

Vocational Instructors Preparedness for Provision of Competency-Based Training in Kenya and Apprenticeship Training in Saskatchewan, Canada,

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Abstract

Competency-Based Training (CBT) in Kenya and apprenticeship training in Canada provide trainees with job-ready skills, but emphasis on theory over practice hinders its effectiveness. To fittingly frame the problem, the study asked, what is the level of instructors' know-how in providing CBT in Kenya, and how does their preparation compare to journeypersons in Saskatchewan, Canada? The research involved 33 public Vocational Training Centres (VTCs) in Nakuru City County, Kenya and 23 branch institutions of Saskatchewan Polytechnic, Canada. Concurrent embedded design was utilised. The sample comprised 10 principals, 92 VTC instructors, 261 trainees, 10 industry managers and 4 programme heads drawn from a total population of 377 using stratified, purposive and simple random sampling methods. Questionnaires, interview schedules and observation checklist were used to collect data. Findings showed that Kenyan instructors are deficient in industrial training and professional development. In contrast, findings from Saskatchewan, Canada reveal greater emphasis on active and hands-on involvement, such as apprentice indentureship and mentorship under certified journeypersons. The study concluded that instructors' preparedness had major influence on the provision of competency-based skills to trainees. The study recommends an increase in funding to facilitate industrial training and refresher courses for instructors to improve quality of CBT in Kenya.

Keywords: Competency-Based Training (CBT), Instructors' Preparedness, Indentureship, Vocational Institutions

Introduction

Instructors' preparedness in terms of having up-to-date skills and knowledge are key elements for fruitful implementation of competency-based training (CBT) in vocational institutions. It bonds educational policies and reforms to classroom practice and industries as well (Atkinson, 2016; TVETA, 2018). In this space, instructors play vital roles as facilitators and mentors to guide trainees to master skills at their own pace (UNESCO, 2018). Consequently, trainees emerge not just as versatile professionals, but also as adept communicators, innovative catalysts for change, and creators of new job prospects. By extension contribute to advancement of Kenya's socioeconomic landscape and align it with initiatives like Vision 2030 and Big Four Agenda (Nyerere and Warira, 2017; Government of Kenya, 2020; Republic of Kenya, 2013). Also, tackling security and developmental challenges in Kenya and realisation of fourth and eighth Sustainable Development Goals of significantly boost, by 2030, the number of young people and adults equipped with pertinent skills, encompassing technical and vocational expertise, necessary for employment, quality jobs, and entrepreneurship for economic growth (Education 2030, 2016).

These goals and international frameworks may be achieved by the presence of adequately prepared instructors. The quality of vocational training significantly hinges on the know-how of instructors, which is shaped by their expertise in subject matter, effective teaching techniques, and commitment to professional ethics (Barrera-Pedemonte, 2016; Oroni, Manasi & Wepukhulu, 2023). This signals that instructors ought to be ahead of the curve in updating their traits of adaptability, foresight, collaboration, communication, role modelling and motivational leadership (Sepriyanti & Nelwati, 2023). This enables trainees to learn to do things to the standards set for either or both employment and self-employment (Republic of Kenya, 2013; Republic of Kenya, 2015). If instructors are not absorbed in engaging in these practices, the results are likely to be suboptimal, as highlighted in the curriculum implementation theory underpinning this article and the thesis, this piece was derived from.

Nyerere (2018) underscores that mastering core competency-based skills involves developing a "learning to learn" mindset, necessitating shifts in teaching methods and assessment techniques. Instructors must therefore possess both professional expertise and industry insight to be able to impart practical skills effectively and stay abreast of industrial developments (Republic of Kenya, 2018). Assessment tools such as written exams, oral questioning, observation, demonstrations, work projects, third-party reports, portfolios, simulations, case-based, scenario-based learning and modeling empower instructors to gauge trainees' competency-based skill proficiency, assess hands-on skill acquisition, and evaluate instructional effectiveness (Atkinson, 2016; Bai & Geng, 2014). This aligns with the Republic of Kenya's directive (2019), mandating instructors to undergo compulsory industrial attachments every three years and also to show their continuity in professional development. These activities are meant to provide instructors with opportunities to engage with field experts, gain valuable insights, and foster exchanges of information, experiences, and solutions with their peers. However, this push attracts some significant resource implications, as it takes a great deal of time and effort on the part of vocational institution leaders and instructors to develop partnerships with prospective employers and industries, to facilitate successful competency-based learning opportunities for trainees (Atkinson, 2016). Because of these realities, the study prosecuted VTC instructors' level of industrial experience in Kenya and compared it with journeypersons at Saskatchewan Polytechnic, Canada.

