

The Influence of Instructional Equipment on Student Skills Development in Public Technical Training Institutes in Kenya

By

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Abstract

Technical Training Institutions (TTIS) in Kenya play a significant role in providing skills that are required in the various sectors of the Kenyan economy. A concern of a mismatch of skills produced by Technical Training Institutions and the skills required by the industry has been raised. This study thus sought to fill the gap. The study focused on diploma students for clothing and Building and Construction Technology. Findings revealed that (*H₀*) *there is a significant statistical relationship between instructional equipment and skill development*. Qualitative results supported these findings as TTIs were found highly theoretical. The study concluded that TTIs cannot be relied on in producing adequate skills and neither are the industries in training students. The researcher proposed a perceptual a curriculum implementation model aimed at tackling the issue of skills gap.

Key words: Kenya, Instructional equipment, Skills development, Technical institutions, Industry & Convergence Parallel mixed research methods

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Introduction

Science technology and innovation are technical skills developed by TVET institutions; they constitute key drivers of economy in any nation. To develop technical skills that are relevant to the current technology, instructional equipment is a key factor in the process of instruction. Instructional equipment refers to consumable and non-consumable materials used in the process of skills development in workshops, laboratories and classrooms. These also include reagents, machines and tools. Similarly, skills development acquisition, learning and formation are terms used synonymously and interchangeably world-wide to describe the development of work-related skills or competencies. [UNESCO], 2015) defines skills development as the acquisition of practical competencies, knowhow and attitudes necessary to perform a trade or occupation in the labour market. According DeKeyser (1998); (Kee, 2019) skills development takes place in three stages: cognitive stage in which the task is new to the learner, the associative stage in which a learner practices a skill repeatedly alongside a tool and the automation stage in which the learner masters a skill comprehensively. Therefore, instructional equipment is an important element to be studied in the process of skills development with the aim of discerning the extent to which the inputs influence skills development.

Back ground to the Study

The escalating unavailability of quality skills globally brought about by rapid global technological change has challenged governments to review skills development policies and requirements among them instructional equipment. The United Nations Education Science and Cultural Organization [UNESCO], 2015) and the World Bank (2020) observed that skills gap is a global issues skills training is conducted in an informal sector in which skills developed are not certified and thus cannot be aligned with the global standards. To succeed in producing well skilled graduates, World Bank (2020) advices that the skills need to be trained in certified colleges and universities with current facilities among the instructional equipment. Question is, how well are the institutions equipped to facilitate development of quality skills? In this regard, developing nations seem to face a myriad of challenges in regard to instructional equipment as most of them are still recovering from colonial hangovers and civil war. Despite this, stakeholders are aware of this challenge and thus in the process of reviewing education systems with the goal of tackling skills development issues. Despite the concerted efforts made by the government of Kenya to improve to equip technical institutes with instructional equipment the issue of skills mismatch between those produced in training institutes and those of the industry has persisted.

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Statement of the Problem

Technical education is an indispensable key driver of economic and social development in any nation. In this regard, Kenya envisions technical education as one strategies in the achievement of vision 2030 and an enabler of development. Despite this, there was a concern among stakeholders in the industry on the existence of technical skills gap in various sectors. Despite the efforts the government had made in addressing the issues of skills gap such as establishing technical institutions in each county, equipping them with modern equipment and training more skill lectures, the issue of skills gap are still being reported. The gaps have manifested in the unavailability of skilled graduates to operate available equipment in the industry and high qualification graduate certificates with unemployable skills (Anindo et al, 2016;Wambui, 2016). In this regard a difference between skills taught in training institutes and those required in the industries is observed. Due to the mismatch of TTIs and industry skills, Kenya has suffered consequences of inadequately developed skills evidenced by physical structures collapsing and taking lives across the country notwithstanding the import of second hand textile products (Maina et al., 2016; Njoroge, 2019). When such a phenomenon is observed the main problem is in the classrooms, workshops and laboratories of the training institutions, (Lucas, Spencer and Claxton, 2012). The 8.4.4 system of education whose one goal was to produce well skilled graduates failed to achieve this goal. While the problem of this skills gap is hoped to be solved by Competence Based Education and Training (CBET) and the new system of education, 2.6.3.3.3, the question whether Technical Institutions in Kenya have the required instructional equipment capacity to produce skilled graduates is not answered. Therefore, the urgent need to fill the gap that exists between learned skills in TTIs and skills needed in work places initiated this research work.

