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Planning and Managing Technical and Vocational Education in Polytechnics: Priorities in Training Trends and Prospects

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ABSTRACT :*The desire to plan and manage vocational education adequately as an investment for economic and human resource is reinforced by studies in the field of educational economics such as UNESCO and UNICEF through advocacy for 'Equitable, Quality Education and Lifelong Learning for All' as the main goal for education. In third world countries, large numbers of graduates from formal schools are unemployed. Therefore, the purpose of this study was to gather information about planning and managing technical and vocational education in polytechnics with priorities in training trends and prospects. The objectives of the study were to: find out instructors' perceptions about instructional methodologies employed by youth polytechnic instructors; examine trainees' and instructors' views about training tools, equipment and materials at their disposal as the necessary implements towards acquisition of vocational skills and knowledge. The study adopted survey research design. The study population was 1880. Census and purposive sampling were used to draw a sample of 31.06% informants. The study employed questionnaires, interview schedules and checklists for collect data. Data were presented in percentages, pie charts, frequencies, bar graphs and ratios. A major finding was that agriculture trade was offered as common a course to first years only. Community's negative attitude towards vocational training discouraged youths from enrolling at YPs. 72.8% respondents observed that YPs were poorly enrolled. 79.9% trainees reported instructors demonstrated skills while trainees explained them. Some trainees shared tools during practicals. 93.1% instructors were ICT illiterate. Few YPs had automated tools/equipment and trade workshops were poorly equipped. The study concluded that YPs were in dire need of instructors, adequate training tools/equipment, materials and workshops. The study recommended that County Government building a YP in every location and craft comprehensive policies on financing/staffing of YPs.*
Keywords :*Vocation, training, planning, management and instructions*

I. INTRODUCTION

Within the United Nations-facilitated *global conversation* on post-2015, the thematic consultations on education was co-led by UNESCO and UNICEF. This involved a series of consultations at regional and global level as well as with civil society and thematic online discussions. The Consortium agreed on "*Equitable, Quality Education and Lifelong Learning for All*" as the main goal for education. It also recommended developing specific goals, indicators and targets within priority areas such as in vocational education (UNESCO and UNICEF, 2013). Thus, the pillar framework of the post-2015 development agenda is likely to be defined by one set of global goals to minimize poverty in the context of sustainable development. As regards education, it should be noted that its importance in development has been recognized in various reports. In this connection UNESCO continues to note that the third millennium goal, associated with skills, has proven difficult to monitor given ambiguity of its meaning. By 2011, 69 million adolescents were out of school, which is a 31% reduction since 1999. This suggests that there are still large numbers not even attaining foundation skills in literacy and numeracy. Growing youth unemployment in many countries has led to increased interests to urgently expand opportunities for vocational skills development that are relevant to the world of work.

The paper on Poverty Eradication Strategy (RoK, 2004B) and Economic Recovery Strategy for Wealth and Employment Creation (RoK, 2003) are among conference reports that have put emphasis on the importance of planning and managing vocational education as an investment for economic and human resource development. The UNESCO conference of 2004 held in Bonn Germany reinforced the need to invest in VET (Makatiani, 2008). The conference asserted that "since education is considered the key to effective development strategies, technical and vocational education and training therefore (TVET) must be the master key that can alleviate poverty, promote peace, conserve the environment, improve the quality of life for all and help achieve some sustainable development" (African Union, 2007: 16).

Improving the quality of training across the range of providers is a government priority. Therefore, public training policies and interventions can be justified on either efficiency or on equity grounds. In this regard, Gleeson & Keep, (2004) said that the structure of funding, planning and control of vocational education and training in the UK has considerable employer influence. For instance, Local Learning and Skills Councils (LSC) are expected to engage with employers and employer representatives, such as local Chambers of Commerce. Thus, employers have also been given 40 per cent of the seats on the boards of LSCs, making employers the largest interest group with the highest representation. LSCs are also tasked with trying to match the output of the education system, with an aim to be an 'information-clearing organisation', where changes in employer demand for skills are identified and communicated to the supply side (colleges and training providers), who then arrange provision to meet these demand.

Jacinto, (2002a) observes that many strategies are being employed in Latin-American countries to retain students in technical training institutions and bring them alternative opportunities that would give them vocational training which would improve their employment opportunities. Frequently these initiatives are linked with vocational training and/or social programmes to facilitate or improve the transition to the world of work. Such practices have been enforced in many Latin American countries such as Brazil, Argentina and Peru. Similarly, in most countries in Africa, large numbers of graduates coming out of the formal school system are unemployed, although opportunities for skilled workers do exist in the economy. For example, urban youth unemployment rates in 2012 in Sierra Leone were highest at 60% followed by Mauritius 59.9%, Swaziland 50%, Republic of Congo 42% and Rwanda 42% (Araya, 2012:3).

This situation has brought into sharp focus the mismatch between training and labour market skill demands. Critics argue that the lack of inputs from prospective employers into curriculum design and training delivery are partly responsible for the mismatch. Another reason that is often cited for the incidence of high unemployment among graduates is the absence of entrepreneurial training in the school. Therefore, understanding the economic context in which VET is delivered is therefore critical to the development of effective training policies and programmes, (Middleton, Ziderman and Adams 1993). Thus three critical dimensions of focusing on improving productivity, availability of jobs, and producing workers with the needed skills of acceptable quality are found to make VET cost-effective.