Similarly, Canada practices CBT commonly known as apprenticeship training. Instructors are referred to as journeypersons or tradepersons. To achieve journeyperson status, the preparation begins with apprentices identifying jobs in their desired field and signing an apprenticeship contract with their employer and the Apprenticeship Authority for four years. For instance, in Saskatchewan Province, Canada, there is the Saskatchewan Apprenticeship and Trade Certification Commission (SATCC). This binding agreement helps apprentices receive training from experienced journeypersons. Furthermore, practical training occurs onsite under journeyperson's guidance, complemented by theoretical instruction from educational institutions. Upon completion of the mandated 7200 hours over four years, apprentices may undertake an interprovincial exam via www.red-seal.ca. Achieving a score of 70% or higher grants eligibility to work as a tradesperson or journeyperson across all Canadian provinces and territories (Saskatchewan Polytechnic, n.d; SATCC, 2012; UNESCO, 2013; UNESCO, 2022). In the Kenyan setting, instructors' preparation entails 2 years of pre-service training at the Kenya School of TVET and licensing by the TVET Authority. Then an individual is eligible to apply for the instructor position with proof of continuous in-service training (TVETA, 2018; Republic of Kenya, 2019). For that reason, the study compared methods of instruction and retooling exercises in both contexts to disclose keys for bridging skills gaps.

It is important to mention that the implementation of CBT in vocational institutions in Kenya was rushed without adequately retooling instructors to change their pedagogy and attitudes. To assist bridge the gap between skills acquired by trainees from vocational programmes and those required by employers. Consequently, these skills openings may potentially endanger progress made and limit the promotion of lifelong learning (Republic of Kenya in 2023; Kitainge, 2016). These scenarios are also leading to situations where recent graduate vocational trainees are leaving vocational institutions with skills that are not aligned with industrial needs, as well as deficiency in resilience and the right attitude to tackle challenges in the workplace. This often results in ill-timed resignations (Kebede, Asgedom & Asfaw, 2024; E4D/SOGA, 2019; Moses, Muladi & Wibawa, 2017).

Employers in the industries and service sectors are also voicing their discontentment over issues of double costing crises. A phenomenon in which the government is taxing industries and service sectors to fund technical and vocational training, only for those same industries to incur additional costs in re-skilling newly hired vocational graduates, such as artisans and craftspersons, as an intervention, to meet those basic skill standards. These skills gaps have been further enlarged by the seismic impact of technologies such as Artificial Intelligence (AI), recent Covid-19 pandemics, and the adverse effects of climate change (Sohaee, Azadjoutabari, Jadhav & Kulkarni, 2023). Subsequently, this dual financial burden is not only escalating costs for employers, but they are also failing to yield commensurate benefits despite their significant investment (Awiti, Orwa, Mbuvi & Karumba, 2019; TVETA, 2020). To further cement these acumens, a survey by ManpowerGroup (2018) across 43 countries highlights those skilled trades like electricians, welders and mechanics as among the hardest jobs to fill. Therefore, it was against this backdrop the study sought to establish whether trainees were effectively acquiring the requisite skills necessary to propel Kenya's economic growth.

This suggests that instructors may be overlooking fundamental skills vital for enhancing trainees' capabilities, as expected by employers. Skills such as, but not limited to, innovation, leadership, creativity, entrepreneurship, problem-solving, teamwork, and communication skills (TVETA, 2019; World Economic Forum, 2020). These skills are projected to surge in the foreseeable future. Alongside also digital and green

skills are in high demand with the European Union, placing prominence on these to enhance employability (European Commission, 2020). These skills are seen to facilitate the transition toward decarbonised and resource-efficient economies and societies (McCoshan, 2022). Schneegans, Straza and Lewis (2021) underscore also the significance of CBT in accomplishing the SDGs by 2030.

As the Competency-Based Curriculum (CBC) continues to be adopted in primary, secondary and university education levels in Kenya, strengthening CBT in VTCs is crucial for ensuring its smooth transition. Data was gathered from leaders of VTCs in Nakuru City County and Saskatchewan Polytechnic, in Canada, who oversee the implementation of government policies and reforms through TVET bodies. Instructors and trainees from various Sub-Counties in Nakuru City County completed questionnaires, while industry managers, as key users of vocational graduates, participated in the study between July 2022 and July 2023. An observation checklist was also used.

Statement of the Problem

Insufficient practical training and overemphasis on theory by instructors are resulting in instances where graduate trainees lack demanded skills by current job market. This has further been aggravated by the integration of advanced technologies, the recent Covid-19 pandemic, and the adverse effects of climate change. Thus, employers in industries and service sectors are finding themselves having to invest in retraining fresh vocational graduates to equip them with the fundamental skills required for the job market. This additional training incurs extra costs to the employers. Furthermore, some vocational graduates are exhibiting reluctance to adapt, learn new skills, or relearn existing ones. This reluctance stems from limited exposure, negative attitude, and lack of resilience in overcoming challenges, which often leads to early departures from their positions. This also increases expenses associated with staff turnover. It was against this submission, that this article aimed to address the root causes of skill gaps in VTCs despite the implementation of CBT in vocational institutions in Kenya. Part of this study was also done at Saskatchewan Polytechnic, in Canada to compare and highlight lessons for Kenya, regarding instructors' preparation to bridge the skills gap.