Research Questions

The study was guided by the following questions:

1. To what extent does the student-equipment ratio influence student skills development in public technical training institutes in Kenya?
2. To what level is the training equipment related to those of the industry in public technical training institutes in Kenya?

Research Hypothesis

The study hypothesis was tested on its null form:

H₀: *there is no statistical relationship between instructional equipment and student skills development in public technical training institutes in Kenya*

Purpose of the Study

The purpose of the study was to investigate the influence of instructional equipment on student skills development in public Technical Training Institutions in Kenya in order to provide evidence based findings and solutions to the instructional equipment issues in Kenya.

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Theoretical Framework

Based on the literature reviewed two significant educational theories emerged: the open systems theory in education by Ludwig Von Bertalanffy (Adams et al, 2014) and the Decision Making theory by Simon Herbert (Campitelli & Gobet 2010). The former is social and the later scientific. An open system is a complex of interacting elements that are open to, interact with their environments in order to achieve set goals. A public TTI is a system comprising of students, principals, lecturers as main elements and inputs, through puts and outputs and sub elements. Instructional equipment are inputs in this case. The decision making theory was selected for this study because of its satisficing and bounded rationality principals that support systems thinking in leadership skills learning. The theories are important to this study as they emphasize unity of purpose, involves the student and provides a basis for understanding inherent instructional equipment challenges in the TTIs and provided guidelines for evaluation of results, decision and recommendation making.

Review of Related Literature

A global study conducted by ILO in 2015. Focusing on Jamaica, Chile, Malawi, Philippines, India and Australia, established that only Philippines and Australia met the global training standard in regard to technical skills instruction and equipment. The rest lacked required training skills in which lack of the capacity to integrate theory and practical learning especially with regard to rapidly evolving science and technology. Joo (2018) demonstrated that Malaysia has well equipped technical institutions with systemically linked elements through Center focused Development Management skills. In Nigeria, Ifeyinwa and Serumu (2016) revealed defects in regard to training equipment that included lack of consumable and non-consumable materials and library sources for curriculum support. The study also established that industries as well were not well equipped.

When such observations that industries and training institutes are inadequately equipped, the fact that technical institutes cannot rely of industries for student skills practice emerges. In 2014, Ayonmike made a similar observation that industries and technical training institutes in Nigeria were either empty or stocked with obsolete equipment. In this regard, Akala et al (2016) established that the main group of people raising the issue of skills gap is industries. While this observation is made in Nigeria, Sherry and Yesuenyeagbe (2013) made similar observation in Ghana in which the country's few technical training institutes produced graduates with deficiencies in their areas of specialization due to inadequate training equipment and tools in the hands of inadequately trained trainers.

Recovering from a genocide hangover, Nizeyimana's (2016) study which focused on factors affecting the provision of quality training in Technical Vocational and Education Training Institutions in Rwanda's findings show that Kigali city has modern infrastructure and in good condition. The study observed that TTIs in Rwanda enjoy sufficient electricity, water supply, modern spacious classrooms, adequately equipped workshops and adequately equipped libraries. In such a case student equipment ration was adequate. The study however failed to consider the Abraham Maslow theory of needs which asserts that sufficient and stable development of any sector requires sufficient amount of time to establish and grow.

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In Kenya, the Kenya Institute of Education (1990) recommends that all TVET students in Kenya carry out fifty-seven (57) practical study hours per a term comprising seven practical lessons within a period of twelve weeks. In this regard a study carried out by Anindo et al. in 2016 on training equipment and acquisition of skills by students in Nairobi County established that inadequacy, obsolete and irrelevant state of training equipment led to poor graduate skills acquired. Student equipment ration was observed at 1:4 and above. As a result, teachers used lecture method in a psychomotor based domain. Skill lecturers lacked industrial experience. The study also observed that TTI graduates possessed high qualification certificates that impressed employers that were later found void of skills at the workplace. The study thus that suggested a collaboration of parents and government in the provision of training equipment. Similar findings were established by Adjrah (2014) in Togo, Kemevor and Kassah (2015) in Ghana and Munishi (2016) in Tanzania.