A look at selected countries by Nyerere (2009:6); (Ethiopia, Ghana, Kenya, Rwanda, South Africa, Tanzania, Uganda, India, China and Vietnam) that examines 'what room there is for skills development in post-primary education' asserts that across the countries covered, TVET occurs in many different environments, both formal and informal, in institutions (schools or vocational centres and colleges), on-the job (informal apprenticeships in Ghana) or both (for example, learnerships in South Africa). Of the ten countries examined, Rwanda has the highest enrolment in TVET at the secondary level (35%), followed by Tanzania (13%) and South Africa (5.8%). The study notes that Sub-Saharan Africa (6.1%) and South and West Asia (1.2%) have little room for TVET at the post-primary school level (Nyerere, 2009). Given the above data, it is a matter of concern that Africa lags behind the rest of the world in technology and still it continues to pay little attention to technical education and technological research. In Kenya for instance, there have been deliberate efforts to structure and deliver formal TVET education through establishment of TVET institutions either by the government or the private sector. However, Non-formal TVET sector, just like the informal sector, has been neglected by the government particularly in relation to the organisation of systems and structures. The Government has policies for the sector but they are not implemented, enabling the private sector to exploit it for cheap labour. The sector has been generally left to civil societies, religious and individuals organisations to intervene, which is done at programme levels hence few target groups reached.

II. Statement of the problem

Therefore, this paper examines planning and management of technical and vocational education and training implementation at YPs as per government VET training policy carried at polytechnics. The key implementers are instructors through instructional equipment, workshops, tools and materials such as singers, planes, hammers, saws, plumb lines, training manuals and consumable materials among others in the trades of tailoring, masonry and carpentry/joinery in preparation for skills acquisition by trainees. This was against a background of fast changing technology in TVET and how YP institutions are coping with it. These are used by YP instructors and trainees in meeting instructional requirements for adequate vocational skills and knowledge acquisition examined at National Vocational Certificate in Education and Training (NVCET) examination.

Objectives

This paper was guided by following specific objectives:

1. To find out instructors' perceptions about instructional methodologies employed by youth polytechnic instructors in giving instructions.
2. To examine trainees' views about training tools, equipment and materials at their disposal as the necessary implements towards acquisition of vocational skills and knowledge.
3. To assess instructors' perceptions about usage of training tools, equipment and materials at their disposal during training.

Questions

The paper sought answers to the following questions

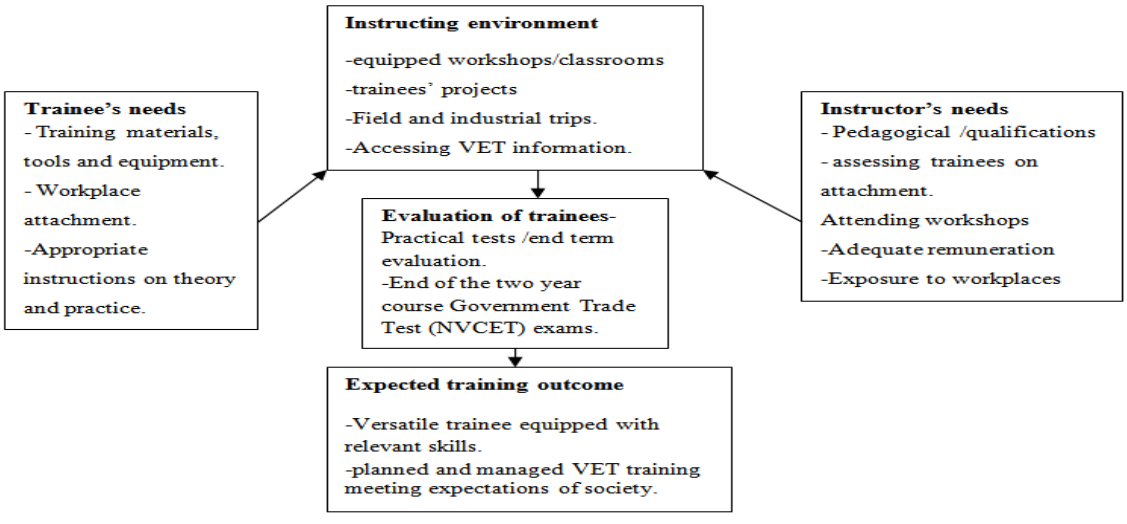
1. What are the perceptions of instructors about instructional methodologies used by youth polytechnic instructors in giving instructions?
2. What are views of trainees about training equipment, tools and materials at their disposal as the necessary implements towards acquisition of vocational skills and knowledge?
3. What are perceptions of instructors' about usage of training tools, equipment and materials at their disposal during training?

Theoretical Framework

This study adopted functionalist theory on education and division of labour advanced by Emile Durkheim in 1892. In his theory, Durkheim argued that *education teaches individuals specific skills necessary for their future occupations* (Holborn & Haralambos, 2004:692). Durkheim asserts that, every society sets itself a certain 'human ideal', an ideal of what a person should be from the intellectual, physical and moral points of view; this ideal is the crux of education. Therefore this theory articulates the very ideals that must be planned, managed and put in place in order to see full acquisition of particular VET skills. These specific aspects include how well adequate training materials, functional workshops, classrooms and conducive learning environment are planned, managed and used by VET instructional implementers in the classroom; who are the qualified instructors.

Conceptual Framework

The ultimate criterion for judging a teaching institution engaged in imparting training is the improvement in planning and managing in education of the millions of learners by imparting accurate knowledge and specific skills that generate goods and services that meet the expectations of a society. The conceptual framework in Figure 1.1is a teaching and training skills model capturing the requirements for planning and managing technical/vocational education and training requirement by MoYAS in the trades of carpentry/joinery, masonry and tailoring. The diagrammatic model conceptualises four independent variables.



