

**INFLUENCE OF TVET CENTRES AND NON-CENTRES OF EXCELLENCE
ON STUDENTS' PERFORMANCE AT NATIONAL EXAMINATION IN
NAIROBI COUNTY, KENYA.**

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DECLARATION

This research project is my original work and has not been presented for any examination or award of any degree in any other University.

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DEDICATION

This research project is dedicated to my beloved husband James Gathogo, my sons:

Newton, Norman, Elly Dave and my mother- Rachael.

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LIST OF ABBREVIATIONS AND ACRONYMS

ADB	African Development Bank
CEDEFOP	Centre of Development of Vocational Training
CE-TEC	Centres of Excellence in Technical Education
CIRT	Centres for Innovation Research and Teaching
CoEs	Centres of Excellence
DTE	Directorate of Technical Education
ECOWAS	Economic Community of West Africa
FTE	Foundation for Technical Education
GOK	Government of Kenya
GSEC	General Secondary Education Certificate
HRD	Human Resource Development
ICT	Information Computer Technology
JICA	Japan International Cooperation Agency
KESSP	Kenya Education Sector Support Programme
KIITEC	Kilimanjaro International Institute for Telecommunication, Electronics and Computer
KTTC	Kenya Technical Teachers' Training College
MOE	Ministry of Education
MOEST	Ministry of Education Science and Technology
MoHEST	Ministry of Higher Education, Science and Technology
MSEs	Micro and Small Enterprises
MVTTC	Morogoro Vocational Teachers' Training College
NEBTE	National Business and Technology
Non-CoE	Non- Centres of Excellence

OECD	Organization of Economic Cooperation and Development
SPSS	Statistical Package for Social Sciences
SSACI	Swiss South Africa Co-operative Initiative
STEM	Science, Technology, Engineering and Mathematics
SWAP	Sector Wide Approach to Program Planning
TEC-VOC	Technical Vocational
TITT	Thika Institute of technical Training
TVET	Technical and Vocational Education and Training
TVETA	Technical and Vocational Education and Training Authority
UK	United Kingdom
UNESCO	United Nations Educational, Scientific and Cultural Organization
UNICEF	United Nation International child Fund
UTPRAS	Unified TVET Program Registration and Accreditation
VET	Vocational Education and Training

ABSTRACT

The purpose of the study was to investigate the influence of Technical and Vocational Education and Training centres and non-centres of excellence on students' performance at national examination in Nairobi County; Kenya, in the last three years. The study was guided by three research objectives; to establish the influence of facilities on students' performance at national examinations, to establish the influence of the competence of instructors on students' performance at national examinations and to establish the influence of students' entry characteristics on students' performance at national examinations. The related literature from different scholars revealed that there existed a significant relationship between students' entry characteristics, instructor competence and quality of facilities in learning institution that promoted performance of students in examination. The study used descriptive survey research design in gathering information, summarizing and interpreting it. The target population included three public TVET institutions in Nairobi County and two institutions from Kiambu for comparative purpose. Purposive sampling was used to sample the study respondents based on their distribution in Centres of Excellence and Non-centres of Excellence. The five principals in the institutions participated in the study. Also, fifteen instructors and thirty third year students who were considered to have adequate information required by the study equally distributed CoEs and non-CoEs respectively. The research instruments used were questionnaires. The data collected was analysed by use of descriptive statistics of percentages and frequencies. Data was presented using frequency table. From the study, it was established that facilities in TVET institution were available but not adequate, the instructors were competent as the majority held diploma and above in their areas of specialization but were limited in refresher courses and the entry requirement to most courses as directed by the Ministry of Education Science and technology was C- to most courses. The study concluded that the centres of excellence were fairly equipped with facilities and this facilitated the performance in the CoEs than in the non-CoEs. Also the study concluded that the instructors in the CoEs were competent enough as the 50 percent and above held diploma and in non CoEs other instructors did not show their qualifications. The study established that students were admitted to TVET diploma courses had C- and those to certificate courses had D+ as stipulated by MoEST. This also greatly influenced students' performance at national examination. The research recommended that the government improve the facilities in the non-CoEs and equip the laboratory, workshops and libraries to enhance students' performance. In addition, the instructors be encouraged to attend refresher courses to update and upgrade their knowledge and skills and as well the administrators of the institutions to strictly adhere to the stipulated entry requirement when admitting students to various courses. The study suggested that similar study be done to establish the role of TVET centres of excellence on human resource development besides students' performance.

CHAPTER ONE

INTRODUCTION

1.1. Background to the Study

According to UNESCO (1985), Technical and Vocational Education and Training [TVET] means the education and training process that involves acquisition of practical skills using formal and informal approaches in various occupations sectors. This additional education from basic education exposes learners to technological and scientific related skills to uplift their socio-economic status. Globally the foregrounding of TVET by different national and regional governments has been driven by the quest to stem youth employment, social exclusion and poverty (Quin Tan, 2012). In this regard, UNESCO has taken the role in leading international policy initiatives to popularize TVET programs particularly in developing countries where the interest in TVET has been wanting, (Peterson, son et-al 2008; Education analysis services' 2010; Shur, Winterbothem et al, 2010; Sifuna, 1986). This new prominence given to TVET must be matched with the policies and resources to ensure that TVET is driven to the benefit of all (UNESCO, 2010-2015).

A research done by Lati (2005) on factors influencing student performance in technical courses such as Mechanical and Automotive Engineering in Nairobi technical Training Institute and Christian Industrial Technical Institute, showed that a change of technical education held under 7-4-2-3 system to 8-4-4 system in 1982 placed a great challenge to Vocational and Technical training programs in the country. It led to low level of student performance in technical subjects in technical training institutes. In a research done by UNICEF (1999) the major challenges that faced public TEC-VOC institutions were inadequacies in lecture theatres, workshops and laboratories.

The government of Kenya being a member of UNESCO took measures to expand and strengthen TVET so as to achieve vision 2030 whose pillars were socio-economic, social and political development (GOK, 2007). TVET in Kenya was emphasised by various educational commissions and reports such as; Ndegwa Commission (1970); the Gachathi Commission (1976); reports by Kamunge of 1988 and Koech of 1999, yet the problem of youth unemployment, social exclusion and poverty was not resolved. According to Harry (2014) the implication was that the youth had limited income to sustain their livelihood and participate in social development. Furthermore, the situation attribute to scarcity of job availability, over population, low literacy levels, lack of basic technical skills, low access of proper information, uncomplimentary distribution of geographically available chances; and tribal considerations (Harry, 2014).

According to Nzimande (2014), centres of excellence (COEs) have quality resource for use in education. The programs implied concentrated, focussed on life-long commitment to encourage teaching and learning development in educational institutions, it challenged and assisted instructors on long term basis to become educators, scientists, innovators and leaders of the 21st century and beyond. COEs were a situation where there was interplay between teachers, students, support services and knowledge- based education.