Purpose of the Study

To establish instructors' preparedness for provision of CBT in Kenya compared with journeyman in Saskatchewan, Canada.

Objectives of the Study

- To establish instructors' know-how for provision of CBT in vocational institutions in Kenya.
- To establish instructors and journeyman's preparation in Kenya and Canada respectively.

Research Questions

- What is the level of instructors' know-how in providing CBT in Kenya?
- How are instructors prepared in Kenya compared to journeymen in Canada?

Curriculum Implementation Theory

The research was rooted in curriculum theorists such as Gross, Giacoluinta and Bernstein (1971), Shiundu and Omulando (1992) and Tyler (1949). According to them the effectiveness of introducing a new

educational curriculum hinge on four critical elements. One of the tenets encompasses proficiency of the instructors' attitude in carrying out curriculum implementation tasks and adequacy of resources. Moreover, they also underscore the importance of managerial backing, as well as clear understanding and communication of the innovation's objectives among recipients and stakeholders. According to Gross et al. (1971), Shiundu and Omulando (1992) and Tyler (1949), clarity of innovation for those implementing pivots on their awareness of changes and their ability to manage them. Gross et al. (1971) further stress the importance of instructors being competent and well-informed about the content and implementation strategies. Gross et al. argue that if instructors are not adequately informed about curriculum changes, they may struggle to implement them effectively. Gross et al. (1971) and Shiundu and Omulando (1992) underline the vital necessity of capacity development among instructors for the successful execution of any new curriculum. They argue that in-service training provides instructors with the essential skills and knowledge required to effectively navigate the new curriculum. This positively impacts instructors' attitudes toward curriculum implementation.

Vocational Instructors' Know-How

According to Bandeale and Faremi's (2012) findings, the absence of in-service training for instructors adversely impacted curriculum implementation. Besides, Chisi, Nieuwenhuis and Nthontho (2017) also found that 45% of academic staff hadn't participated in in-service training, resulting in instructors being equipped solely for theoretical instruction, and lacking practical hands-on experience. An investigation by Kanyonga, Mtana and Wendt (2019) showed that 58% of instructors believed that in-service training was insufficient mainly due to its limited duration, lack of comprehensiveness, continuity and specific aspects of the curriculum. In a parallel vein, Tambwe's (2017) study revealed that a staggering 80% of instructors were deficient in industrial training, thereby constraining their capacity to effectively employ pedagogical expertise. Part of the motivation for this study was to establish the current state of retooling of instructors in Kenya, using Nakuru City County as a representative to benchmark it with Canada and derive best practices and aspects for filling the skills gap.

Jahonga, Canute, Murey, Otunga, Kiprop and Kosgey (2016) found that only 33% of instructors possessed the necessary skills and knowledge for effectively teaching practical modules. While this is true, Tambwe (2017) discovered that a significant portion of teachers, that is, 78% could not create lesson plans and implement them in a competency-focused manner. Despite the educational system's emphasis on learner-centered techniques, instructors predominantly adhered to traditional instructional methods. According to Chisi et al. (2017) findings a significant number of instructors lacked proficiency in lesson planning and delivery. To this end, the present study determined the methods of instruction and time allocated to theory and practical teaching.

UNESCO's (2018) report shows that vocational instructors in China participate in two months of mandatory company training for career advancement, to ensure both instructors and trainees possess the latest technical skills that are relevant to evolving industries. The report also mentions that companies recruit experts as part-time instructors for practical courses. A study conducted by Mukhtar and Ahmad (2015) revealed that instructors assessed mastery learning, tailored teaching and learning activities to suit trainees' abilities, prioritised leveraging trainees' prior knowledge to enhance learning, and also facilitated opportunities for

trainees to apply tools and equipment to complete their tasks. To this end, the industrial experience of instructors in Kenya was established and matched with journeypersons in Saskatchewan, Canada.

Competency-Based Training in Vocational Institutions

A study by Ondieki, Kahihu and Muthoni (2018) found that incorporation of life skills leads to significant behavioral, attitudinal and perceptual changes among young individuals. While Yunos, Salleh, Sern, Sulaiman, Mohamad, Abidin and Sahdan (2017) findings showed that students highly valued the inclusion of skills like entrepreneurship, communication, problem-solving, collaboration, and learning-to-learn in TVET programmes. The findings of Arakit (2016) also show that trainees acknowledged they were applying skills such as communication, innovation, critical thinking and problem-solving, especially at the individual level. In light of these studies, the present study sought to unearth competency-based skills trainees found applicable and relevant in the job market.