A study conducted by Malechwani (2018) on the effect of college resources and student engagement on learning outcomes in Kenya's higher vocational colleges revealed that students in well-equipped vocational colleges performed poorly in national examination with many referrals at subject levels. This revealed that even which the recommended students' equipment ratio (1:3) there is still the issue of skills mismatch in Kenya. A study conducted by Barasa and Kwasira in 2019 in Kenya showed reasons that can be verifiable as to why the difference between industry and technical education skills the training institutes adequately equipped notwithstanding. These included outdated equipment, inflexible curricular, ill-trained instructors and lack of professional supervision. Similar findings were established by Mulenga and Chileshe (2020) in Zambia, Onditi (2015) in Kwale, Bogonko (2018) in Nyamira, Mosoti (2017) in Nairobi counties in which the instructional equipment ratio were observed at an average of 1:4 thus revealing one major cause of skills gap across the country.

Summary of the literature review

Literature reviewed has revealed that instructional equipment accounts for the manifested issue of skills gap. The issue of skills gap is mainly raised by industries whom the literature also revealed are not well equipped hence raising the question whether they are part of the problem or part of the solution. These findings showed that skills training institutions cannot fully rely on industries for skills training during internship. Moreover, inadequate and/or unavailable instructional equipment, inadequately trained skill lecturers, lack of professional supervision, obsolete and rapid technological change were revealed as issues that accounts for the current issue of skills gap. Nevertheless, problems in regard to the influence of instructional equipment could be solved using systems thinning approach to leadership and management.

Theoretical Framework

Skills development challenges can be as a result of inconsistencies and deviations from the training norms and regulation (Maera, 2017). Based on assertion, the study opted to select the Open Systems theory in education based on its principle of unity of purpose on elements involved. The Open Systems theory in education was originally developed by Ludwig Von Bertalanffy in 1930s and developed further after the Second World War (Adams et al., 2014). A Technical institution is an open system comprised of major and minor elements in which

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principals, students, lecturers are major and inputs, through puts and outputs are minor elements. In this regard, instructional equipment represents inputs. The theory was selected for the study because it involves the students who are the main elements in the process of skills development. In the light of the Second law of thermodynamics, Mwambi (2020) opine that a unit of purpose in regard to the elements of technical education is important and without which the institutions experience entropy, disintegrate and die. For this concern, the systems theory lacked one aspect, decision making principles and on this basis the decision making theory by Simon Herbert (Mintrom, 2016) was introduced to fill the gap and guide the study in how the decisions are made and to understand the role stakeholders play in tackling skills development issues in regard to instructional equipment.

Methodology

This study adopted a Convergent Parallel Mixed Method Designs. According to Crewel & Padblo-Clark, (2011) and Mukoka, (2020), a Convergent Design requires that the researcher concurrently conducts the quantitative and qualitative elements in the same phase of the research process, weighs the qualitative and quantitative methods equally, analyses the two components independently, and interprets the results together. The study was based in Kenya targeting all 49 technical institutes certified by the Technical Vocational Education Training Authority and recognized by the Kenya National Examination and Higher Education Loan Board by 2018. Target population included 49 principals, 348 lectures and 4,999 students. The Fisher 1998 and Bartlett at all (2001) sample determination formula were used to obtain a sample participant of 11 principals, 100 lectures and 100 students. Contacted respondent included 80 lecturers, 80 students and 8 principals. Simple random sampling method was used in obtaining actual lecturer and student participants while census method was applied in obtaining the number of on principals participating in the study. Questionnaires were used to collect data from lectures and students, interview schedule on principals, document guide was used in collecting data from equipment inventories and observation guide was used in collecting data from workshops and laboratories.

Validity and reliability of instruments

Cronbach alpha was used to test reliability of the research instruments. Cronbach alpha is a measure of internal consistence of how a set of items in a group are related. The method was preferred for this study because of non-categorical data was used in this study. A reliability test of > 0.6 is acceptable, > 0.7 reliable and > 0.8 very reliable (Drost, 2011). Students' questionnaires administered in this study show that the questionnaire items tested were highly reliable as they yielded a Chronbach Alpha of 0.81 highest and 0.70 Lowest for items related to the dependent variable. High reliability test results are indicators of high validity of research instruments (Creswell 2014). Therefore, the data collection instruments used in this study were valid.