According to Barkrishen (2014), technical centres of excellence are institutions where selected programs acquired highest level of accreditation under Unified TVET Program Registration and Accreditation [UTPRAS]. Bonginkosi, (2014) added that the department of higher education and trainings' highest priority was to strengthen and expand TVET public colleges in the selected programs so that they became institutions of choice for a large portion of school leaver. The main objective of these

centres was to improve access, quality, equity and relevance through management capacity in planning, financing and human resource management. It also entails student support services, strengthening governance, student accommodation, building partnerships with employers and other stakeholders, increasing the responsiveness of colleges to local labour market, improving placement of graduates in jobs, creating programs and qualification mix to meet the varied needs of students.

Non-centres of excellence are TVET institutions where selected programs in centres of excellence did not acquired high level of accreditation under UTPRAS. These programs did not have concentrated resources or objectives for increasing/ expanding access and quality, equity and relevance in education through management capacity, student support services, building partnerships with employees etc.

In an article presented by Kazaure in Abuja in 2013 in the UNESCO-UNEVOC regional forum Africa on “TVET for youth employability and sustainable development, UNESCO managed to place TVET higher on the UN agenda by Promoting and supporting countries to implement quality TVET and enabling life-long process and access to education for all. UNESCO provided services in the global networking, capacity development, advocacy and resource sharing. In Nigeria, the National Business and Technology Education [NEBTE] set up TVET centres of excellence at Kaduna which co-ordinated the International Centre for Technical and Vocational [UNEVOC] centres for the Economic Community of West Africa [ECOWAS] sub-region which supported capacity building for TVET personnel, promotes innovation and enhances partnerships.

In Kenya, the establishment of TVET institution centres of excellence was one of the recommendations made by TVET stakeholders in a symposium held in November

2003 (GOK, MOEST, 2005-2010). The symposium emphasized the creation of centres especially to nurture creativity and innovation. In this regard, the Ministry of Education Science and Technology [MOEST] adopted a Sector Wide Approach to Program Planning [SWAPP] which developed the Kenya Education Sector Support Program [KESSP] which in turn developed a comprehensive framework for program costing and implementation. Among the programs proposed for implementation were TVET institutions centres of excellence (MOEST, KESSP 2005-2010). KESSP was a five-year plan established to help the government achieve its target as outlined in the seasonal paper number 1 of 2005 (MOEST, KESSP 2005-2010)

As shown in MOEST (2013), report on the projects undertaken by the Directorate of Technical Education [DTE], the government of Kenya in collaboration with the African Development Bank [ADB] successfully created eight (8) new Centres of Excellence. These Centres of Excellence were as follows; Sang'alo Institute of Technology in Bungoma, Nairobi Technical Training Institute in Nairobi, Moi Institute of Technology in Rongo, Coast Institute of Technology in Mombasa, Rwika Technical Institute in Embu, Masai Technical Training in Kajiado, Thika technical Training in Thika and Nyandarua Institute of Science and Technology in Nyandarua.

In addition, it was decided to upgrade existing programs in selected technical institutions where Kenya Technical Teachers' Training College (KTTC) plus other nine regional centres of excellence were created (GOK, MOEST 2013). This was done under Kenya/Netherlands project on rehabilitation and upgrading entitled to equipment installation, testing and commissioning in all 10 institutions.

According to ADB group (2016) centres of excellence and TVET (phase II) was a project undertaken in line with the Kenya TVET act 2013 to increase access and the

quality, equity and relevance of TVET in the whole republic. The specific objective was to equip the youth at least 50 percent with relevant skills for immediate and emerging labour needs. The expected project's outcome was to increase skilled and employable youth. So far the issue was that there was no literature that showed whether the of the centres of excellence established were doing better as compared to those of non-centres of excellence in examination

As shown from the above, the government of Kenya did a commendable job in establishing centres of excellence in a bid to foregrounding TVET in the quest for national development as espoused in the vision 2030 (GOK, 2007). This study sought to examine the influence of Technical Vocational Education and Training (TVET) institutions centres and non-centres of excellence on student performance in examination. The study specifically compared the influence of TVET centres of excellence in relation to non-centres of excellence in the examinations by interrogating whether and how the centres of excellence were making a difference from the non-centres of excellence in fulfilling their mandate and objectives of increased/expanded access and quality, relevance and equity in TVET.

For the purpose of comparison in the study, the researcher used data from non-centres of excellence from the neighbouring Kiambu County that has two public technical training institutions – Kiambu Institute of Science and technology (KIST) and Thika Institute of technical Training (TITT). The research done in the selected institution in Nairobi County indicated the performance of students between the year 2013 and 2015. Table 1.1 and Table 1.2 showed the comparison data of the performance of students at national examinations in TVET institutions in Nairobi and Kiambu Counties between 2013 and 2015.

Table 1.1: Nairobi County CoEs performance in national examination in 2013 - 2015

Programs	Nairobi institute			Kabete institute			Kinyanjui Technical		
	2013	2014	2015	2013	2014	2015	2013	2014	2015
Applied science	62.6	69.2	73	66.7	40.0	61.2	45.9	56.8	49.1
Electrical & Electronics	39.4	50.1	51.3	82.4	87.5	100	61.5	52.1	68.8
Mechanical engineering	31.3	46.2	65.2	100	82.5	77.5	45.5	49.0	51.6
Automotive engineering	35.0	41.0	62.6	55.5	71.4	65.7	100	87.3	92.5

Table 1.2: Kiambu County Non-CoEs students' performance in national examination results 2013-2015

Programs	KIST			Thika institute		
	2013	2014	2015	2013	2014	2015
Applied science	29.2	34.0	48.1	33.3	27.8	37.2
Electrical & Electronics	29.6	40.1	33.3	32.9	42.1	56.1
Mechanical engineering	22.9	27.2	31.3	-	-	-
Automotive engineering	-	-	-	40.9	36.7	39.8

From the results shown in Table 1.1 there were inconsistency in the performance of programs like applied sciences in Kabete National polytechnic (66.7, 40.0 & 61.2) and Automotive engineering in Nairobi technical institute (31.0, 40.0 & 62.5) while other courses like electrical (82.4, 87.5 and 100) in Kabete and Applied sciences (62.6, 69.2 and 73) are shows positive in performance. Table 1.2 showed that

students' performance in the non-centres of excellence was lower than that of their counterparts in CoEs presented earlier. The study therefore sought to examine whether and how far these centres of excellence were achieving their objectives as compared to the non-centres of excellence in students' performance in TVET National examination because no study had been carried out to establish this.