Additionally, in their paper on transferable skills in TVET in China, Bai and Geng (2014) noted that the secondary vocational education reform and innovation action plan emphasised the prominence of reform and innovation in teaching methods. It encouraged schools to explore project-based teaching, case teaching, situated teaching, and virtual and simulated teaching to promote the all-rounded development of trainees. The action plan highlighted the importance of comprehensive competencies and transferable skills for student development. Moreover, according to UNESCO (2022) report competency-based training in Canada encompasses structured programmes designed to impart skills directly applicable to specific trades. Often incorporate workplace training, developed collaboratively with employers to align with industry requirements.

Methodology

Concurrent embedded design was employed for simultaneous collection and analysis of both quantitative and qualitative data, with qualitative data nested within quantitative data. The design was suitable for this study, as Orodho, Khatele and Mugiraneza (2016) suggest that concurrent embedded design allows a primary focus on quantitative data, supplemented by qualitative insights from various perspectives or vice versa. The design also helped mitigate biases and weaknesses associated with the singular application of one method (Tambwe, 2017). By employing Krejcie and Morgan's (1970) table to determine sample size, the study arrived at 10 VTCs, 10 principals, 92 instructors, and 261 trainees from distinct sub-counties for regional balance and comprehensive coverage in Nakuru City, Kenya. Additional 4 programme heads at Saskatchewan Polytechnic, Canada were also sampled, as shown in Table 1.

Table 1: Sampling Frame (Kenya and Saskatchewan Polytechnic, Canada)

Respondents	Target Population	Sampling Technique	Sample Size	Percentage
Principals (N ₁)	33	Purposive	10	30%
Instructors (N ₂)	115	Simple	92	80%
Trainees (N ₃)	1305	Simple	261	20%
Industry managers (N ₄)	20	Purposive	10	50%
Programme heads (N ₅)	23	Purposive	4	17%
	1496		377	25%

Findings and Discussion

Table 2 shows the questionnaire return rate.

Table 2: Questionnaire Return Rate (Kenya)

Respondents	Administered	Filled and Returned	Rate
Instructors	92	75	82%
Trainees	261	189	72%
Total	353	264	75%

Table 2 illustrates that questionnaire return rates stand at 82% for instructors and 72% for trainees, yielding an aggregate response rate of 75%. Interviews schedules were also carried out with 9 principals, 10 industry managers, and 4 programme heads at Saskatchewan Polytechnic, Canada.

Instructors' Know-how Levels in VTCs in Kenya

Instructors were requested to specify their level of professional training, and the outcomes are displayed in Figure 1.

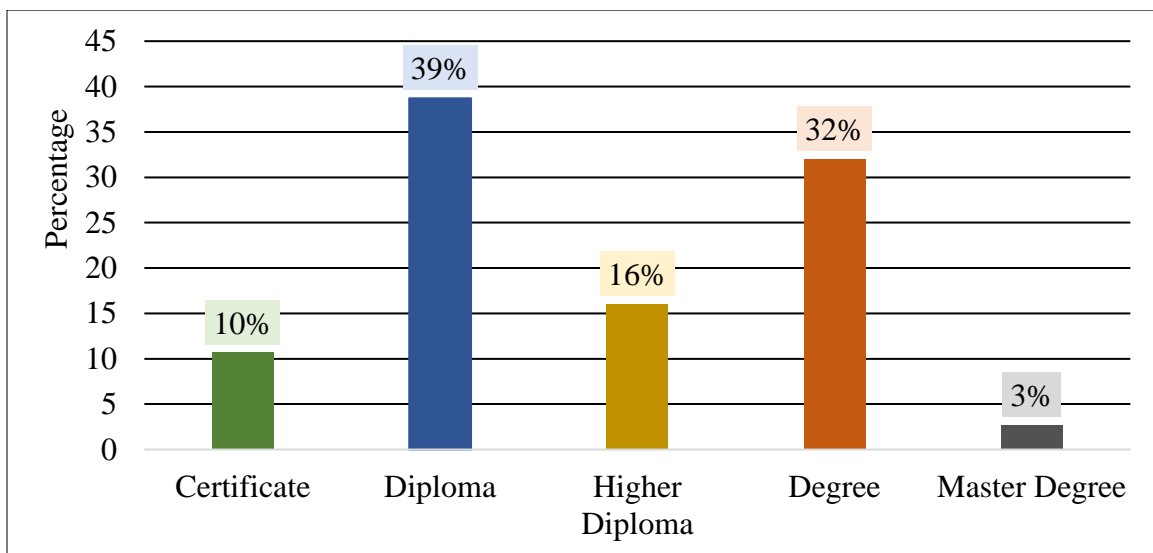


Figure 1: Instructors' Level of Professional Training (Kenya)

Figure 1 illustrates the distribution of qualifications among instructors. Among the sample of 75 instructors, 29 (39%) held Diplomas, while 24 (32%) held Degrees. Additionally, 12 (16%) possessed Higher Diplomas, 8 (10%) had Certificates and 2 (3%) held Master's degrees. These results demonstrate the diverse range of qualifications among instructors, all meeting requisite standards. These findings align with the stipulations outlined in the TVET Regulations 2015, which mandate instructors to possess qualifications higher than trainees. The findings are in agreement with the curriculum implementation theory that instructors ought to be competent. The other aspect curriculum implementation theorists are emphasising is, that instructors must undergo professional development. Figure 2 depicts the outcome of instructors who were asked to indicate the number of times they had attended professional development.