Source: Modified from Passi and Sansanwal (2008:2).

Figure 1.1: Skills and training acquisition model

First are trainees needs in the process of training that when fulfilled leads partially to acquisition of VET skills and knowledge. These include adequate training materials, tools and equipment; workplace attachment, syllabus coverage and undertaking examinations. Secondly, instructors' needs are pedagogical skills and trade content qualifications, adequate remuneration, upgrading of instructional methodologies and right training tools and equipment in trades of tailoring, masonry and carpentry/joinery. The arrows point to the interaction of these two variables in the instructing environment as the third independent variable. The instructing environment determines the planning and managing of skills training outcome as instructors' needs and trainees needs come into play.
Fourthly the model provides evaluation of trainees as dependent variable where trainees are test both in theory and practice.

III. REVIEW OF RELATED LITERATURE

Training of Vocational Education Instructors

In October 2004, at the UNESCO International Experts Meeting Learning for Work, Citizenship and Responsibility held in Bonn, Germany, it was declared that "Skills development leading to age-appropriate TVET should be integral to education at all levels, and can no longer be regarded as optional or marginal. This was meant to mold the kind of individual who possesses the knowledge, skills and attitudes necessary for active participation in life and underscored the role of education in enriching human experience" (Gloria and Efajemue, 2011:45). These scholars assert that the role of an instructor is essential to all aspects of economic development as the end implementer of educational curriculum. According to Gloria and Efajemue, (2011:47-48) in a survey entitled "Problems of Vocational Instructor Education in Rivers State of Nigeria" found out that TVET is currently an important educational necessity to propel technological aptitudes and inventions. The study argues that a well thought out programme without proper planning to achieve desired outcomes is a waste of time and economic resources. Thus, 80% respondents agreed that the problems of lack of participatory framework, poor planning and lack of capacity building were some of the threats to quality vocational instructor education. Besides, neglect of TVET instructor education impacted negatively on instructional implementation within vocational training institutions and contributed to poor performance by trainees.

This formed a literature gap whether these problems existed among VET instructors but did not explore on possible remedies to some of these problems. Besides, the researcher used only a questionnaire as a research instrument under survey research design to seek information from respondents. This posed a serious gap in literature that the current study fulfilled using survey design under explanatory approach where two sets of sampled YPs that were government supported and privately managed were studied. However, survey design under explanatory approach would bring out good practices by detailing pertinent issues affecting adequate planning and managing instructional delivery.

Workplace Attachments

A study of "Technical Vocational Instructor/Instructor Training (TVITT) Challenges" carried out in Trinidad and Tobago by (Corbin and John, 2011:4) found out that lowest VET instructor candidates received Technical Vocational Instructor/Instructor Training Diplomas. Besides, instructor training programmes allowed the candidates one day a week to attend classes on part-time bases in the nearby industries. The researcher observes that strategy for the development of VET in the Republic of Trinidad and Tobago, since 2008, has been the sole responsibility of the Metal Industries Company (MIC), Technical Vocational Instructor Training and Development Unit (TVITTDU). This type of training enjoyed industry-stakeholder partnerships model where the training institution delivered the TVITT programme with full autonomy. The study underscored the fact that that it was the responsibility of MIC's TVITTDU to adequately develop the instructors pedagogical and andragogical cognitive delivery skills as well as provide the training that would help the instructors implement the new VET curricula. This left a large literature gap in instructor training geared towards collaboration with industry which this study fulfilled among studied YP instructors. It should be appreciated that Corbin and John used a case study to examining a single instructor training institution; however the current study sought ways instructors trained for both trade content and pedagogical knowledge among selected YPs under survey research using explanatory approach.

One of the greatest handicaps in the improvement of vocational and technical education is human resource planning that has led to the acute shortage of qualified instructors. Kennedy, (2012) observed that there is a noticeable lack of instructor preparation, in-service programmes and also difficulty in recruiting well educated instructors with skills and competence in vocational and technical education. A study by Kennedy, (2012:51) entitled "Resource

Management and Planning in Vocational and Technical Education for National Development" in Nigeria observes that employees are resources that should be effectively managed if an organisation is to be successful. Workers use their talent to creatively combine and utilise the equipment, machine tools and other non-human resources. ILO, (2015) says without competent people to manage the non-resources, the organisation will either pursue inappropriate goals or find it difficult to achieve appropriate goals once they have been set. Thus, an organisation has to plan for its human resources needs for now and the future.

Training Methodologies Employed by Instructors

Kennedy (2012) sought the opinion of respondents on qualities of management of TVET institutions in Nigeria and found out that management and implementation problems of training were in dire need to be improved. The study noted strongly that the skills and the knowledge of the teaching staff in vocational schools needed to be improved. In general a stronger awareness must be created both for the development of human resources and a more efficient management of VET so that scarce resources can be better utilised. Thus ILO, (2015) stressed the need for increased promotion of vocational qualification measures of planning as a prerequisite for better information campaign at institutions of primary education. Furthermore, systematic information on concrete training schemes could be disseminated enabling the young pupils to gain some initial vocational orientation.

Moreover, Kennedy (2012) continue to claim that vocational training institutions should be interested in improving the efficiency and relevance of their activities that should be reflected in their adoption of management mechanisms aimed at ensuring quality. Such measures include modernisation processes such as personnel training, identification of critical factors, spelling out of a mission and vision entailing the qualitative upgrading of the institution.