1.2 Statement of the problem

From the foregoing, it is evident that the government of Kenya was keen in promoting TVET to realise youth employment, social exclusion and poverty so as to achieve the vision 2030. In this regard new centres of excellence were established and selected existing programs in institutions were upgraded to centres of excellence to provide the highest standard of TVET. The question however was whether these COEs were providing the envisioned quality education to meet the objectives of their establishment as compared to non-centres of excellence. The focus of this study was to establish whether there was a difference in students' performance in National examinations in TVET institution centres of excellence compared to non-centres of excellence. The variables for this study included; facilities, entry characteristics of the students and competence of the instructors.

The centres of excellence were presumed to be well equipped with learning and teaching resources as compared to non-centres of excellence in selected programs. Hence, the perception of the stakeholders was that the COEs' students would perform better at National examinations than those from non-COEs, qualifying them to be role models to other institutions in the same programs. The purpose of this study was to establish if the COEs were achieving their objectives and mandate for establishment

of increased access and quality, equity and relevance in national examination performance as compared to no-centres of excellence.

1.3 Purpose of the Study

This study investigated the influence of TVET centres and non-centres of excellence on students' performance at national examination in Nairobi County.

1.4 Objectives of the study

The objectives of the study included:

- i) To establish the influence of the students' entry characteristics on performance in TVET national examination in centres and non-centres of excellence in selected programs in Nairobi County.
- ii) To establish the influence of the competence of instructors on students' performance in TVET institution centres and non-centres of excellence in TVET national examination in selected programs in Nairobi County
- iii) To establish the influence of teaching and learning facilities on students' performance in TVET institutions centres and non-centres of excellence in selected programs in Nairobi County.

1.5 Research questions

The study was to answer the study questions that follow:

- i) How do students' entry characteristics influence students' performance in TVET national examination in TVET institution centres and non-centres of Excellence in selected programs in Nairobi County?
- ii) How does the competence of instructors' influence students' performance in TVET National examination in TVET institution centres and non-centres of Excellence selected programs in Nairobi County?

- iii) How does the quality of teaching and learning facilities influence the students' performance in TVET national examination in TVET institution centres and non-centres of excellence in selected programs Nairobi County?

1.6 Significance of the study

The study findings were hoped to provide information to the stakeholders (MOEST, NGOs, community based organisations, private sector, faith based organisation and development partners) on the COEs to justify their worth of establishment. If their objectives were found to be achieved, then more programs would be infused into the system and be strengthened, making them role models for benchmarking. The study findings were to provide information to the government, MOHEST and other stakeholders on the importance of teaching and learning facilities, competence of the instructors and students' entry characteristics on students' performance in national examination and achievement.

The achievement of the objectives would boost the morale of the trainees and trainers hence more effort would be put and higher performance would be achieved in selected programs in TVET institutions. The study investigated to establish the factors that hindered better performance in other area and proposed to the stakeholder means and ways of solving them. The findings would prompt other researchers in the similar setting to carry out comparative studies leading to an expansive literature on TVET programs, particularly focusing on centres of excellence.

1.7 Limitations of the study

Some respondents were hesitant in disclosing some of the needed information for their respective institutions as they feared breach of confidentiality or tarnishing the image of their institutions. The research created rapport with the respondents and

assured them of confidentiality of their identity. Another limitation was that the data used was limited to that which was collected from the respondents who voluntarily agreed to participate in the study. There were some who declined to participate and they would not be coerced to do so. The data collected was not used for generalization to other fields of TVET or other academic fields. Another limitation was that there were several factors that influenced students' performance but in this study they were limited to facilities, competence of instructors and students' entry characteristics. Also the sample size was limited to 3rd year students; they were the ones who had been there longer, therefore TVET instructors and the principals of the institutions in question were sampled.

1.8 Delimitations of the study

Study delimitations are choices of the researcher, which describes the boundaries that one sets for the study. These are parameters of the research which deal with the items like population sample, treatments, setting and instrumentation

According to Mugenda and Mugenda (2009), delimitations are factors, which the researcher chooses to control in the study. In this regard, the research focussed on TVET institutions centres and non-centres of excellence in Nairobi County; particularly on facilities and equipment, entry and characteristics of the students, and competence of instructors.

1.9 Assumptions of the study

The study assumed that students from the centre of excellence would produce better results in the TVET national examinations compared to those from non-centres of excellence. The study also assumed that the facilities in centres of excellence were of high quality than those in non-centres of excellence. The study assumed that the

trainers in centres of excellence were more qualified than those in non-centres of excellence.

1.10 Definition of operational terms

Competence of Instructors refers to the professional qualification and experience of the instructors.

Innovation refers to the instructors' ability to introduce of new things, ideas or ways of doing something.

Skill refers to the ability to perform tasks either manually or intellectually or both

Social exclusion refers to the lack or denial of resources, rights, goods and services and the ability to participate in the normal relationship and activities in the society.

Technical Centers of Excellence refers to identified institutions with selected programmes that have been endowed with resources and have acquired the highest level of accreditation under Unified Technical Vocational Education and Training Program Registration and Accreditation (UTPRAS).

Technical Non-Centres of Excellence refers to institutions offering same programs as in centres of excellence but are to be endowed with resources to acquire the high level of accreditation under Unified Technical Vocational Education and Training Program Registration and Accreditation (UTPRAS).

Trainee refers to a person who is being taught to do a particular job or skill in this respect, in relation to in the TVET centres and non-centres of excellence.

Trainer refers to person who trains others to do a particular job or skill, in this context the TVET centres and non-centres of excellence.

Youth unemployment refers to the unemployment of young people.

1.11 Organization of the study

The study was organized into five chapters. Chapter one focused on introduction and comprised of the background to the study, problem statement, study purpose, study objectives, research questions, study rationale, limitations and delimitations of the study, assumptions made in the study, definitions of operational terms and study organization. Chapter two comprised of related literature review and the conceptual framework for the study. Chapter three covered the research methodology. Chapter four comprised of data analysis, interpretation and presentation. Chapter five dealt with the study summary, drew conclusions and made recommendations from the study findings.

CHAPTER TWO

REVIEW OF RELATED LITERATURE

2.1 Introduction

The chapter dealt with related literature review. It mainly looked into the overview of TVET centres of excellence, influence of students' entry characteristics, facilities, and instructors' competencies on student performance in TVET national examinations in the previous three years. Lastly, the study dealt with the conceptual framework related to the research.

2.2 An overview of the TVET Centers of Excellence (CoE)

According to UNESCO 2004, sustainable development became part of the new paradigm for TVET that was adopted at the International conference on TVET in Seoul; Korea in April 1999, which was a central plank of the Bonn declaration on TVET where approaches and practices were presented to show contribution that TVET had made towards sustainable future. Hughes (2005), stated that learning for work, citizenship and sustainable future was a joint responsibility of education for the world of work and a variety of stakeholders in the formal and informal socio-economic environment in TVET. The approaches and practices discussed included: globalization in prompting governments to take renewed interest in TVET form of education. Nations where unemployment was endemic, TVET was prioritized in areas of fostering entrepreneurship; and small enterprises for future. Also, the recent attachment given to TVET by some African governments was reflected as an important element for poverty strategy papers developed in collaboration with the World Bank (World Bank, 2011).

