

Full Length Research Paper

Quality of trainers at public technical, vocational, education and training institutions: The missing link in Kenya's skill development

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Kenya's development agenda is anchored on development of skill inventory of her human resource base with the onus placed on Technical and Training Institutions (TVET). However, at the Centre of skill formation, capacity of technical trainers is critical. This study examined capacity of technical trainers in Kenya terms of quantity and quality. Data were collected using questionnaires on 400 trainers randomly sampled from TVET institutions with response rate being 90%. Interview schedule was also used to collect data from Principals of 15 public TVET institutions in Western Kenya. Quantitative capacity of trainers was evaluated in terms of numbers while qualitative aspect was based on initial trainers' academic qualification, their area specialization and their involvement in continuous professional development. The study established that institutions study were inadequately staffed and mainly relied on poorly remunerated Trainers employed by Board of Governors. The study further established that though majority of trainers had at least first degree, most of them had specialty in areas falling outside the core mandate of TVET. Trainers also rarely upgraded their skills making their teaching to be majorly on basis of historical competencies. Though ideal situation had established that variables were to account for 72.5% of trainees' skill formation, the actual position on the ground revealed that variables accounted for only 22.5% of trainees' skill formation. On the basis of these findings, the study concludes that TVET institutions were incapacitated to produce human resource with right skills to meet the Country's development aspiration. The study calls for adequate staffing of TVET institutions in key courses that fall within the mandate of TVET who should be facilitated on regular basis to upgrade their skills in line with emerging technological advancements.

Key words: Development, trainers, quality of trainers, technical and vocational education and training (TVET), historical competencies, emerging technology.

INTRODUCTION

Technical and Vocational Education and Training (TVET) has been acknowledged to be precarious component of skill development. For instance, TVET has been recognized to be a critical explanatory variable that has

promoted East and South Eastern Asian countries' (seven Tiger countries) to record high economic development trajectories (Khatete and Selina, 2018; World Bank, 1991). The TVET approach advanced in

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these countries supported knowledge-based economies and quality skill development that responds to emerging technological advancement, being drivers in the economic developments.

It is on basis of evidence from Tiger Countries that Kenya, just like many other developing countries identified TVET sector to be a priority sector for Human Resource development (RoK, 2007). As way of showing commitment to TVET sector, the government of Kenya has increased budgetary allocation to this sector and foots to the tune of Ksh 30,000 in form of school fees all trainees in Public TVET colleges out of annual fees of Ksh 56,000 per year. A trainee is entitled to a further loan for Higher Education Loans Board (HELB) for balance and upkeep to the tune of Ksh 40,000. This is aimed at ensuring that no student fails to enroll for any TVET due to financial constraints in order to promote access to TVET.

As way of enhancing quality development various reforms were initiated at TVET institutions aimed at making them responsive in development of relevant skills, among them being provision of adequate and quality trainers. This is on understanding that the country needs adequate and high level of skill inventory to promote her development agenda. This study aimed at assessing the quality Trainers at Public TVET institutions and how it was impacting on skill development as revealed by trainees' academic achievement of trainees' in standardized examination on basis of evidence from Public TVET institutions Western Kenya.

Statement of the problem

Despite promised reforms to improve on quality of TVET in Kenya, government policy documents attest to the fact that Un-employment levels in Kenya continue to rise against deficiency of human resource in various sectors of the economy. This state could be an indicator to the presence of entrenched and apparently insurmountable obstacles in process of skill development at TVET institutions. Given that provision of adequate and competent trainers at TVET institutions is one of the reforms initiated by the government of Kenya in promotion of quality skill development and in view of the state prevailing state rising unemployment against shortage of labor in various sectors of the economy, this study sought to establish the state of trainers at TVET institutions and how it was impacting on quality skill formation for economic development as evidenced by trainees' achievement in standardized examination, a basis of certification and employability.

Basic research questions

The study was guided by the following research

questions;

(i) To what extent has level of staffing of Trainers at Public TVET institutions in Kenya influenced trainees' skill formation for economic development?

(ii) How has Qualification and area of specialization of Trainers in Public TVET institutions in Kenya influenced skill formation for economic development?

(iii) To what extent has Trainers' level of engagement in professional development programs influenced trainees' skill formation for economic development?