Moreover, studies by Kennedy (2012) document that some of VET institutions in the Caribbean and Latin America take part in national mechanisms of evaluation and quality control for their centres and other operational units. They likewise participate in other evaluation systems.

In this connection, ILO (2015) notes that in the last ten years the roles and responsibilities of teachers and trainers in TVET have changed considerably in a wide range of countries, becoming multi-functional and combining many professional elements with those of active stakeholders in TVET design and reform as supported by (CEDEFOP, 2009; OECD-CERI, 2009a; Grootings and Nielsen, 2005;). The changes have challenged teacher training programmes to adapt to change via new policies and structures so as to prepare trainers for their new and constantly evolving roles. Besides, Greater reliance on sound labour market information and analysis on both demand and supply through closer cooperation between governments and between institutions, sectoral social partners and labour market stakeholders to identify skills gaps and matching, especially at the sectoral level; with career guidance and vocational counseling as an important element of such a strategy (ILO 2010c, ILO, 2015).

TVET Training environment

Within the TVET learning environment, various factors influence participation levels and gender is one to which trainers need to be particularly attentive. Gender-awareness training should highlight potential inequalities in participation and strategies to address them (ILO, 2015). It is widely known that women in certain parts of the world face daily challenges due to gender norms in society. These norms are rooted in culture, religion, and family structure and affect the way women are able to participate in their economy and public sphere (Markle, 2013). Therefore, balancing dominant voices within the classroom and allowing space for all learners to engage and provide feedback often requires skilled intervention on the part of an instructor. This could be possible by ensuring proper gender sensitivity training by both male and female teachers. This approach will motivate/encourage women to express TVET and build self-confidence.

ILO, (2015) observes that while there are a wealth of entities dedicated to teacher training and coordination, there are few networks at the regional level to facilitate interaction and knowledge-sharing among practitioners themselves. As the success of an established network such as CINTERFOR in Latin America and a newer network such as TVET Portal in the Arab States illustrates, there is on-going interest in regional knowledge-sharing among practitioners. These networks could provide useful examples for replication in other regions, particularly Africa and Asia-Pacific, which gave impetus to this study.

An e-Forum survey conducted in 2010 by UNESCO-UNEVOC (2011) evaluated the impact and value of the network among users. Respondents came from a variety of disciplines including practitioners, researchers, policy-makers, development workers, and students. Over 85% answered that the e-Forum is relevant or very relevant to their work. Responding to how they have used the information from the e-Forum, 65 per cent said that they have

applied the information to a training project or programme, 29 per cent said that they have cooperated with someone they got to know via the e-Forum, and 26 per cent said other, citing uses such as benchmark assessments, research, awareness about current debates and innovations in TVET, and comparison of country and regional practices (UNESCO-UNEVOC, 2011). This begs the question whether TVET instructors and trainees are ICT literate and interact with such forums.

IV. METHODOLOGY

Research Design and Locale

This study adopted survey research design using explanatory approach which lies within qualitative research methods paradigm in establishing instructional needs that influenced relevance of vocational training among sampled YPs in counties of Isiolo, Meru, Embu and Machakos in Kenya. These sub counties had residents experiencing different economic backgrounds that were likely to influence planning and management of vocational training patterns in YPs. This study design enabled gathering information about planning and managing vocational training conditions and documented attitudes of instructors, trainees and BOM towards vocational training as a career.

Study Population

The study target population comprised the following informant resource persons: YP managers (50), instructors (156), second year trainees (1024) trainees and board of management (BOM) (650). Each of these had different roles in fulfilling planning and management of vocational training in YPs. They provided most of the insightful, analytical and specialised information from which the study based its findings, recommendations and conclusions. Thus, the specifications of the YP institutions were 36 and 14 government sponsored and private owned respectively whose population of trainees was 1826 distributed as 802 (387 females and 415 males) and 1024 (448 females and 576 males) first and second years respectively (MoYAS, 2012). Therefore, total population was 1880 target respondents.

Youth polytechnics (YPs) sampling procedures

From the regional office of director of youth training headquarters in Embu, the researcher obtained a list of all registered public and private YPs in the sub counties of Isiolo, Meru Central, Mbeere and Machakos with their enrollments arranged in descending order. Consequently, purposive sampling was used in selecting 2 public YPs and a private YP from a list of 50 registered YPs in these sub counties. In total 8 public and 4 private YPs totaling to 12 YPs were sampled for the study.

Sampling of Informants

First, the researcher employed census technique in picking second YP trainees in the trades of masonry, carpentry/joinery and tailoring to participate in the study. This is because second year trainees enrollment were poor and some course registered few trainees (MoYAS, 2012). In total 384 trainees participated in the study. Secondly, Managers of sampled 12 YPs were automatically included in the study because they doubled as instructors and were in charge of day-to-day running of the institutions. Hence, 12 managers of the sampled YPs were selected for the study. Thirdly, from a target population of 156 instructors a total of 48 instructors were purposively sampled for the study. However, care was taken to include departmental heads of trades in the study through purposive sampling. Finally, The BOM members were selected purposively in order to include as many as possible in the study. Therefore 12 BOM members from 12 YPs totaling to 144 were purposively sampled to participate in the study. The total sample comprised of 588 respondents as shown in sampling matrix in table 3.1.