Many recent policy statements concerning science, technology, innovation and development have emphasised the creation of 'centres of excellence' in developing

countries as a key goal. For instance, the Commission for Africa in 2005 recommended the establishment of a network of centres of excellence within Africa to help the continent catch up and keep up with the fast-moving pace of technology-led economic growth. These have been perceived as a means to enhance science and technology capacity in developing countries, and hence, they have been argued as having the capacity to promote productive linkages between science, technology and development (Leach & Waldman, 2009).

Due to high youth unemployment in Kenya TVET stakeholders held a symposium in 2013 to give recommendations to solve this problem. Among the recommendations made in the symposium was the creation of centres of Excellence to nurture creativity and innovation. It was a five-year plan to help the government to achieve its targets as outlined in sessional paper 1 of 2005. A directorate from the Ministry of Education Science and Technology (MOEST), recommend that Technical Education in collaboration with African Development Bank established eight COEs in the country. In addition, ten (10) existing institutions were upgraded to COEs under the Kenya /Netherlands project on rehabilitation. In Nairobi County there were four TVET institutions, which were accredited centres of excellence but one was upgraded to a university college. This reduced the number of the centres to three; Nairobi Technical Institute, Kabete National Polytechnic and Kinyanjui Technical Institute as shown in the table below

Table 2.1: TVET Centers of Excellence in Nairobi County

Name of institution	Center of excellence
P. C. Kinyanjui	Mechanical and Automotive
Kabete National polytechnic	Electrical and Electronics
Nairobi Technical Training Institute	Applied Sciences.

Source; Directorate of Technical Education Nairobi (2016)

2.3 Influence of Students' entry qualification in students' performance in TVETs' centres and non-centres of excellence

In "Cost Benefit to Employer to Place and Support Trainees in Workplace" by Verfuert (2014), project manager South Africa, USA and India say that the way in which German Vocational Education and Training (VET) system linked the practical and theoretical sphere and involved public and private stakeholders; the dual training system proved to be a successful model,

In the TVET conference 2013, a report presented by Zungu; principal, Umfolozi on TVET college on aligning summative assessment with industry requirement" revealed that TVET colleges had the mandate to offer theoretical components required for different occupations and skills with important practical components to put all the theories into practice. The practical tasks needed to indicate each student's ability of knowing how to do things gained through experience and related to industrial applied practices. He continued to say that practical tasks could never be offered in isolation, it always needed to be aligned to standard practices within an occupation and not just guided by trade tasks. The task was demonstrating the student's ability to apply their theoretical knowledge in different situations. The same view was shared by Papier in her research on vocational and practical training for employability of TVET college graduates who pointed out the importance of TVET college students obtaining both

theoretical and practical training for employment in the engineering sector (National Accord and White Paper for Building an Integrated and Effective Post School System, 2014).

In Jordan, pre-vocational education was provided in general education in grades 1-10. Students of grade 8-10 were allowed to select two subjects from industrial subjects; business, agriculture and home economics to acquaint student with and interest them in pursuing vocational studies after basic education. Based on performance in grade 8-10, students were allocated to academic or vocational streams in secondary school or applied science education (skilled worker program) under vocational training co-operation.

After secondary, students sat for the General Secondary Education Certificate (GSEC); the Tawhiji, a requirement for entry to tertiary education. Those who received a pass of 65percent got to community colleges and those who scored higher marks of 75percent and above got to University. Those who didn't pass Tawhiji were given a certificate for completion of secondary education. Jordan's law called for classification of all workers according to skill ladder; limited skilled, skilled craftsman, technicians and professional so as to ensure improvement and sustainability of products and enterprises. To obtain a diploma students had to pass their comprehensive examinations after which they could continue to university if they scored 75 percent and above.

A report published by Mshauri in 2013, about Kilimanjaro International Institute for Telecommunication, Electronics and Computer [KIITEC] centre in Arusha; Tanzania, students wishing to join the institution were to meet the following requirements;

- i) Have Ordinary level with good average in Maths, physics, science and English or several years of industrial experience.
- ii) Must have developed logical aptitude and be able to demonstrate seriousness, determination and creativity.
- iii) Be prepared to participate in teamwork, develop communication skills and create technical devices.
- iv) Be skilful with well-balanced approaches to theory and development.
- v) Be prepared to meet challenges of acquiring good level of knowledge and a rewarding professional position and even create own job.
- vi) Be subjected to examination entry in Mathematics, English and Logic.
- vii) A successful candidate will attend an interview to determine their motivation, attitude and character.

According to Simiyu (2010), in a study conducted in Kaiboi TTI, Eldoret found out that in Kenya revitalizing technical training institutes, entry qualifications to various courses in the institution have different entry grades at different levels. This was also depicted in the UNESCO-UNEVOC International Centre for Technical and Vocational Education and Training (2009), following the policy of the MOEST various TVET courses have different entry point; Diploma courses C- and Certificate courses D+. The entry qualifications were to be investigated to proof whether they influenced better performance in the Centres of Excellence than in the Non-Centres of Excellence in selected programs.

2.4 Influence of the competence of Instructors on student performance in TVETs' centres and non-centres of excellence

According to Doyle, (2008), competency entails cross mastery of skills to achievable abilities in training. Evaluation of competency is done through performance levels of

knowledge, skills and attitude due to their measurable quality. These measures of competence show a lecturer's or tutor's ability to deliver during instructional process. However, knowledge based competence has more weight in objective delivery as compared to skill and attitude oriented competence (Mashin, 2013).

A lecturer's effectiveness has been conceptualised by the production of desired outcomes in the profession (Napier, 2013). Therefore, deterioration has been noted in the academic accomplishments, attitude and standards of students, one curiously wonders if the high failure rates and the poor quality of the students is not a reflection of the teaching quality or lack of lecturer's competencies (Sifuna, 2001). In other words, the incompetence of lecturers in classroom interaction with the students could be responsible for the observed poor performance of students in the classroom (Theall & Franklin, 2001).

Research shows that students are the most relevant and qualified sources to determine the extent to which the learning experience was productive, informative, satisfying or meaningful. Although opinions on these matters are not direct measures of lecturer effectiveness, they do provide legitimate indications of student academic performance and satisfaction. Furthermore, there is substantial research connecting student satisfaction to effective teaching methods (Theall & Franklin, 2001).

Debate around teachers' competence in TVET indicate trends towards greater professionalization of teaching cadre (Cort et al, 2014; Skill Commission, 2010; Young, 2008). The deepening knowledge-base on which TVET rests in terms of content and pedagogical engagement is the basis for moves towards increased professionalization. The basis for TVET teaching can be schematized as the interaction between three dimensions;

- i) Formal subject or technical knowledge,
- ii) Pedagogical expertise and
- iii) Practical workplace experience.