REVIEW OF RELATED LITERATURE

Influence of staffing at TVET institutions and skill development

Adequacy of trainers is critical in promotion of education. Inadequate trainers end up compromise quality of training due to failure to adequately expose learners to favorable learning (Boyd and Barbarin, 2008). Inadequacy in trainers is normally reflected in poor syllabus coverage, trainee to trainer ratio among other deficiencies. Low Trainee Trainer Ratio (TTR) reduces the number of trainees to be handled by a trainer in the classroom, ensuring the trainee's attention to the trainees and such promoting good quality training. However, high TTR will mean that a trainer to handles a big number of the trainees in the classroom. Performance of students is affected by inadequacy of trainers that is linked to staffing issues such as employment (Wanyama, 2013).

Affirming importance of adequacy of trainers in learning process Sang et al. (2011) observe that lack of adequate trainers and other learning resources has compromised the relevance of skills developed at TVET in view of demand of the labor industry. As such provision of adequate and competent trainers is critical if it is one of the key variables that should be given adequate attention. This is what this study sought to establish.

Effect of qualification and area of specialization of trainers and skill development

A study done by Donald et al. (2017) on promotion of graduate employability advances that ability of any training program to promote employability depends on viability of the same, a situation that can be achieved by undertaking Training Needs Analysis (TNA). Need analysis is used as basis of formation of skill inventory, a foundation for development of guidelines for the undertaking of any effective training programs (ibid). World Bank (2010) authored a report entitled "*Stepping up skills for more jobs and higher productivity*" where it was observed that skills mismatch in view of demand and supply is one of the topical global issues to be

addressed. It was interestingly observed that there was prevailing unemployment more so among the youth, alongside labor shortages in some sectors, a situation that was traced to irrelevancy in the courses undertaken during training whose support may be evidenced by the number of trainers available to support the teaching in such areas.

Affirming the relevance of courses and training, World Bank (2017) observes that effective TVET has been critical in the promotion of social economic advancement of South Eastern Asian countries through advancement and support of knowledge-based economies, skills development that are in tandem with modern and emerging technological advancements.

On the other hand, the United Nations Education Program (UNEP, 2011) advance that there are competencies that is pre-condition for economic growth as such as skills that accrue in pursuance of Mathematics, Information Technology, Natural Sciences and Technology (MINT). For instance, there has been an outcry of declining interest of the youth in MINT subject in European Union (UN) states as it was not only leading to decline in productivity and competitiveness of EU member states but it also had negative effect on transition to green economy (BMZ, 2011). This implies that ability of Kenya to achieve meaningful economic development by embracing TVET will be greatly be influenced by her ability to embrace MINT courses, a situation that calls for adequate and competent trainers in these areas.

Impact on trainers' professional development programs on skill development

The report of Asian Development Bank (2014) on TVET in the Socialist Republic of Viet Nam further found out deficiency in technical skills linked to lack of industrial exposure among TVET trainers was a major undoing among of TVET trainers. The study revealed that trainers had limited industrial experience in their areas; teacher-training institutions offered irrelevant programs in view of demands of the labor market; teachers lacked validity in the technical skills and application were unconsidered or undervalued in their advancement process. Many of the Trainers training institutions lacked adequate technical workshops for effective training. It was not mandatory that TVET trainers to have to undergo any industrial exposure prior to teaching at TVET institutions. This has led to the trainers teaching only basic technical concepts that did not empower learners with the quality skills sought by labor market.

According to UNESCO--UNEVOC (1999), appropriate pedagogical methodologies transfer suitable sets of knowledge, attitudes, standards and conduct; develop people's abilities and prospects to engage with sustainability concerns as a way of determining alternative ways of living. These changes have made the emerging

role of Trainers' to call for a new approach in thinking and understanding of the new vision of scholarship in the learning process (ILO/CEDEP, 2011). Learners have to take charge of their own learning as they search to establish, blend, and share their information with others. The skill training should cover expert skills, didactic-methodological know how and information of the particular Sustainability policy setting.

According to Sagnak (2012), the desired changes and innovations triggered by technological changes call for competent Trainers who are able to adapt themselves to these changes to deliver quality education given that new practices have created an impact on the knowledge and skills in the precarious nature of employment. Majumdar (2013) observes that this is only possible if trainers are able to impart Higher Order Thinking skills (HOTs) and propagate learning to learn skills that aim to promote learners adaptability to any work environment that might emerge in addition to present day to day knowledge as part of coping mechanism. This situation that puts quality of a trainer at the Centre in skill development. A quality trainer is the one with ability to influence quality of the learning outcomes, a situation that is pegged on ones' academic qualification and continuous profession development (Kallo and Semchenko, 2016).