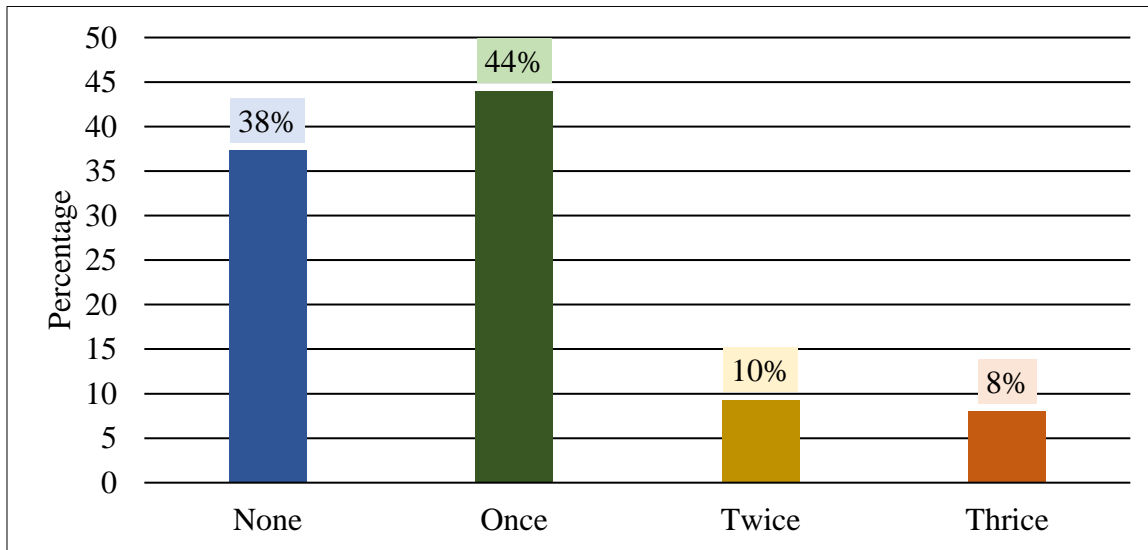


Figure 2: Number of Time Attended Professional Development (Kenya)

Figure 2 illustrates that more than 30 percent of instructors (29 out of 75, 38%) did not participate in professional development sessions. This trend may be stemming from financial limitations and insufficient administrative backing. In support of this outcome, one of the principals highlighted this issue that, “since CBT’s launch in 2017, only two instructors have done professional development due to financial constraints. Although I have completed CBT, the instructors have not yet had the opportunity. However, plans are currently underway to address this” (Principal 04). According to this passage, VTC principals seem actively involved in overseeing the curriculum’s intricacies, even though some instructors may lack familiarity with CBT. This aligns with the findings drawn from Chisi et al. (2017) who noted a deficiency in instructors’ professional development regarding competency-based training. The findings contradict again the expectations of curriculum implementation theory, which suggests that instructors should undergo professional development to adjust their attitudes toward the new curriculum.

Figure 2 further illustrates that, at a glance, the curve is skewed towards the right signifying the situation is not ideal. A small number of instructors participated in professional development sessions once (33 out of 75, 44%), twice (7 out of 75, 10%), and thrice (6 out of 75, 8%). This shows the existence of limited exposure of instructors to CBT orientation, a gap that ought not to be overlooked. The findings are in agreement with Bandele and Faremi (2012) and Kanyonga et al. (2019) who highlighted insufficiencies in professional development opportunities. On the flip side, discoveries from Saskatchewan, Canada, conversely, depicted a distinct scenario. Programme heads at Saskatchewan Polytechnic were queried about their methods for updating their instructors and one of the programme heads, previously a journeyman, hinted using a first-person narrative, that:

After I was employed, the institute enrolled me in the faculty certificate programme, which provided training on instructional methods. This programme is centered on principles of adult education and the incorporation of technology in teaching. It took me two to four years to complete. (Programme head 01)

The programme head’s statement signposts that journeymen in Canada receive in-house professional development on andragogy, allowing them to update their expertise in their respective fields at their own

pace. This approach aligns with Kenya's aspiration featured in the Republic of Kenya (2019) emphasising on professional development of instructors to equip them with the proficiency needed to effectively impart quality hands-on skills to trainees. Therefore, instructors were further requested to specify the number of times they had participated in industrial training, and the outcomes are depicted in Figure 3.