According to a research done in UK on “The inquiry into teacher training in vocational education” revealed that lecturers have been and will continue being recognized as second class to school teachers despite the policy makers considering vocational teaching as a core profession in the knowledge society (Skill Commission, 2010). The commission concluded that there is need to converge the two teacher training regimes; academic and vocational in further education and the post-compulsory sector (Moodie, 2010).

According to the European Centre of Development of Vocational Training (CEDEFOP2011) report, good vocational practices were described in countries like; Denmark, Finland, Italy, Netherlands, Norway and Portugal which showed that initial qualification as a teacher requires a higher educational degree followed by teacher training that is regulated at national level. In some countries a nationally recognized vocational qualification is recognized in place of higher educational degree (Cort et al, 2004). Specifications for pedagogical knowledge base of TVET teaching is highly varied in terms of new sub-specialization such as learning need analysis, planning and management of learning systems at operational and strategic levels, learning designs, distance learning, multimedia teaching, integrated communication technology (ICT), inclusive education, quality assurance, partnership creation and networking (Cort et al,2004;Grooting and Nielsen, 2005; ILO, 2010;Skill Commission,2010;Wheelahon, Moodie,2010; Young andGuile,1997).

From the above sources, a range of entry qualifications into teaching was described; from post-graduate teaching and associate degree to various levels of certificates and diplomas (Cort and colleges, 2004). In most European countries, reforms in the TVET system were changing; some teachers were no longer qualified to teach with their existing qualifications, there was need for updating and expanding. Where VET teacher professionalization was taking place, initial entry into teaching was often undertaken by technical universities that offered the technical subject which would be taught, or as in the UK, promised university college partnerships or on teacher development provision offered by colleges themselves.

At academic universities, post graduate studies in education for TVET teachers and those who provide curriculum, an academic leadership focused on various forms of research, corporative policy analysis and deepening of theoretical bases for understanding curriculum and pedagogy. Moose and colleagues (2006), argued that the general 3+2+3 structures of higher education (3 years bachelor's degree, 2 years for master's degree and 3 years for PhD) introduced by Bologna process had facilitated the integration of TVET teacher education into general system of education in many countries.

In same research by Moos et al (2006) it was practical that regular contact between TVET institutions and workplaces twinning arrangement involving industry and unions more closely in defining teacher future roles, work placement, internships and practical training period were among the recommendations often cited.

According to Hudson, 1992; Layton, 1984; Morais and Neves, 2001; Muller and Gamble, 2010; Schmittau, 2005; it was practical that learning did not take place in the absence of teacher's expertise in what to teach and how to teach it. Strong formal

teaching and learning aided by various educational technologies and premised on an up-to-date understanding of vocational teaching and professional field of practice was what was good enough for TVET.

In teaching, research had it that teacher-learner ratio greatly influenced teaching as a profession and hence performance of the school because there was increased interaction which enabled the learner to be motivated (Chelimo, 2005). The learners' needs could be catered for leading to production of quality workforce (Nyerere, 2000).

In Tanzania, Morogoro Vocational Teachers' Training College (MVTTC) centre's objectives to provided short and long term courses for vocational teachers, skills upgrading and updating, consultancy and research development. MVTTC mainstreamed entrepreneurship education and training in vocational teachers training.

According to Ken Duncan in "developing existing lecturer capacity through workplace exposure", it was an axiom of TVET everywhere that providing workplace experience for college students and their lecturers/instructors had a strong positive effect on student pass rates and prospects of employment. It also motivated the college lecturers to raise their game, help to bring the classroom curriculum into closer alignment with the skill needs of industry and promote long term co-operation between colleges and companies (TVE Conference, 2001).

In a case for "Establishing National Centre for Pedagogy" by Monash University, (2008), four critical components of quality teaching were identified; teacher preparation, curriculum, teaching strategies and professional development. Teacher's pedagogical practices combined with content knowledge correlated strongly with student achievement and retention. Quality leadership was next to quality teaching.

In “teaching and learning methods that work” by Andy Smyth, the big drive in vocational education was that it involves real time, real world activities with opportunities to have a coach or guide available for review, feedback and to reflect with the person or be a guiding hand through the process. This teaching depended on the relationship between the teacher and student (Hattie, 2009).

As noted from the above, there was great professionalization in TVET teaching where instructors had achieved high levels of education in technical subjects, pedagogical expertise and practical work experience. This led to high student achievement in TVET examination and hence employability in the world of work. According to Gordon (2001), lecturer efficacy was sometimes considered to be an indicator or prediction of teaching effectiveness and research showed that efficacious lecturers were capable of bringing about change in students’ behaviour, motivation, and learning outcome. Many scholars have shown credible connection between students’ academic achievement and the lecture’s quality than the influence of students’ characteristics like socio-economic status, race and educational history among others (Hughes, 2009; Napier, 2013; Loughram, et al, 2008, and Peterson, 2008). The benefits associated with being taught by competent lecturers were cumulative. Research indicated that the achievement gap widened each year between students with most effective lecturers and those with least effective lecturers.

Metzger and Woesmann, (2010) studied the relationship between lecturer competencies and students’ outcome. They discovered that the teaching quality was directly related to the students’ achievement and it was very important for lecturers to develop strong teaching competencies in order to deliver quality teaching. One of the lecturer competencies they specifically mentioned in their study was lectures subject knowledge because without having subject knowledge, the lecturer was unable to

comprehend the students with relevant knowledge and skills required for that particular subject. Therefore, the subject knowledge was essentially important for lecturers so that students could meet the desired learning outcome and were satisfied with their learning. From the reviewed literature, it could therefore be hypothesized that there was a relationship between competences of instructors in TVET and students' performance in national examinations. This was tested in the context of this research to proof whether the instructors in the Centres of Excellence influenced better results than those in the Non-Centres of Excellence in the national examination.

2.5 Influence of teaching and learning facilities on student performance in TVETs' centres and non-centres of excellence

UNESCO (2012) postulates that teaching and learning process and its effectiveness is a measure of the quality of any TVET program. Quality facilities and equipment is fundamental to the provision of quality and relevant TVET education. UNESCO further revealed that the availability of systematic approaches and quality assurance to support practitioners and policy makers is important in improving the quality of training, provision and guiding students in making choices. Charner (1996) noted that learners in developing countries have started showing interest in technology. Training facilities and equipment serve variety purposes of trainees and the surrounding community, most importantly to develop knowledge and skills to trainees. Literature on the impact of physical learning environment on learning outcome shows that curriculum and facility design are related, meaning that physical learning environment has influence on students' social and scholastic achievement (Jamson, Dane and Lippman,2005).