Similarly, Stevens-Smith (2020) observes that trainers' mode of teaching, interest in their area of specialty and their quest to update their capacities have an impact on the quality of skill development. This position is affirmed by Simiyu et al. (2021) who contend that trainers should have capacity to operate as team; research, reflection and shift as necessary in teaching practice; and capacity to be innovative and impart innovation in learning process, qualities which can be attained through continuous professional training of trainers.

RESEARCH METHOD

The study embraced correlation research design. Saunders et al. (2007) state that correlation research design is suitable for studies where it is not possible to subject autonomous variables to random assignment of subjects, action and manipulative control. This design made it possible for the researcher to determine the association between independent study variables (attributes relating to trainers) and independent study variable (students' academic achievement).

The study was carried in 15 public TVET institutions in Western Kenya. The institutions targeted for the study were those that had been in existence for a period of at least five years. The respondents were trainers and principals of the 15 public TVET institutions. Fifteen principals (principal of each institution) and 400 trainers making a total of 415 respondents were involved in the study.

Sampling Technique involved Census, Proportionate, Simple Random Sampling (SRS) and Purposive Sampling. Three principal instruments were used for the purpose of data collection: questionnaires, interview schedule, and document analysis guide. The study generated both quantitative and qualitative data which. Analyses of quantitative data were done with assistance of

Table 1. Regression model summary showing relationship between independent and dependent variables.

Model	R	R square	Adjusted R square	Std. error of the estimate
1	0.872 ^a	0.760	0.725	0.25346

^aPredictors: (Constant), capacity of to promote skill formation increases with trainers academic qualification, involvement in consultancy services by trainers promotes skill formation, Advancement in education by trainers , Adequacy of trainers , Area of specialization of a trainer is critical in influencing skill formation; ^bDependent Variable: skill formation

Table 2. Regression analysis of impact capacity of trainers public tvet institutions on skill formation for economic development in western kenya.

Model	Unstandardized coefficients		Standardized coefficients	T	Sig.
	B	Std. error	Beta		
(Constant)	2.540	0.196		12.972	0.000
Adequacy of competent trainers promote quality skill development	-0.768	0.096	-0.804	-7.965	0.000
Area of specialization of a trainer is critical in influencing quality of skill development	0.208	0.103	0.214	2.014	0.052
1 involvement in consultancy services by trainers promotes quality of skill development	0.041	0.063	0.065	0.649	0.521
Advancement in education by trainers enhances their capacity to promote skill development	-0.177	0.045	-0.367	-3.950	0.000
capacity of to promote skill development increases with trainers academic qualification	0.202	0.093	0.231	2.172	0.037

^aDependent Variable: Quality of skill development.

Statistical Package of Social Sciences (SPSS) Version 23 Software while qualitative data were analyzed thematically data using inferential statistic. This involved running of correlation and regression in order to test the relationship between and among variables.

RESULTS

This section presents results to the following three study research questions that were under investigation. However, before seeking results for various study variables, the study first sought to establish the extent to which independent study variables namely in dependent variable (quality of skill development). Positive statements relating to the above variables were given to trainers' respondents. Data generated was used to develop regression model summary. The results are shown in Table 1.

Table 1 gives the values of R and R². The value of R² shows the value of independent variables that can be accounted in the dependent variable. The value of R is 0.872, representing Multiple Correlations, which shows high Correlation. The adjusted R Square from the table is 0.725. This implies that 72.5% of dependent variable can be attributed to independent study variables.

Table 2 provides information concerning Multiple Regression concerning each variable under consideration. This analysis was critical for it facilitated the making of predictions on influence of each study variable on quality of skill formation for on economic development.

$$Y = a + bX_1 + cX_2 + dX_3 + eX_4 + fX_5$$

Where Y= quality of skill formation, a, b, c, d, e, f are constants; X₁= Adequacy of competent trainers; X₂= Area of specialization of a trainer; X₃= involvement in consultancy services; X₄= Advancement in education; X₅= Trainers academic qualification; Therefore a=2.540; b=-0.804; c=0.214; d=0.065; e=-0.367; f=0.231; Therefore:

$$Y = 2.540 - 0.804X_1 + 0.214X_2 + 0.065X_3 - 0.367X_4 + 0.231X_5.$$

This implies that reduction in inadequacy of trainers by one unit will leads to improvement in quality of skill development by 0.804. Similarly reduction in advancement in education reduces by one unit leads reduction in quality of education by 0.367 units. However increase in one unit in relevance of area of specialization, level of engagement in consultancy services and academic

Table 3. Response on adequacy of trainers at Study institutions in all Courses.