Table 3.1: Sampling matrix of study informants

Informants	Population	Sample size	Sample percentage
Second year trainees	1024	384	37.5
Instructors	156	48	30.7
Board of Management	650	144	22.1
YP managers	50	12	24.0
Total	**1880**	**588**	**31.2**

Research Tools

Interview Schedule for YP Managers and Instructors

The first in-depth interview schedule was administered to YP managers and instructors instructing second year trainees in the trades of masonry, tailoring and carpentry/joinery who were the key informants to these instruments. The YP instructor's and manager's interview schedule addressed trainees training needs that occurred within the YP on day-to-day basis. The subject matter of discussion centred on the following aspects: teaching and training processes, adequacy of training facilities and tools in preparing trainees for skills acquisition.

Youth Polytechnics' Second year Trainees Questionnaire

According to Robson, (2002) questionnaires work best with standardised questions that one can be confident will be interpreted the same way by all respondents. The instrument ascertained from trainees the availability and unavailability of requisite training tools, consumable materials, and challenges they encountered during practice and theory lessons.

Checklists for Tools, Training Manuals, Equipment, and Workshops

These are direct observations that consisted of listed items present that were relevant to vocational training and acquisition of a particular vocational skill. These items included YP institutional physical conditions such as status of existing buildings, classrooms and workshops learning environment. The availability of training and teaching facilities (desks, tables, seats, and blackboards, training manuals and inventory records) were ascertained.

BOM Interview Schedule

The researcher organised interview schedule for BOM members in each trade of masonry, carpentry/joinery and tailoring. This was found useful because each trade had unique training specifications and materials due to sensitivity of skills and competences required of trainees. These discussions clarified information that was not clarified on funding and assistance given YP. FGD were used by the researcher to test discussants' reactions to particular policies and vocational training needs practices inherent at YPs.

V. PRESENTATION OF FINDINGS, INTERPRETATION AND DISCUSSION

Trainees' Views why they trained in specific trades

a) Masonry

The researcher sought from trainee informants' reasons why they selected and trained in masonry. Some 76.8% trainees opined that construction opportunities were readily available and 71% perceived masonry as requiring few resources to start a business. Some respondents explained that house construction works were in demand in both rural and urban areas, therefore there were almost ready jobs awaiting them after completion of training. These opinions suggest some trainees had confidence in their training and hoped to settle down to business after completion of their training. Besides, 37.6% trainees were influenced by their parents to train in masonry. Thus, parents influenced career choices of their children because they paid for their education and wanted them pursue courses that had higher chances of gainful or self-employment. Moreover, some trainees explained they trained in masonry because:

> *Masonry tools are cheaply available in the market. Some of the equipment like mortar mixers and vibrators are hired by owners of construction projects; while others are substituted for cheaper ones such as using water in transparent flexible horse pipe to achieve floor level (masonry trainees' responses written in a questionnaire, March 2014).*

In this regard studies by Ngumbao (2012) in YPs at Mombasa County concur with current findings in that majority 49.9%, 20.3% and 44.4% trainees said they enrolled at YP due to parental influence, role model and to get better employment opportunities respectively.

b) Tailoring

Trainees in tailoring trade gave their responses why they pursued tailoring career. Some 91.8% trainees opined tailoring had better opportunities in the clothing industry because people like fashionable clothes, therefore this presented them with opportunities to make clothes to customers. Some 88.4% and 32.6% informants said they joined the trades because it is an in house vocation in markets centres and homes; and were motivated by role model tailors

working in tailoring shops respectively. Some 34.6% and 32.6% informants said they trained in tailoring because they were persuaded by their parents and took tailoring as a second choice after failing to secure a place in secondary school. These opinions show that some trainees were still influenced by their kin and the society's culture towards choosing a vocational trade while others were influenced by role models in their society today. These sentiments explain what motivated some tailoring trainees into joining tailoring career. However, on the question about competition trainees were likely to face in their tailoring career by infiltration of clothing market by old imported cloths (*mitumba)*, some of the trainees pointed out that:

The cloth markets are dynamic and there is a place for new cloths. For example, weddings, schools and special parties require participants wear new cloths and uniforms; such groups and individual persons would be potential customers (tailoring trainees' responses written in questionnaires, March 2014).

In supporting these findings Bello *et al*. (2007) in Nigeria found that youths 18.75% chose computer maintenance and operation works followed by tailoring 9.38% among other trades in decreasing order. Such career choices were attributed to the then prevailing economic conditions, parental guidance and role models among others.

c) Carpentry/Joinery

Majority 67.6% informants said they joined the trade because of many construction opportunities available in their locality. They explained that there was a lot of repair and other works to do like furniture, doors, roofing of houses, and painting in institutions like schools, peoples' homes and market centres. On the other hand, 54.4% of informants felt one could set up a furniture workshop at home at a relatively cheap costs; hence minimising expenses for renting a house to operate in. Moreover, a girl respondent in carpentry/joinery at a public YP in Mbeere Sub County wrote the following sentiments on why she joined the trade:

"I was attracted to do carpentry by opportunities available in schools and hospitals among others. Although carpentry is associated with men, these days women can do what men can do'' (girl trainee's written response, March, 2014).

These sentiments were a clear indication that the trainee was motivated into joining the trade because of carpentry opportunities available in her community. On the question about competition they were likely to face in carpentry/joinery career from industry readymade plastic furniture, some of the informants said:

Presence of plastic furniture sold cheaply in the market is a challenge to carpenters to produce cheap, durable and quality furniture. Therefore, some buyers require durable wooden furniture such as school desks, Tables, beds among others which are expensive to make but attract good profit (carpentry/joinery trainees' written responses, March 2014).