The space for TVET has distinct requirement for construction of infrastructure such as equipment, room size and providing resources for a range of activities in addition to

providing correction rooms for academic instruction (JICA, 2006). Technical school instructional rooms and space design tend to be driven by the highly specialized equipment, vanishings, machinery and tools needed to properly instruct the students (JICA, 2006 and Cutshall, 2003). TVET facility therefore necessitates flexible design with consideration for future and accompanying changes for pedagogical approaches in labour market demands (Wolf, 2002, JICA, 2006). Isler and Doerig(2008), contends that Architects should design space with little definition of function so that spatial element can evolve. Jamson (2000), explains that space influences how a teacher constructs his activities, it provides a setting for students to develop critical thinking and problem solving abilities, practicing skills and gaining hands-on experience with industrial equipment.

According to Kipanep (2011), the main thrust of TVET is to develop skills in the learner which are practical in nature and which can be acquired in a well functional workshop, stocked with relevant facilities and equipment. This ensures quality, dependable and sustainable skills to the learner. He continues to say that quality materials ensure students' competence in practical knowledge, skills and mastery of their chosen career which finally translates into technological advancement. TVET Materials should be inclusive; appropriate to the curriculum, learners' cognitive level, language proficiency and multiple-social identities (Heugh, 2003).

School facilities, which consists of all types of buildings that used for academic and non-academic purpose, equipment, classroom facilities, furniture, instructional materials, audio-visual aids, toilet, ICT, library and laboratory materials and others play a pivotal role to smoothly run teaching and learning process. As Buckley, Schneider and Shang (2004), school facilities enable the teacher to accomplish his/her task as well and help the learner to learn and achieve effectively. Additionally, they

emphasized that the availability and proper use of school facilities can affect the interest of the teacher to teach effectively in turn that positively affects student's academic achievement. Therefore, the school facilities in the school need a proper attention as they have a great value in the support of teachers and students' morale, motivation and play a significant role to improve the quality of education.

Hedges and Thereon (2000) also argue that, the adequacies of school facilities do not a guarantee for student's academic performance but the proper utilization of the facilities has a great value. Thus, to improve the quality of education, the availability of school facilities and the proper management of these resources should be given a great attention. Furthermore, Khan and Iqbal (2012) also observed that adequate and quality school facilities are basic ingredients for quality education and to achieve the intended goal of the school program. They also strengthen the idea by emphasizing that learning is a complex activity that requires students and teachers' motivation, adequate school facilities such as standardized buildings and classrooms with their facilities, instructional materials and equipment for child's development. The preceding arguments points out that quality of facilities in TVET institutions can influence the students' performance. The study examined this in the context of TVET COE in Nairobi.

In a report published in 2005 on Kilimanjaro International Institute of Telecommunication and Computers (KIITEC), in Arusha; Tanzania gives a good example TVET centre of excellence by show of the materials available;

- i) Laboratories equipped with industry tested equipment.
- ii) Multimedia centre with large selection of books, CD-ROMs, internet, printing and photocopy access.

- iii) Classrooms with well lit-rooms with access to electricity and ample learning space for each student.
- iv) Creativity rooms/workshops for personal projects.

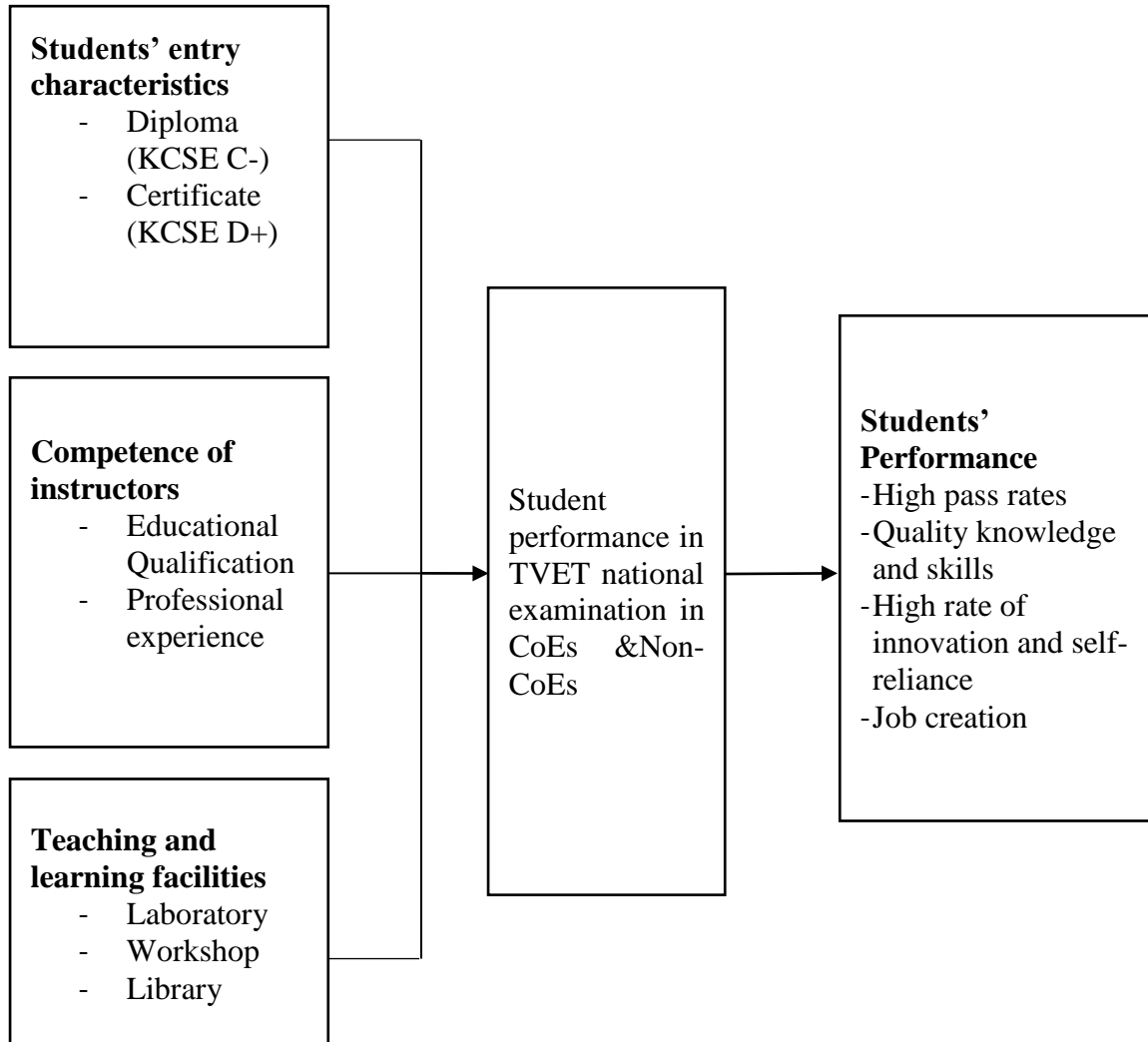
As always, where there are adequate facilities in a learning institution the quality of learning is promoted leading to better students' examination results. The TVET institution centres of excellence are well equipped with facilities, this is a very important factor that promotes student performance in national examinations compared to non-centres of excellence. The study was to investigate whether these facilities in the Centres of Excellence led to better performance in the CoEs when comparing them to Non -CoEs