Variable	Frequency	Percent	Valid percent	Cumulative percent
SA	10	2.8	2.8	2.8
A	64	17.8	17.8	20.6
UD	38	10.6	10.6	31.1
D	135	37.5	37.5	68.6
SD	113	31.4	31.4	100.0
Total	360	100.0	100.0	

Table 4. Trainer's response on how TVET institutions were coping with staffing inadequacy of trainers.

Mode of coping	Frequency	Percent
Part time trainers	302	83.9
Multi-grade teaching	50	13.9
Multi-grade and part-time	8	2.2

qualification will lead to increase in quality skill development by 0.214, 0.65 and 0.231 respectively. Lastly among the variables the one with greatest influence in determination of quality of skill development is adequacy of competent c trainers as it accounted for about 64.64 percent of skill formation.

Research question one: To what extent has level of staffing of Trainers at Public TVET institutions in Kenya influenced trainees' skill formation for economic development?

Data to address the objective was captured from trainers' responses on positive statement relating to various aspects that influence quality of trainers as defined by study objectives designed on Likert scale.

Findings in Table 3 reveal that only 20% of trainers' respondents either agreed or strongly agreed that their institutions had adequate trainers in all courses. This meant that majority of trainers' (over 79%) were in agreement that their institutions were understaffed a situation that was likely to compromise skill formation among trainees.

Results in Table 4 show that majority of the Trainers respondents (302) (83.9%) indicated that the situation was managed by hiring part time trainers, (50) (13.9%) multi-grade teaching and 8(2.2%) used both part time trainers and multi-grade teaching.

Document analysis revealed Board of Governance (BoG) of various institutions had employed more than 53% of the trainers with aim of bridging the gap of staffing deficit. These earned consolidated salary of less sh 15,000 in all study institutions save for one compared to

those employed by the government whose starting consolidated salary was sh 45,000. The low earnings could be the reason for over 55% turnover among BoG Trainers in study institutions as revealed through documentary evidence.

Research question two: How has qualification and area of specialization of trainers in public TVET institutions in Kenya influenced skill formation for economic development?

Findings in Table 5 show that 78(5.3%) had Master's degree in Education (M.ED), 932(63.4%) had Bachelor's degree in Education (B.Ed.), 176(12%) had Bachelors in Science (BSc), 51(3.5%) had Higher Diploma and 102(15.7%) had ordinary Diploma qualification. Therefore majority of trainers had at least first degree.

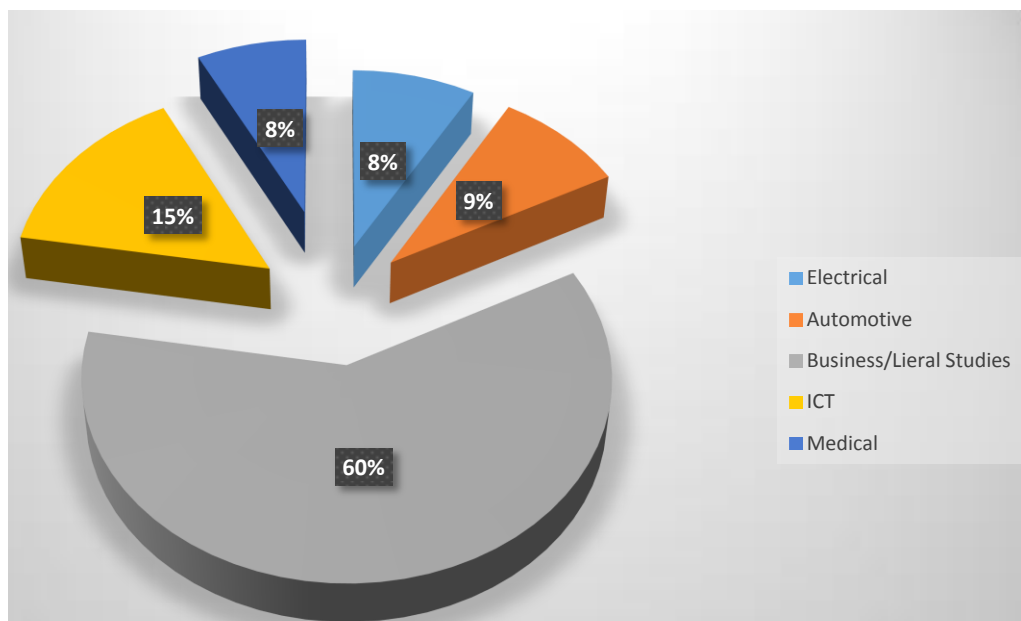
Area of specialization of trainers

Area of specialization was sought for due to differential level in impacts for different courses on skill formation for economic development. The findings are reflected in Figure 1.