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Data analysis and interpretation

Findings on demographic

Demographic information is fundamental in data analysis in regard to the area of study. It forms the base line for the study. In this regard the study endeavored to obtain a general information of the training in regard to enrolment and availability of technical education course offered in the training institutions. Findings indicated that there was gender disparity in which more males 51(72.9%) were enrolled in the TTIs than male 19 (27.1%). Similar findings were established on the teaching and administrative staff countrywide. The findings were not in favor of the open admission policy that is open to all and non-discriminative to gender and age ([TVET, Act], 2013). Moreover, the following results were obtained in regard to enrolment and availability of the studied courses.

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Table 1: Actual number of participants per sampled and technical training institutions

No.	Names of TTI s	No. of Principals	No. of Building Technology Lecturers	No. of Cloth Technology Lecturers	No of Cloth Technology Students	No of Building Technology Students
1	Rift Valley	1	16	N/A	N/A	56
2	Mawego	1	15	N/A	N/A	17
3	Kinyanjui	1	15	N/A	N/A	36
4	Buret	1	09	N/A	N/A	17
5	Sotik	1	05	N/A	N/A	04
6	Ekerubo Gietai	1	15	07	08	17
7	Wote	1	15	08	10	26
8	Nairobi	1	N/A	N/A	N/A	N/A
9	Maasai Mara	-	-	-	-	-
10	Machakos	-	-	-	-	-
11	Karen	1	4	9	15	16
Total		9	94	23	33	189

Source: Sampled Technical Training Institutions in Kenya

Key: N/A means the course is not available at the institution

- Means no permission granted for data collection

Table 1 reveals that the technical institutions lack capacity to offer diversified curriculum especially in technical education and this largely explains the skills gap in Kenya.

According to DeKeyser (1998), skills learning requires tools for procedural learning in the second and third stages of skills leaning that include associative and automation stages. In this regard, the study sought to establish the ratio of student training equipment in order to establish the cause use skills gap studied. The following lecturer’s quantitative responses in regard to training equipment ratio and skills development were obtained.

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Table 2: Lecturer opinions in regard to training equipment ratio and skills development

Ratio	Frequency of use	Percent (%)
1:1	3	4.34
1:2	4	5.79
1:3	15	21.74
1:4	20	28.99
1:5 and above	20	28.99
Low	7	10.15
Total	69	100

Table 4.42 reveals that most TTIs in Kenya lack adequate training equipment as majority 20 (28.99%) gave a ratio of 1:5 and above and at the same time 20(28.99%) gave a ratio of 1:4 while 15 (21.74%) gave a ratio of 1:3 which is the recommended ratio by KIE (1990) and the current CBET. 4 (5.79%) gave a ratio of 1:2 and 3 (4.34%). The results show that the lecturers agree that the equipment ratio does not meet the policy requirement 1:3. Similar findings were established by Akala et al (2016) in the whole of sub-Saharan Africa, Mwila (2016) in Zambia in which an instructional room designed for ten students in used by over fifty students. This means that students are learning theoretically or using one equipment to demonstrate the skills. This similar situation was established by Anindo in 2016 in Kenya in which students did not even have an opportunity to touch the training equipment. These literature thus revealed that there is a possibility of students graduating from technical institutes without practical learning experience. In regard to the student quantitative responses on the relationship between technical institute and industrial equipment as revealed in table two, the following findings were obtained:

Table 3: Relationship between TTI and Industrial Equipment

Statement	Level	Frequency	Percent
Extent training equipment related to those of the industry	Very low	27	38.6
	Low	5	7.1
	Moderate	28	40.0
	High	8	11.4
	Very High	2	2.9
Total		70	100%

Majority in table 4.65, 28(40%) in Table 4.56 reveals that the equipment are moderately related, 27 (38.6%) indicated very low extent, 8 (11.4%), 5 (7.1%) and 2(2.9%). In this regard the majority 55 (78.57%) opine that the similarity is low. This means that there is lack of collaboration between industries and TTIs in regard to skills training. In this regard, collaboration among stakeholders such as sector skills advisory committee and national skills development authority with industries and TTIs seems to lack. As result TTIs are likely to

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experience entropy in the process of training as skills as learning in TTIs is irrelevant to that of the industry hence a cause of skills gap in Kenya.