2.6 Summary of Reviewed Literature

According to the study it was proved that little had been done in the context of the influence of TVET institutions centres and non-centres of excellence on student performance in Kenya mainly in Nairobi County. Existing literature nevertheless, was based on the arguments supporting these propositions from research done in different contexts, like Lippman and Jamson (2005) who supported the idea of facilities that influenced students' scholastic achievement. Gamble, (2010) said that learning did not take place in the absence of the teachers' expertise on what to teach and how to teach it. Also, Mshauri reported (2013) about KIITEK centre in Arusha; Tanzania that students wishing to join the institution were to meet the stipulated requirements for admission. Therefore, the study was in consistence with the other scholars the stipulated qualification be met for admission the courses of interest but the current literature was inadequate in addressing the question of how TVET centres and non-centres of excellence influenced students' performance at national examinations, particularly in Nairobi County.

2.6 Conceptual Framework.

Figure 2.1: Relationship of facilities, competence of instructors, and students' entry points with student s' performance



As shown in the conceptual framework, students' performance was influenced by some aspects in the institutions. These include quality of the facilities, competence of the instructors as well as the students' entry characteristics. These aspects were therefore the independent variables influencing students' performance, which was the dependent variable. Each of these variables was assessed using certain indicators.

Centres of Excellence were characterized by quality facilities, well equipped with Equipment and tools such as machines, rooms which were well spaced for hands-on mode of teaching and learning and enough books for reference. At the same time, the instructors were competent in their area of teaching. In addition, the students who were selected to these institutions met the required entry points for admission to their fields of interest. All these factors put together, students were able to perform better in their national examination and portrayed the following characteristics; quality knowledge and skills, innovative and self-reliance, self-employed could fit well in market demand for the world of work.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

The chapter discussed a detailed explanation of the selected study methodology. It described subsections including; study design, study population, sample size, sampling procedure, research tools, pilot study, validity and reliability of the instruments, data collection procedure, data analysis technique and Ethical consideration.

3.2 Study design

The research study used descriptive survey research design. Burns and Grove (2003), stated that descriptive survey research is designed to provide a picture of a situation as it naturally happens. Using the design could therefore help in formulation of knowledge and solutions to the existing problem. For this reason, the design was considered appropriate for this study. The study surveyed TVET centres and non-centres of excellence to establish their influence on student performance in national examination. The descriptive survey design helps a research to clarify collected data to meaningful and understandable forms in social sciences (Orodho, 2004). This design allowed the researcher to describe systematically, factually and accurately the characteristics of the existing phenomena without changing the state of affairs by manipulating the variables. This design enabled the researcher to establish whether and how the TVET centre were achieving their objectives by doing better in the national examination than the non-centres of excellence.

3.3 Target population

Target population refers to the entire group of individuals or objects to which the researcher is interested in generalizing the conclusion, (Oskar Blakstad, 2008-2025). As per the Technical and Vocational Education and Training Authority (TVETA) (TVETA, 2016), there are three (3) public technical training institutes in operation; Nairobi Technical Training Institute, PC Kinyanjui Institute of Technology and Kabete National Polytechnic. The study targeted three principals, 15 instructors as well as 60 students in third year in the identified institutions.

3.4 Sampling procedures and sample size.

A sample is a subject of a particular population according to Mugenda and Mugenda (2003). Sampling was described by Cooper et al., (2003) as the segment elements drawn from a population to represent the whole. Sigmund, et al, (2010) described sampling as the process of using a portion of elements with common characteristics to help understand selected population and make generalizable conclusions on subjects under study.

According to Mugenda and Mugenda (2003) sometimes the population may be too small hence it is meaningless to sample it. Therefore, since each of the three institutions had 1 principal, all 3 of them were targeted to be included in the sample. Kothari (2004) affirmed that a sample size of 30 was adequate for a research. Therefore, the researcher considered that a sample of over 30 respondents would be adequate. In this regard, a sample of 60 students was targeted from the institutions whereby 30 students were from the centres of excellence and 30 from the non-centres of excellence. The sample number of instructors was 15 from the centres of excellence and 15 from non-centres of excellence. However, these were selected

using purposive sampling. Orodho (2003) described purposive sampling to entail the researcher's judgemental characterization of common characteristics of a target group. In this regard, the researcher targeted students in third year as they were considered to have had adequate experience in the institutions hence more informed of the aspects being investigated in the study. Therefore, the total sample size targeted was 95. This was considered adequate as it met the threshold recommended (30) by Kothari (2004).

3.5 Research instruments

The data was collected using a questionnaire which was considered the most suitable instrument for descriptive research design (Wiersman, 1986). These are fact finding strategies, or are tools for data collection. The information was captured using both open and closed ended questions. The questionnaire was structured into three sections according to the objectives of the study; section one on facilities, section two on instructors' competence and section three on students' entry characteristics. There were three categories of questionnaires; category one for principals, category two for instructors and category three for students.

3.6 Pilot study

According to Vanora Hundley (2002) a pilot study is a mini-version of a full-scale study, it's a feasibility study or pre-testing of a research study. In this regard the researcher conducted a pilot study in two TVET institutions in the neighbouring Kiambu County to determine whether the respondents would have same characteristics to the others. A sample of four students and two instructors were used in the study. The pre-testing of the research instruments to the same respondent helped to eliminate errors during the administration and scoring, it also helped in reframing the questions, which was misunderstood from what the study tried to test.

3.6.1 Validity of the instrument

Denzin and Lincoln (2005) define instrument validity as the extent which research instruments perform their desirable results. Therefore, validity is termed as the positive outcome of the research instruments after data analysis (Mugenda, 1999). To enhance validity of the instruments, all terms used were clearly defined so as to have same meaning to all respondents. Two experts from the department of Educational Foundations; the Supervisor appraised the instruments' relevance in each item in relation to the study objectives.

3.6.2 Reliability of the instruments

Mugenda and Mugenda (2003) opine that instrument reliability entails the consistency of research instruments yielding the same results after repeated testing. Denzin and Lincoln (2005), call it consistence. The degree to which the instrument consistently measures what it is intended to measure. To ensure reliability, internal consistence techniques were employed. The test retest method was used where both sets of questionnaire were administered twice to the same group of teachers and the trainees. A time lapse of two weeks was given before the questionnaire was administered again. Afterwards the obtained correlation coefficient determined the reliability of the questionnaire. The study used Pearson correlation coefficient (r) to establish the reliability of the research instrument, the coefficient obtained was 0.9 which was considered a perfect reliability, meaning the instrument was good to be used for the study.