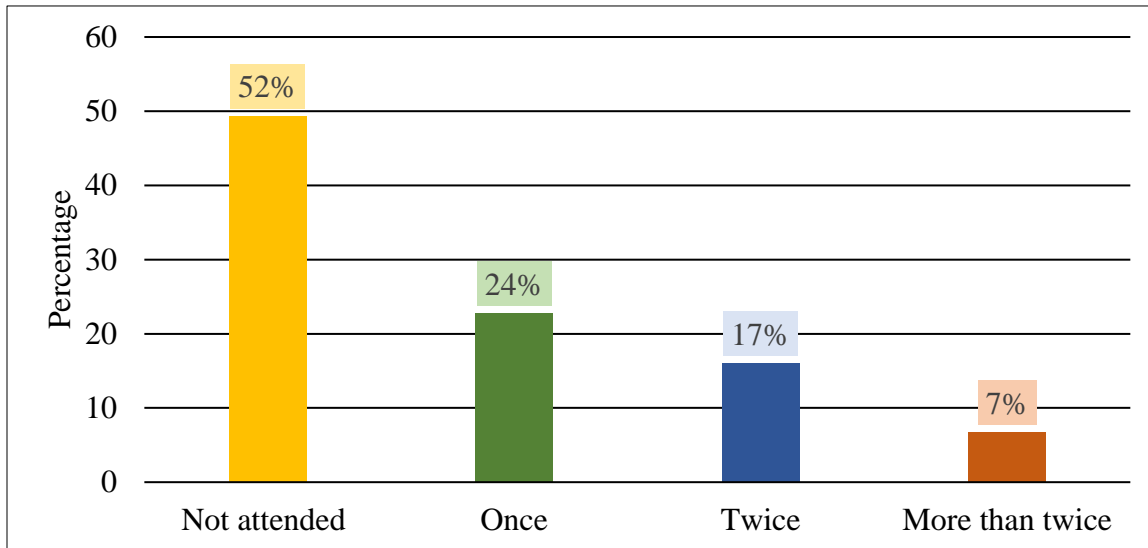


Figure 3: Industrial Experience of Instructors (Kenya)

Figure 3 reveals that more than half of the instructors, specifically 37 out of 71 (52%), did not participate in the industrial training sessions. This could be due to concerns about potential job replacement or loss during the training period. One of the principals commented on this issue, stating that:

No instructors have attended industrial training. If they do we will need to replace them since we have a few instructors. However, we encourage them to go for industrial training. I have personally visited and trained in several industries, so I know how to operate most of our facilities. I often assist when an instructor is not familiar with both electric and manual equipment. (Principal 05)

The excerpt from the VTC principal aligns with the findings of Jahonga et al. (2016), Limboro et al. (2012), Raihan (2014) and UNESCO (2018) who indicate that instructors seldom engage in current industry visits for the transfer of practical skills to trainees. The findings in Figure 3 further signal a lack of comprehensive understanding among instructors regarding the principles of competency-based training and expectations. In support of this outcome, one of the principals asserted that, “yes, we know that competency-based training was launched in 2017, but we have not implemented it yet. We are still using the old system” (Principal 02). The findings align with Republic of Kenya (2019) and previous studies conducted by Tambwe (2017) and TVETA (2018) indicating a deficiency in instructors’ understanding of CBT. This also contradicts curriculum implementation theory which proposes that instructors should have the requisite expertise to effectively execute the curriculum implementation process.

While this is the case for Kenya, the findings from Saskatchewan, Canada, revealed contrasting results. Programme heads at Saskatchewan Polytechnic were tasked to outline journeypersons’ preparation and one of them narrated using a first-person account that “I completed my training during my first four years in the

industry, then took the journey person exam. After working with three different companies over nine years, I transitioned to instructing.” (Programme head 02). The statement made by the programme head shows that journey persons’ preparation in Canada entails a blend of hands-on training alongside theoretical and practical technical instruction. These findings align with the views of Saskatchewan Polytechnic (n.d), SATCC (2012) and UNESCO (2013), highlighting the vital role of collaboration between educational institutions and industries in skill development. A practice worth borrowing in Kenya to enhance instructors’ competence and delivery of CBT.

In other areas probing pedagogy, delivery and assessment of CBT, trainees were tasked to rate their interactions with instructors during the teaching and learning process using a 4-point likert scale (1-strongly disagree, 2-disagree, 3-agree and 4-strongly agree), given that trainees are the consumers of CBT. The results are displayed in Table 3. Interpretation followed the ranges: 1.0-1.7, 1.8-2.5, 2.6-3.3, and 3.4-4.0, indicating strongly disagree, disagree, agree and strongly agree. A standard deviation of 0.000 reflects unanimous agreement, while values above 0.000 denote varying degrees of agreement.