Thus carpenters could produce durable wooden furniture to ready buyers like schools and people's homes.

Trainees Perceptions about Overall Status of their Youth Polytechnics

For purpose of understanding status of sampled YPs, trainee's written responses in a questionnaire about rating of the overall status of their YPs were analysed and presented in Figure 4.1.

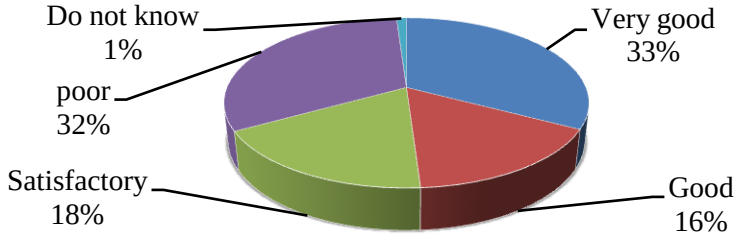


Figure 4.1: Trainees perceptions about overall status of their youth polytechnics

Source: Data obtained from trainees during field inquiry,

The statistics show that one third, and 16.0% respondents rated overall status of their YPs as very good and good respectively. This rating was attributed to adequate availability of training facilities, tools, and instructors that made training both in theory and practice favourable in some YPs. Some 18.0% and 32.0% informants rated their YPs as satisfactory and poor respectively.

Instructors Views Why YPs Enrollments Remained Low

During formal interviews with the researcher at Vyulya YP on why YPs' recruitment had remained low, one instructor lamented that:

> *Day secondary schools are admitting standard eight KCPE leavers with as low as 80 out of 500 marks. Secondly, the local people's negative attitude about vocational training has discouraged youths from enrolling at YPs (personal communication with instructor, March 2014).*

Besides, majority instructors during formal interviews with the researcher observed that even poor parents who used to send their children to YPs no longer do so but take them to a nearby day secondary school. This is because of economic returns associated with academic education.

Further, during interviews with instructors at Kyemutheke YP, the researcher sought their opinions on why their institutions registered poor trainee enrolments. One informant argued that:

> *Local people hate educating their children here. They say its waste of resources. Some say 'so' and 'so' is a carpenter and has never been to anybody's school. Opinion leaders and politicians tell public gatherings those passing well at class eight and form 4 will be sponsored through Constituency Development Fund (CDF) and failures belong to YPs (personal communication with instructor, March, 2014).*

These sentiments allude that even community leaders look down upon YPs rather than explaining their usefulness in the community's economic development agendas. Such pronouncements discourage parents and potential trainees from enrolling into YP training. In supporting these findings, Ngumbao (2012) observed that most of the respondents, 63.3% in Mombasa County preferred secondary school education over vocational training.

Trade Lessons

What are the perceptions of trainees about instructional methodologies used by youth polytechnic instructors in giving instructions?

Theory lessons

The analysis on commonly used method by instructors in giving theory instructions in Table 4.1 shows that 79.9% trainee said while instructors employed demonstration method, trainees later explained how those skills worked.

Table 4.1: Trainees opinions on methods used in giving theory instructions

Instructional Methods	Learning activities	Frequency	Percentage
Demonstrating a skill	Explaining a skill	227	79.9
Individual project work	Doing a project	210	73.9
Question and answer method	Note taking and answering questions	205	72.1
Drawing	drawing relevant tools/equipment	182	64.0
Group activities	Solving geometry/arithmetic problems,	166	58.4
Field trips	Recording: uses of a machine; observing stages of producing a product.	123	43.3
Photographs and pictures	Interpreting photographs and pictures	118	41.5

N = 284 **Source:** Data obtained from trainees during field inquiry, 2014.

However, few respondents said they had some difficulties explaining some vocational skill concepts. For example, a trainee at Iriamurai YP wrote the following sentiments:

Although my instructor demonstrates a particular trade's skill like measuring round edges and cutting it smoothly, I have some difficulties to explain the same later unless with repeated trials (*written response by carpentry/joinery trainee, March 2014*).

Thus, some trainees had some difficulties explaining how some specific vocational skills work. This was related to inadequate practice a trainee engaged in during and after lessons.

Practical lessons

Trainees responses about instructing of trade practical lessons in Figure 4.2 show that 98.9% and 81.6% informants sat end of term practical exam to make a defined model and did a project within the term respectively. These activities entailed trainees getting written instructions to make, say, in carpentry/joinery a wooden cabinet with a fine finish by applying clear vanish.