Table 4: Chi-square test for ratio of equipment and similarity to those of the industry

Chi-square test for Ratio of equipment and similarity to those of the industry

Chi-square test	Value	Df	Asymp. Sig. (2-sided)
Pearson Chi-Square	22.127 ^a	12	0.036
Likelihood Ratio	25.609	12	0.012
Linear-by-Linear Association	7.002	1	0.008
N of Valid Cases	69		

a. 14 cells (70.0%) have expected count less than 5. The minimum expected count is 0.35.

A Chi-square test was performed to compare the relationship between ratio of the instructional equipment and extent the equipment similar to those described in the curriculum. The test shows that there is a significant relationship ($p=0.036$, Chi-square=22.127, $df=12$) between ratio of instructional equipment and the extent the lecturers felt they were similar to those described in the curriculum. Therefore, the revealed state of equipment cannot account for issues skills gap.

Qualitative findings for lecturers

In regard to industry and training equipment similarity level, the lecturers' responses focused on technology, finance and stakeholder factors. In this regard, one lecturer asserted that, technical institute equipment and those of the industry will never be the same as industries are changing in regard to the market demands while training institutes are focusing on the rigid curriculum. The respondents opined that in this case industries are the ones to change and not the training institutes. This assertion revealed one cause of skills gap in Kenya which is lack of collaboration or systems thinking among stakeholders.

Students' responses

Quantitative responses in regard to technical institute and industrial equipment

Chi-square test on the relationship between TTI equipment and those of the industry was conducted. In regard to this student respondent were asked to compare TTI training equipment with those of the industry in which they were attached by 2019. The following statistical results generated:

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Table 3: A comparison of TTI training equipment to those of the industry using Chi square test

Chi-square test	Value	Df	Asymp. Sig. (2-sided)
Pearson Chi-Square	34.556 ^a	16	0.005
Likelihood Ratio	29.085	16	0.023
Linear-by-Linear Association	1.529	1	0.216
N of Valid Cases	70		

a. 21 cells (84.0%) have expected count less than 5. The minimum expected count is 0.09.

A Chi-square test was performed to compare the ratio of equipment to students and the extent the training equipment were related to the industrial attachment. The test shows that there is a significant relationship ($p=0.05$, Chi-square=34.556, $df=16$) between ratio of equipment to students and the extent the training equipment were related to the industrial attachment. The null hypothesis was rejected and the alternative retained that there is a statistical relationship between instructional equipment and skills development. Therefore, TTIs in Kenya cannot rely on industries in offering practical training to their students, Anindo (2016) concurring. Similar findings were established by Ifenyiwe & Serum (2016) and Ayomnike (2014) in Nigeria. The government as well as other stakeholders therefore must play a big role in coming together in providing institutions with relevant equipment as well as linking them with the industry.

Qualitative responses for students in regard to similarity between industrial and technical institute equipment

Findings in regard to the question raised responses that focused on technology, professionalism management and ethics. In this regard most respondents showed that the equipment were different depending of the level and type of internship industry. The respondents also showed that TTIs lacked adequate equipment and as a result the students were expected to practice the skills during the industrial attachment period. In this regard, Student respondent number 34 commented that *“the equipment I found in the industry were quite different from the TTI’s as they were digital, faster and efficient”*. Student respondent number 28 lamented that, *“the equipment in the industry were new as we did not have training equipment at the TTIs and no instructor for the practical subject, we struggled all along learning on our own”*. Moreover, ethical issues were raised. In regard to this, student respondent number 41 lamented that, *“the manager in my place of industrial attachment only allowed students from his tribe to access industrial equipment and harassed the us as well”*. Similar findings were reported by Malechwanzu in 2018.