Table 3: Trainees' views of their interactions with instructors during the teaching and learning process

Statement		Strongly disagree	Disagree	Agree	Strongly agree	N	M	SD
Instructors availed practical facilities during the learning process.	F	1	4	51	133	189	3.67	0.544
	P	1%	3%	27%	69%	100%		
Trainees who have not mastered the skill are given more time to repeat the skill until they achieve the competency.	F	5	5	44	135	189	3.63	0.668
	P	3%	3%	23%	71%	100%		
Instructors allow trainees who have mastered the skill to proceed to perform the next task.	F	19	18	8	144	189	3.47	1.024
	P	10%	9%	4%	77%	100%		
Overall							3.59	0.745

Key (for the Mean): 1.0-1.7- Strongly disagree, 1.8-2.5- Disagree, 2.6-3.3- Agree, and 3.4-4.0- Strongly agree

The three items presented to the trainees as indicated in Table 3 were all rated above the mean average on a scale running from 1 to 4. This implies trainees agreed there were adequate interactions between instructors and themselves during the teaching and learning process. In parts, Table 3 reveals that more than 60% of trainees expressed strong agreement regarding the availability of practical facilities during their learning experience (mean=3.67, standard deviation=0.544). These results show that instructors were adequately exploiting professional documents such as schemes of work, lesson plans and e-resources to plan, assess and deliver CBT. To further cement these insights, one of the principals noted that “the balance between theory and practice varies by course. Our primary focus is on developing practical skills. We encourage instructors to assign more hands-on tasks to trainees. (Principal 07). The responses from the principal and trainees show that instructors adequately planned for their training sessions and also incorporated practicals. The findings align with those of Bai and Geng (2014), Jahonga et al. (2016) and Tambwe (2017) indicating that instructors employed a learner-centered approach that fostered the acquisition of high-quality, competency-based skills among trainees.

Table 3 further reveals that over 70 percent of trainees strongly agreed that those who had not yet mastered the skill were given additional time to repeat the tasks (mean=3.63, standard deviation=0.668). Equally, those who had already mastered the skill were allowed to move on to the next task (mean=3.47, standard deviation=1.024). These findings demonstrate that instructors tailored their approach based on each trainee's strengths and weaknesses. It also implies that instructors are making use of recommended formative assessment approaches by the government to establish trainees' learning outcomes. Tools such as demonstration, written examination, observation, oral questioning, work project, portfolio, and third-party report. To further amplify this outcome, one of the principals stated that "trainees who are slow learners receive additional time and attention to master competency-based skills." (Principal 08). These findings are consistent with observations by Mukhtar and Ahmad (2015), who indicated that instructors were focusing on trainees' individual capabilities and created opportunities for them to use equipment to complete their tasks. The findings from Canada mirrored this trend when Programme heads were asked to describe the interaction between journeypersons and apprentices during the apprenticeship training. One of the programme heads remarked that:

About 50% of the time is spent in the shop and 50% on theory. Much of our instruction takes place in the shop, while theoretical concepts are taught in the classroom in the morning and applied in the shop during the afternoon. To reinforce these concepts, apprentices engage in various projects. The complexity and scope of these projects vary across the four levels of the programmes. (Programme head 02)

The programme head's excerpt reveals that journeypersons and apprentices in Canada primarily engaged within the industries, dedicating minimal time to theoretical aspects. Also, apprentices are getting an income in exchange for their service to support themselves. This philosophy is worth borrowing in Kenya to help bridge the skills gap and provide trainees with employment, though it remains limited to apprenticeship programmes by some organisations and institutions in Kenya. These findings align well with Tambwe's (2017) conclusion that teaching in the African context should transition from an instructor-centered to a trainee-centered approach.

Cognisant of these outcomes, trainees who had completed their attachments were tasked to rate the ease of practicing or applying skills they had acquired in VTCs. A four-point likert scale was employed for this purpose, with interpretations categorised as follows: mean scores falling between 1.0-1.7 indicated minimal application of competency-based skills, 1.8-2.5 suggested limited application, 2.6-3.3 denoted moderate application and 3.4-4.0 signified significant application. A standard deviation of 0.000 indicated unanimous agreement on a particular statement, while values above 0.000 reflected varying levels of agreement. The detailed findings are presented in Table 4.

Table 4: Trainees' ratings of competency-based skills easy to practice or apply during attachment

Ease to practice or apply competency-based skills	Minimal application		Limited application		Moderately application		Significant application		N	M	SD
	N	%	N	%	N	%	N	%			
Problem-solving	12	6%	22	12%	22	12%	133	70%	189	3.46	0.931
Communication	26	14%	20	11%	33	17%	110	58%	189	3.20	1.097
Teamwork skill	32	17%	22	12%	20	10%	115	61%	189	3.15	1.177

Entrepreneurship	28	14%	35	19%	32	17%	94	50%	189	3.02	1.132
Creative thinking	31	16%	35	19%	26	14%	97	51%	189	3.00	1.167
Innovation skills	18	10%	48	25%	47	24%	76	41%	189	2.96	1.020
Entrepreneurship capabilities skills	28	15%	42	22%	40	21%	79	42%	189	2.90	1.109
ICT skills	33	18%	44	23%	51	27%	61	32%	189	2.74	1.092
Average									189	3.05	1.090