Results in Figure 1 on analysis of Trainers on the basis of area of specialization showed that Electrical (8%), ICT (15%) Business (60%), Automotive (9%) and Medical (8%). Therefore majority of trainers were in Business and Liberal Studies courses and indicator enrollment was inclined towards business oriented and liberal studies oriented Courses.

Table 5. Academic qualifications of Trainers at Study Institutions.

Current qualification	Current no. of trainers	(%)
M.Ed.	78	5.3
B.Ed.	932	63.4
Bsc	176	12.0
Higher diploma	51	3.5
Diploma	231	15.8
Total	1470	100

**Figure 1.** Area of specialization of trainers.**Table 6.** Status of trainers and advancement in Education.

Current qualification	Current no. of trainers	No. expected to be pursuing	No. pursuing	No not pursuing
M.Ed.	78	Phd-78	7(8.6%)	71(91.4%)
B.Ed.	932	Masters-932	46(5%)	886(95%)
Bsc	176	Masters-176	2(1.3%)	174(98.7%)
Higher Diploma	51	Degree-51	4(8.7%)	47(91.3%)
Diploma	233	Degree-233	43(18.6%)	190(81.4%)
Total	1470		102(6.94%)	1368(93.06%)

Research question three: To what extent has Trainers' level of engagement in professional development programs influenced trainees' skill formation for economic development?

The results in Table 6 revealed that only 102(6.94%) of trainers were advancing in education above their previous qualification. This meant that majority of trainers

(93.06%) at study TVET institutions were likely to be teaching based on historical competencies.

The results in Table 7 show that only 35.3% of trainer respondents were in agreed or strongly that majority of trainers in their institutions engaged in consultancy services. This findings show that majority of (over 60%) trainers attested that there was low level of engagement of trainers in consultancy services; a situation that was

Table 7. Engagement of trainers in consultancy service.

Variable	Frequency	(%)	Valid (%)	Cumulative (%)
SA	65	18.1	18.1	18.1
A	62	17.2	17.2	35.3
UD	97	26.9	26.9	62.2
D	59	16.4	16.4	78.6
SD	77	21.4	21.4	100.0
Total	360	100.0	100.0	

Table 8. Model Summary on study variables.

Model	R	R square	Adjusted R square	Std. error of the estimate
1	0.487 ^a	0.237	0.224	1.12728

Predictors: (Constant), adequacy of trainers in all courses, Trainers undertaking regular in-service courses, academic qualification of trainers, engagement in consultancy services, trainers are in MINT Courses, advancement in education of trainers. b. Dependent Variable: skill formation

likely to compromise their effectiveness.

Inferential statistics

Data for generation of model summary was generated from trainers' responses on positive statements relating to study variables that scored using Likert scale running from 1 for Strongly Agreed (SA) up to 5 for Strongly Disagree (SD). The findings are presented in Table 8.

Table 8 gives the values of R and R². The Table gives the value of R² as 0.224. This means that the actual contribution of independent variable on capacity of trainers only contributed to 22.4 percent of the value of skill formation among trainees at public TVET institutions that were under study.

However, the findings in Table 6 show the values of R. The value of R as 0.872 which shows high Correlation. The adjusted R Square from the table is 0.725. This implies that 72.5% of dependent variable can be attributed to independent study variables. Comparison between findings in Table 6 under ideal situation and Table 8 under actual situation shows marked discrepancy between the two states; ideal and actual with negative difference of about 50% between ideal and actual.

Conclusion

Skill development at TVET institutions was compromised by inadequate trainers; high turnover of part time trainers and trainers who were majorly in areas of specialization outside the demand of various sectors of the economy. This situation was worsened by trainers who rarely upgraded their skills making them to undertake their

training based on historical competencies.

Recommendations

The study recommends for staffing of TVET institutions with adequate and qualified trainers who should be facilitated regularly to upgrade their skills as way of enhancing their relevancy. The study also recommends review of policy that hinders trainers from engaging in professional practice by terming it conflict of interest given that engagement in professional practice enhances Trainers effectiveness.

Statements

- There is no restriction placed on access of data gathered through the study
- In this research, participants' confidentiality was ensured as they were advised not to write any form of identification anywhere on the questionnaire. Results have been given in the form of group responses as a way of guarding identity of respondents.

CONFLICT OF INTERESTS

The authors have not declared any conflict of interest.

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