Principals’ responses in regard to the training equipment ratio and skills development

Through the principals’ interview schedules the study in the first place ascertained that that most of the technical institutes (80%) did not offer Clothing and Technology course and neither did the institutions offer other key technical education courses such as Bathymetry and carpentry. The principals interviewed had similar experiences on the cost of procuring and maintenance of the equipment that was very high however the researcher observed a low opinion towards hands on courses and self-esteem contributed to the absence of the courses in the TTIs. This

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observation is subject to other study. Responses raised in regard to the question showed that 20% of the interviewees had adequate, current, well maintained and used equipment. Those who had different responses revealed that the equipment ratio was incommensurable with the students, inadequate for various departments, obsolete and that equipment manufacture knowledge was lacking among the skills training lecturers. The finding showed that the cost sharing policy seemed not to work effectively as students were not able to provide equipment and materials required of them. This means that the lessons learned from the Kamunge's 1988 report were not implemented. Moreover, available equipment were not inclusive especially in regard to fit physically challenged students who felt gifted in technical courses and could not be admitted.

One principal opined that “the government needs to think about disabled gifted students now that we have the technology. For example, we have a blind student who wanted to be a pilot but could not pursue the course, as an institution we could only admit the student for available courses. That is all we could do to help the student.”

With such a case displacement of talents was noted.

In regard to similarities and differences between industrial and technical training institutes' equipment, the principals revealed that the equipment will not be fully similar and as a slight change in the industrial market has a trickle-down effect to the technical institutes. Additionally, technical institutes cannot afford to adjust to the change brought about by the rapid technological change. Similar findings were reported by Kyarizi (2016) in Uganda, Koboonye (2020) in Botswana and Mulenga and Chileshe (2020) in Zambia. This thus revealed a lack of systems thinking among stakeholders among them National Skills Development Authority, Sector Skills Advisory Committee technical institutes and industries in regard to instructional equipment and skills development.

Observation findings in regard to the influence of instructional equipment and skills development

Observation that was based on workshops and laboratories revealed that most technical institutes were equipped with both manual and electrical equipment. In regard to Clothing Technology departments, none of the technical institutes studied had computerized machines. This was unlike the Building and Construction technology department equipment. Due to low enrolment rate at diploma level, student equipment ratio was observed as adequate. Vandalism of equipment was observed in which the damaged machines abandoned in the workshops were used as book shelves for students however, majority of the equipment available were operational. The study also observed that TTIs had both competent and incompetent lecturers as some of the lecturers could not express themselves and neither explain the function of the equipment available. Similar findings were made by Ngoveni (2018) in South Africa. The findings thus can be used to show that Kenya is likely not to obtain vision 2030 as TTI lack some key technical courses and required training equipment that will enable Kenya move to the second world economy. The observation thus shows the current state of skills gap is likely to persist is no intervention is offered as observed by Malechwenzi in 2018.

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Document analysis on the influence of instructional equipment and skills development

Document analyzed included inventory for the Clothing Technology and Building and Construction Technology (BCT) departments. Findings established that records are available but not updated in regard to equipment purchase dates, service dates, replacement, audit, order and return. Lack of updated records accounts for the current issue of skills gap, lack of audit and supervision. Therefore, this is one of the causes of skills gap.

Summary of findings

Focusing on the findings, skills development in Kenya in regard to the influence of instructional equipment on skills development seems to be face with a myriad of challenges that can be summarized as curriculum, stakeholders, supervision, economical and pedagogical based. These include: lack of adequate instructional training equipment, lack of systems thinking and decision making among stakeholders, lack of adequate resources to invest in the instructional equipment, presence of inadequately trained skills lecturers, in-adherence to the code of conduct or chatters that are used to instill discipline among workers, students and lecturers and poor student participation factor.