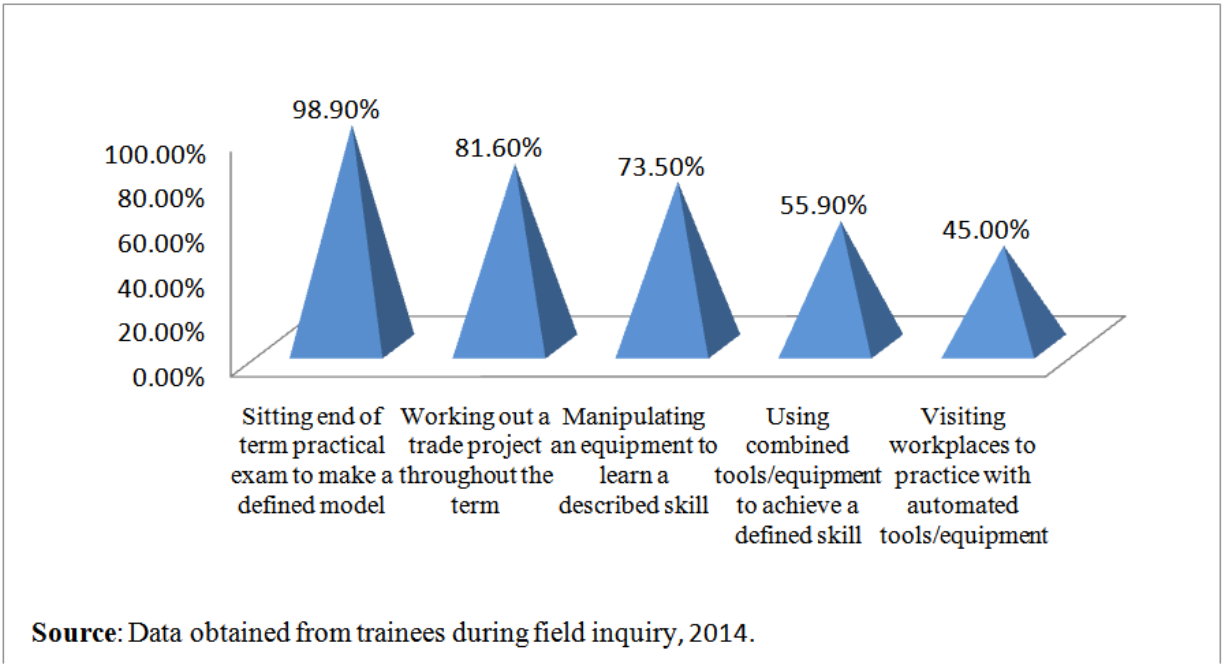


Figure 4.2: Trainees' views on implementation of trade practical instructions

Specifically, desks, stools, pointing moldings on stone walls, and coffee tables were check listed in majority of sampled YPs. For example the desk at Kyemutheke YP had loose joints due to failure to apply wood adhesive or inadequate utilisation of fastening clump when jointing. This results to a weak joint. Similarly, in tailoring and masonry trades, trainees were given similar assignments to practice specific skills. Some, 73.5% and 45% respondents said that they manipulated an equipment to learn a described skill/s and visited workplaces to practice with automated tools/equipment respectively. For example, in tailoring trade trainees made items such as table cloths and aprons. However, some of the button holes needed more hemming and resizing to allow good fitting of buttons. In this connection, Faraday (2011) argues that effective teaching involves employing appropriate teaching: skills, relationships, reflection and models. It is only when these four elements are in synergy that they are able to support effective teaching which lacked in most YPs.

Youth Polytechnics' Workshops and other Physical Facilities

What are the perceptions of youth polytechnics' instructors and trainees about training equipment, tools and materials at their disposal as the necessary implements towards acquisition of vocational skills and knowledge?

The findings showed that 7 YPs (Nazareth, Gitugu, Kaanani and Kyemutheke; Siakago, Iriamurai and Uhuru) had a semi-permanent/permanent structure with second year student/workshop ratios of 23:1, 18:1, 13:1 and 17:1, 14:1, 17:1 and 6:1 respectively. This meant one room was used as workshop for 2 or 3 trades, making instructional practice to be conducted in shifts. Thus, only Don Bosco YP met the required ratio of 20 trainees per workshop in the 3 trades. However, Don Bosco, Nkubu, Vyulya and St. Josephs YPs had 5, 3, 3, and 3 permanent workshops with second year student/workshop ratios of 49:3, 30:2, 46:2 and 45:2 respectively. Moreover, at Kyemutheke, Iriamurai, Siakago and Gitugu YPs masonry practicals were conducted outside in the open due to lack of a workshop. The 3 workshops at Don Bosco YP were rated good because they measured approximately 75ft by 30ft square and standard benches fitted with cabinets, cemented floors, plastered and painted walls. They had corrugated iron sheet roofs, metallic door and windows fitted with panes and opened from outside. Workshops had 21 stools and first aid kits/fire extinguishers were fixed at accessible points on the wall.

However, some instructors explained that masonry trade housed few tools that could be kept in a store while trainees do practicals outside. They attributed this to preferences given workshops for trades like carpentry and tailoring because of the many delicate tools they house. Thus, most sampled YPs were in dire need of workshop space so as to provide opportunity for adequate vocational training. More workshops could avert the challenges of postponing classes. On the other hand, some instructors lamented that they prepared their lessons at home. On the whole, one instructor gave the following sentiments:

> *We do not have instructors' preparation room. I prepare my work in my house. It is worse when preparing for examinations which are sensitive documents (personal communication with an instructor-Gitugu YP, March, 2014).*

This was perceived as source of not motivating instructors.

Instructors views on instructional implementation and information communication technology (ICT)

The researcher, during formal interviews with instructors, sought their views whether they engaged ICT as a teaching component or not. Some instructors confessed having some knowledge in MS ward but they did not 16tilize ICT in giving instructions due to lack of ICT facilities. During interviews with instructors at Vyulya YP, one informant had the following observations:

> *Although the YP offers ICT courses to outsiders for income generating project, none of the computers is availed to instructors for use in teaching (personal communication with instructor at Vyulya YP, March, 2014).*

In this regard, NITA (2011) tailoring and NITA (2013) Carpentry/Joinery and masonry assessment guidelines document analysis; it was evident that the syllabus was silent about issues of ICT. Moreover, 93.1% and 90.9% instructors reported that they were ICT illiterate and YPs lacked computer facilities respectively. Thus, only 6.8% of sampled instructors had some knowledge about ICT but could not utilise it due to unavailability of computers. However, when asked to explain the status of employing ICT in giving instructions, Vyulya YP manager during formal interviews with the researcher observed that:

> *Our trainees were taught basic computer packages during first year. Such knowledge is not tested in trade areas. The ICT instructor was a BOM employee. The rest of instructors are not ICT literate. Only 3 computers were used by trainees (personal conversation with manager March, 2014).*

Thus, in contrary to these findings Buntat, et.al (2010) argues that changes occur in technology in helping instructors deliver instructions to students. These changes are important to VET programmes in supporting workforce development.