Key (for the Mean): 1.0-1.7- Minimal application, 1.8-2.5- Limited application, 2.6-3.3- Moderate application and 3.4-4.0- Significant application

From the items presented to the trainees as indicated in Table 4, all eight items were rated above the mean average on the scale running from 1 to 4. This implies that trainees were able to moderately practice and apply competency-based skills during attachment. In portions, Table 4 shows that over 50 percent of trainees easily practiced or applied competency-based skills like problem-solving (mean = 3.46, standard deviation = 0.931), communication (mean = 3.20, standard deviation = 1.097), teamwork (mean = 3.15, standard deviation = 1.177), entrepreneurship (mean = 3.02, standard deviation = 1.132) and creative thinking (mean = 3.00, standard deviation = 1.167). More so, over 30 percent of the trainees were able to exercise or apply innovation (mean = 2.96, standard deviation = 1.020), entrepreneurship capabilities (mean = 2.90, standard deviation = 1.109) and ICT skills (mean = 2.74, standard deviation = 1.092) in different capacities. The findings show that the level of importance attached to each competency-based skill by trainees aligns with employers' valuation and demand for those skills, regardless of the job or industry an individual is in. These results are consistent with the Arakit (2016), European Commission (2023), McCoshan (2022), Ondieki et al. (2018), TVETA (2019), UNESCO (2022), World Economic Forum (2020) and Yunos et al. (2017), who are highlighting high demand for skills such as communication, digital literacy, green skills, teamwork, and innovation. Also, that, the demand for these skills is expected to increase significantly in the coming years.

Bivariate Regression Analysis

To assess whether instructors' know-how significantly predicted the provision of competency-based training, a bivariate regression analysis was conducted, guided by curriculum implementation theory (Gross et al., 1971; Shiundu & Omulando, 1992; Stockemer, 2019; Tyler, 1949). Responses from trainees were operated because they are the primary consumers of CBT and prospective employees in industries and service divisions. The collected data underwent averaging for each independent and dependent variable to create new continuous variables. Table 5 presents the model summary.

Table 5: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.336 ^a	0.113	0.108	0.26687
a. Predictors: (Constant), Instructor's know-how				
b. Dependent Variable: Competency-based training (CBT)				

Table 5 shows a weak positive correlation between instructors' know-how and the provision of competency-based training to trainees, as indicated by an R-value of 0.336. The R-squared value of 0.113 implies that 11% of the total variation in the dependent variable would be explained by the independent variable. The remaining 89% were outside the scope of this study. The ANOVA results in Table 6 reveal the relationships between and within the measures of the dependent variable.

Table 6: ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	1.695	1	1.695	23.801	0.000 ^b
	Residual	13.318	187	0.071		
	Total	15.013	188			
a. Dependent variable: Instructors' know-how						
b. Predictors: (Constant), Competency-based training						

Table 6 indicates a statistically significant relationship between the instructors' know-how and competency-based training variable ($F(1, 187) = 23.801, p < 0.000$), and the model fits well in the distribution. Further details on the coefficient of this predictor are in Table 7.

Table 7: Coefficients

Model		Unstandardised Coefficients		Standardised Coefficients		t	Sig.
		B	Std. Error	Beta			
1	(Constant)	2.529	0.195			12.980	0.000
	Instructor's know-how	0.294	0.060	0.336		4.879	0.000
a. Dependent Variable: Instructor's know-how							

The regression analysis in Table 7 demonstrates a significant positive relationship between instructors' know-how and the provision of competency-based training to trainees, as evidenced by the coefficient $\beta = 2.529, t = 12.980$, and $p < 0.05$. This implies that a unit increase in instructors' know-how is associated with a 0.294 increase in competency-based skills acquisition by trainees. Therefore, the following regression equation was fitted, provision of competency-based training = $2.529 + 0.294 \text{instructors' know-how} + e$. These findings align with Gross et al. (1971), Shiundu and Omulando (1992) and Tyler (1949) who argued that effective education hinges not only on instructors possessing the necessary competencies and capabilities to impart knowledge but also on their ability to adapt their attitudes towards teaching methodologies and curriculum interpretation for trainees' benefit.

Conclusions and Recommendations

Key findings reveal that instructors in Kenya lack sufficient preparation to provide competency-based training effectively to trainees. In contrast, findings from Saskatchewan Polytechnic, Canada, indicate journeypersons are well-prepared to deliver training to their apprentices. To address these disparities, apart

from government support, vocational institutions should lobby for funds through avenues such as international donor agencies, fellowships, research grants and tax incentives to facilitate instructors' access to industrial training and refresher courses. Implementing in-house training programmes may be beneficial also to organisations and institutions providing apprenticeship training. These efforts may enhance instructors' effectiveness and cultivate a positive attitude toward planning, delivering and assessment of competency-based training. Also, overall improvement of the training landscape, ensuring a higher standard of vocational education and skill development.

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