Comparing and contrasting quantitative and qualitative data findings

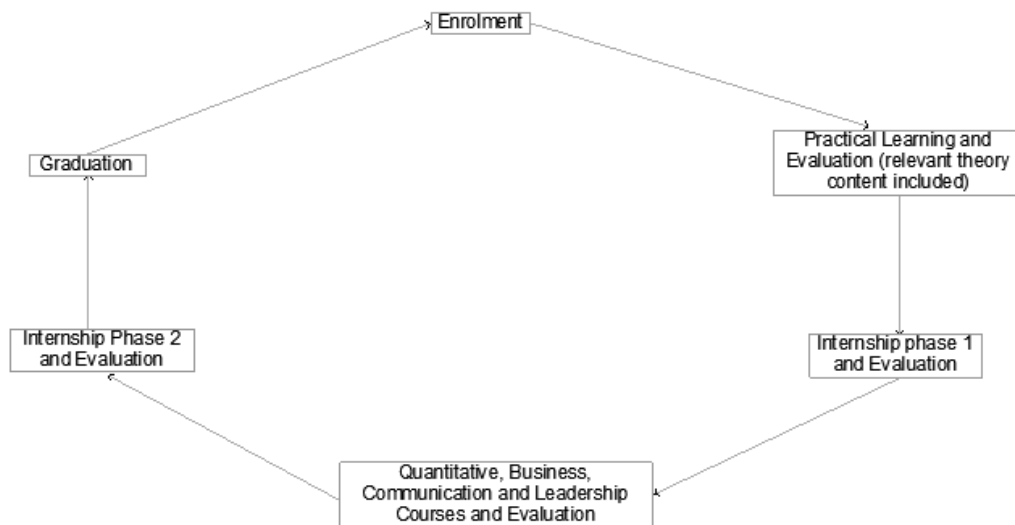
The study was about the influence of instructional equipment on student skills development in public TTIs in Kenya. The alternative hypothesis was retained; *there is a statistical relationship between instructional equipment and student skills development in public TTIs in Kenya in which p value for student responses was 0.05 and lecturers 0.036 and alpha set at 0.05*. The null hypothesis can also be accepted as there is no strong evidence to accept or reject it. Qualitative data supported these findings and majority opined that TTI equipment were moderately related to those of the industry. These results to some extent indicate that instructional equipment does not account for the observed phenomenon of skills gap and at the same time it does. Focusing on the principles of skills development in reference to KIE (1990), DeKeyser (1998) and Simpson (1966), instructional equipment are inevitable especially in regard to the associative and autonomous stages of skills development. The reason as to why hypothesis tested and qualitative findings attest that instructional equipment are not very significance in skills development is a fallacy and thus gives an impression that technical training institutes in Kenya are highly theoretical hence another study will be required to ascertain the cause of these findings.

Addressing skills development issues established by the study

Literature reviewed opined that to address the skills gap in TTIs Distributed leadership style, transformational style and Center-Focused Development Management Skills are required. In addition to these, the study suggests a curriculum implementation model that harnesses all stakeholders in the TVET sector, one at a time, working systemically, enhancing inputs, through puts and out puts for quality skills development. In the model, skills development supervision, system thinking and effective decision making are enhanced. The model will enable the government to harness the available training equipment in specified technical institutes than spreading them in TTIs of which some have few or no students to reduce wastage of resources. In this model, students will be required to enroll for practical learning first for two years, attend a

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three-month industrial internship program and finally enroll for an leadership course in which quantitative and communication leadership knowledge and skills are taught to help the student thrive in the industry. The model is suitable for the third and second world economies. Therefore, the suggested a conceptual model that is hoped to end the problem of skills gap in Kenya.



Source: *The Researcher 2022*

Figure 1: Suggested conceptual framework for addressing skills gap issues in Kenya

Conclusion

Technical education is an expensive venture when instructional equipment are considered. Despite this, the study has established that instructional equipment influence skills development and thus an inevitable variable in the process of skills development. Therefore, stakeholders need to synergize in order to curb the undesirable exhibited behaviors that exist between training institutions and industries in order to achieve set goals of skills training in Kenya. Nevertheless, the technical education system needs to be strengthened to accommodate its components and subsystems for the achievement its objectives and goals.

Recommendations for practice

Firstly, Technical Institutions should offer specialized courses in technical domains and should not be allowed to replicate courses offered by universities. Secondly, the institutions need to be audited regularly. Thirdly, Clothing Technology studies need to be conducted in a well-equipped institution attached to a textile plant. There is need to invest in research and allow lecturers to venture in order to end issues of skills gap.

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Recommendations for further study

The study recommends an investigation on the capacity of technical institutions in Kenya in offering the recommended diversified curriculum in the psychomotor domain of technical education

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