6	8.0	3.48	1.35

From items presented to the trainers as indicated in table 9, all the five items, were rated above the mean average on the scale running from 1 to 5. This implied that TVET trainers agreed that the tasks and assignments they gave during training were adequate.

**Table 10** Trainers perception of their trust in the teaching and learning process in TVET institutions(N=80)

Statement	Strongly Agree		Agree		Not Sure		Disagree		Strongly Disagree		Mean	Standard Deviation
	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%		
Lecturers and technicians are facilitators of learning	28	35.0	20	25.0	4	5.0	19	24.0	8	10.0	3.52	1.45
The training content is adequate for learning	16	20.0	48	60.0	9	11.0	4	5.0	2	2.0	4.11	0.57
There is good trainer-trainee relationship	18	22.0	40	50.0	4	5.0	14	18.0	2	2.0	3.88	1.00
The study programs meet trainee expectations	20	25.0	34	42.0	8	10.0	14	17.0	4	5.0	3.83	1.01
The trainers attend regularly	14	17.0	40	50.0	4	5.0	19	24.0	2	2.0	3.63	1.09
Trainers have high level of motivation	4	5.0	29	36.0	8	10.0	40	50.0	4	5.0	2.77	1.00

From items presented to the trainers as indicated in table 10, five items, that is, „Lecturers and technicians are facilitators of learning“ (3.52), „The training content is adequate for learning“ (4.11), „There is good trainer-trainee relationship“ (3.88), „The study programs meet trainee expectations“ (3.83), and „The trainers attend regularly“ (3.63) were rated above the mean average score. However, one item, „Trainers have high level of motivation“ (2.77) was rated below the mean average score. This implied that TVET trainers have low levels of motivation.

### 4.3. Tasks and Assignments

Regarding tasks and assignments given, the findings in table 8, indicated that the TVET trainers agreed that the tasks and assignments given during training were adequate. Engestron (1994) in (Oyiawe, J. et al 2017), identified some of the constituents for effective learning. These include: „ensuring that individuals have access to theoretical and experimental knowledge; the opportunity to engage in authentic task and interaction with others; and the chance to develop critical and intellectual capacities through the application of concept and theory in practice“. The researchers agree that when trainees are given adequate tasks and assignments, they have the chance to put what they learnt in theory into practice and also to interact with materials, tools and equipment, which develops their competence. It helps them form “habits of the mind, habits of the hand and habits of the heart” (Shulman, L. S. 2005).

### 4.4. Trust

Regarding the trust they had in the teaching and learning process, the findings in table 9, indicated that the TVET trainers had low levels of motivation. According to the expectancy theory of motivation as coined by (Vroom, V. H., 1964), employees have personal objectives and it's the reason they decide to work in organizations such that when their objectives are fulfilled they are rewarded by the organization. A clear example of the application of the expectation theory in TVET can be that of an instructor. If he expects that his work to develop competence among TVET trainees through training will give a reward, he is more likely to work harder on it. The rewards can be in form of pay raises, promotion at work and opportunities to learn new skills. In the view of the researchers, motivation is important in TVET institutions so that trainers are committed to perform their work.

### 4.5. Tools, Materials and Equipment

Regarding tools and materials used during training, the findings in table 10, indicated that the trainers agreed that the training equipment and the instructional materials were not adequate in their institutions. The researchers are of the view that TVET institutions' training workshops offer trainees with opportunities to have hands-on practical experiences in their technical fields. A lack of or inadequacy of such opportunities deprives the trainees a chance to have the skills which are necessary in the world of work. In his research study about automotive training in TVET institutions in Kenya, (Kitainge, K.M. 2016) concluded that TVET training facilities should be as close as possible to the work place facilities. His conclusion was in line with the functional context theory as advanced by Thomas Sticht (1975) and cited by (Anindo, J. et al 2016) who suggested that „by using materials that the learner will use after training, transfer of learning from the classroom to the “real world” will be enhanced“. They further highlighted one of the four basic principles of the functional context theory that „the educators have to use tools and materials that match what the trainees are learning“.

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## 5. Conclusion

- The conclusion for the study was based on the aspects advanced by Nilsson (2011) regarding vocational didactics. Nielson emphasized the 5T's (Time, Tutoring, Tasks, Trust, and Tools) as elements that are important in successful competence development for TVET.
- On the issue of time for teaching and learning, the trainers had issues on reflection and provision of feedback. Reflection is an essential step to improving teaching practice. Through reflection, trainers can look clearly at their achievements and struggles so that they can improve. Timely feedback in TVET is essential in supporting trainees' retention and to gauge progress regarding the skills acquired during training.
- Regarding training organization, tasks and assignments the TVET trainers agreed that they were adequate for learning. Assignments assist trainers and trainees to evaluate what works best or what needs improvement, helps trainees to focus on the essential learning and offers an opportunity for the trainer to provide individual feedback to the trainees.
- With regard to the trust the trainers have in the teaching and learning process, the trainers had concerns with the way they were being motivated at their institutions. Trust is a process of safety and comfort where trainers can collectively have honest dialogue about trainees, their practices and their impact regarding whether learning happened or not. Trainers need to be highly motivated to trust and sustain teaching and learning activities at the institutions.
- The trainers also established that the instructional tools and materials they use for training were inadequate. In TVET, tools and materials act as a guide for both the trainers and trainees in that they offer a valuable routine for practice. They are one of the critical features for competence development in TVET.

### *Recommendations*

- The TVET institutions should lobby the government for more funds to enhance trainers' salaries as a way of motivating them.
- The government should consider an increased budget for TVET institutions to enable them purchase the latest training equipment and materials which will enable the graduates develop the necessary skills required in the world of work.
- It is recommended that the TVET institution administrators control the quality of training by establishing quality assurance offices to coordinate all levels of TVET training.
- It is further recommended that TVET institution administrators lobby for funding through; fellowships and research grants, international donor agencies, tax rebates etc. to fund the purchase of the expensive latest instructional equipment and materials.
- Due to the constant advancement in technology TVET institutions should develop mechanisms for anticipating and responding accordingly by offering appropriate programs, relevant curriculum, develop modern ways of teaching-learning and assessment of the trainees.

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### **Compliance with ethical standards**

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#### *Disclosure of conflict of interest*

No conflict of interest.

#### *Statement of informed consent*

The study guaranteed the privacy and confidentiality of the participants' information. The participants were assured that the information provided for the study was to be confidential. Anonymity was observed in reporting the research findings by not disclosing the participants' names and/or identities.

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