Challenges facing instructors during instructional delivery

The informants' responses about constraints they faced while teaching theory and practical lessons showed that some 47.7% and 40.9% respondents observed that teaching without enough training tool/equipment and trainees' having English language difficulties in understanding vocational concepts respectively posed some challenges in skills acquisition. These difficulties forced instructors to use '*Kiswahili'* language to explain some skills for trainees to understand. Moreover, 31.8% instructors lamented that old and inadequate training manuals in trade content were some of the hindrances to adequate instructional delivery. In supporting these observations, an instructor at Nkubu YP, during interviews with the researcher, lamented that:

> *An instructor uses simplest languages including 'Kiswahili' to assist a trainee understand a concept. Some trainees are poor in solving arithmetic and geometry statement problems (personal communication with Instructor March, 2014).*

Such challenges call for extra tutelage of a trainee to ensure they understand concepts taught. Thus, trainees could be taught arithmetic, geometry and English language as special lessons during first year. However, trainees were honest to acknowledge their weaknesses in English and numeracy skills. In this connection NCVER (2006) acknowledges diverse needs of VET practitioners and recommended that a range of products be developed, covering such topical areas as: language and literacy; catering for individual learner differences; teaching skills; supporting generic skills development; and design and modification of resources among others. This is perceived to minimise English language difficulty among trainees.

VI. SUMMARY

This study was about planning and managing technical and vocational education at polytechnics: priorities in training trends and prospects. The study found out that none of the sampled YPs offered agriculture as a trade because YPs did not receive trainees requesting to train in agriculture. However, agriculture was taught to all trainees as a support subject. Besides, 76.8% of the trainees studied masonry trade because of readily available construction opportunities in the community. Finally, the study concluded that 91.8% trainees joined tailoring to

seize opportunities in the clothing industry since people like fashionable clothes despite the challenges posed by *(mitumba)* cloths prevalence in local markets.

On trainees' perceptions about overall status of their YPs, the study found out that almost an equal number of trainees (32.7% and 32%) rated their YPs very good and poor respectively. Some 47.7% instructors observed trainees' having English language difficulties in understanding vocational concepts posed some challenges while teaching. These difficulties forced instructors to use '*Kiswahili'* language to explain some vocational concepts and skills to trainees. The study concluded that sharing of tools by students disrupted smooth running of practice lessons and inhibited acquisition of skills by trainees. However, majority trainees had acquired right skills and proficiencies in their trades.

On the other hand, the study found out that majority, 93.1% sampled instructors were illiterate in ICT and all sampled YPs lacked computer facilities for use by trainees and instructors. However, despite the challenges encountered during instructional delivery at sampled YPs the study found out that trainees did fairly well at NITA examinations with a pass rate of 71.9%, 73.1%, and 78.9% in carpentry/joinery, masonry and tailoring during 2012 NITA exams respectively.

The key study findings were that most sampled YPs were in dire need of workshops, modern tools and equipment. The study found that 7 out of 11 sampled YPs had semi-permanent/permanent workshops with second year student/workshop ratios of 23:1, 18:1, 13:1 and 17:1, 14:1, 17:1 and 6:1. Finally, the study concluded that challenges in instructions call for extra tutelage of a trainee to ensure they understand concepts taught. Thus, trainees could be taught arithmetic, geometry and English language as special lessons during first year

VII. Conclusions

First, the study concluded that agriculture was not offered as a trade because YPs did not receive trainees requesting to train in it. The study concluded that trainees studied masonry, carpentry and tailoring to seize available job opportunities in their trades within and without their communities. The study concluded that while instructors employed demonstration method in giving theory instructions to trainees in class, trainees explained how those skills worked. However, few trainees faced some difficulties in explaining some vocational skill concepts besides practical difficulties. Such concepts are sawing along curved lines, dressing stones along curved lines and sewing flower patterns on garments. In effect instructors employed the use of *Kiswahili* to interpret difficult vocational concepts to trainees. Few YPs met the required student/tool ratios in very few areas. Moreover, there were important tools/equipment that some YPs could not afford to buy due to financial handicaps; for example, electric/threadle singers and various types of electric wooden machines. Few YPs employed automated tools especially wood machines in carpentry. The study concluded that none of the sampled YPs taught computer packages to her students.

Recommendations

First, the study established that majority of the public YPs were poorly staffed due to none existence of government policy on staffing of YPs in Kenya despite existence of similar policies for government supported VET institutions. For staffing equity to be achieved at YPs, the Kenya government should initiate a staffing policy framework that will see teachers' service commission take over instructor staffing issues at YPs. Secondly, the study findings showed that most sampled YPs in were poorly enrolled.

Although this factor was strongly linked to communities' negative perceptions and attitude about VET at YPs, enrolment issues go beyond community attitude. Thus, a government policy addressing YP admission criteria in consonant with other VET institutions would improve trainees' enrolment at YPs. Thirdly, the study concluded that none of YPs were training ICT. An ICT policy would streamline standardised VET training guidelines in line with technology in the market today.

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