3.7 Data collection procedure

Data collection involves consulting primary and secondary data sources in order to elicit information, facts, evidence, proofs or truths regarding the research problems

(Bobbie, 2002). It involves gathering both numerical as well as text information so that the final database represents both quantitative and qualitative information. In this regard, the researcher collected both qualitative and quantitative data using the already designed research instruments (Questionnaires).

The researcher first requested for an introductory letter in the Department of Educational Foundations to enable the researcher acquire a National Commission for Science, Technology and Innovation (NACOSTI) research permit. Permit copies were then presented to relevant authorities to issue clearance letters to visit the institutions. The principals were contacted through letters to arrange for the actual institutional visits. The researcher to the respondents personally administered the questionnaires on the agreed date. The researchers distributed the questionnaires to the respondents, waited for them to fill, and were collected later the same day. The few that remained were collected two day later through the instructors. This took place during school days in order to get all the respondents.

3.8 Data analysis techniques

Data analysis is a process of inspecting, cleaning, transforming and modelling data to identify useful information, suggest conclusions and support decision-making (Creswell, 2009). In this study, both quantitative and qualitative data were involved. For quantitative data, analysis was done by use of descriptive statistics of percentages, and frequencies. Statistical Package for Social Sciences (SPSS) was used to tallying up responses, compute percentages, and present the data in line with the study objectives. The qualitative data was analysed through content analysis. This involved a systematic categorization of the qualitative data in line with the objectives of the study.

3.9 Ethical consideration of the study

Ethics are norms or standards for conduct that distinguish between right and wrong (Centres for Innovation, Research and Teaching (CIRT), 2015). As such, several ethical considerations were adhered to during the study. First, the researcher sought permission to conduct research from the relevant Authorities. The researcher also sought respondents' consent to commence with the study. Before administering the research instrument, the researcher explained on the purpose and created rapport with the potential respondents. To ensure confidentiality, respondents' names, contacts or the names of their schools were not to appear anywhere on the questionnaire. The researcher cautiously administered the research instruments in order to uphold the respondents' rights and privacy, further, no respondent was coerced into the exercise.

CHAPTER FOUR

DATA ANALYSIS, INTERPRETATION AND PRESENTATION

4.1 Introduction

The chapter presented the analyzed data, interpretations and presentation based on research questions. Descriptive statistics were used for data analysis. Frequency tables were considered appropriate to present the findings. Collected data was analyzed qualitatively and quantitatively.

4.2 Instruments Return Rate

The researcher sought to establish whether the response rate of the study was sufficient for the purpose of the study. The instrument response rate after checking for completeness and accuracy of the returned research tools the response rate was as presented in Table 4.1.

Table 4.1 Instrument return rate

Respondents	Centres of Excellence				Non- centres of excellence			
	Target		Achieved		Target		achieved	
	(f)	%	(f)	%	(f)	%	(f)	%
Principals	3	100.0	3	100.0	2	100.0	2	100.0
Instructors	15	100.0	14	93.3	15	100.0	12	80.0
Students	30	100.0	29	96.7	30	100.0	25	83.3
Total	48	100.0	46	95.8	46	100.0	39	81.3

The study targeted 48 respondents from Centers of Excellences and 46 respondents from Non-centres of Excellence to ensure equal representation. Therefore, 95 questionnaires were administered to the respondents. The study findings presented in

Table 4.1 showed that 100 percent of the principals, 93.3 percent of the instructors and 96.7 percent of the students in the Centres of Excellence returned the research tools. Therefore, the study realized 95.8 percent total response rate in CoEs. In the Non-centres of Excellence the study realized 100 percent of the principals, 80 percent of the instructors and 83.3 percent of the students summing to a total response rate of 81.3. Therefore, the overall response rate was 89.6 percent, deeming the response very sufficient for the purpose of this study. Kothari (2010), recommended that a sample size of 30 for a research is adequate; hence, the sufficient response rate.

4.3 Demographic data of the respondents

To establish the respondents' demographic data, the study examined their gender, age, instructors' professional qualification and teaching experience to gain insight of their characteristics. The study searched to establish the distribution of instructors' and students' gender and the findings were as shown in the Table 4.2.

Table 4.2 Respondents distribution by gender

Respondents	Gender	Centres of Excellence		Non-centres of excellence	
		(f)	%	(f)	%
Instructors	Male	9	64.3	5	41.7
	Female	5	35.7	7	58.3
Total		14	100	12	100
Students	Male	21	72.4	12	48.0
	Female	8	27.6	13	52.0
Total		29	100	25	100

According to information contained in Table 4.2, the findings revealed that 64.3 percent of the instructors in Centres of Excellence were male while 72.4 percent of

the student respondents from the centres of excellence were male. Also, 58.3 percent of their counterparts in Non-centres of excellence were female and 52 percent of students from Non-centres of Excellence were female. These findings meant that there was gender disparity in the TVET institutions in the pursuit of technical courses, hence, more males were in the CoEs. The research tried to find out the respondents' age bracket. The findings were presented as shown in Table 4.3.

Table 4.3: Respondents' age bracket

Age bracket	Students				Instructors			
	Centres of Excellence		Non-centres of excellence		Centres of Excellence		Non-centres of excellence	
	(f)	%	(f)	%	(f)	%	(f)	%
20-25	12	41.4	16	64.0	0	0.0	0	0.0
26-30	8	27.6	5	20.0	0	0.0	0	0.0
31-35	5	17.2	3	12.0	1	7.1	2	16.7
36-40	3	10.4	1	4.0	6	42.8	6	50.0
Over 41	1	3.4	0	0.0	7	50.0	4	33.3
Total	29	100.0	25	100.0	14	100.0	12	100.0

According to Table 4.3, 41.4 percent of the students were between the ages of 20-25 years while only 3.4 percent were over 41 years old in the CoEs. Also, 64 percent of students in Non-CoEs were aged between 20 to 25 years. On the other hand, 50 percent of instructors in CoEs and 33.3 percent of the instructors in Non-CoEs were over 41 years old while, only 7.1 percent and 16.7 percent of the instructors respectively were below 35 years old. This means that majority of the students were in their dynamic age, while the majority of the instructors were in their prime stages in life, hence they would provide information as requested by the study.

To establish the academic qualification of the principals and instructors, the study findings were as in Table 4.4.

Table 4.4 Academic qualification of instructors

Qualification	Centres of Excellence		Non-centres of excellence	
	(f)	%	(f)	%
PhD Degree	0	0.0	0	0.0
Master's Degree	5	35.7	4	33.3
Bachelor's Degree	8	57.1	5	41.7
Diploma Certificate	4	28.6	3	25.0
Total	14	100.0	12	100.0

The study findings showed that 57.1 percent of the principals held Master's degree while 35.7 percent had Bachelor's degree as their academic qualification. On the same note 41.7 percent of the instructors had Bachelor's degrees as their academic qualifications. This means that instructors were well qualified to teach in the institutions as instructors and could influence the examination performance their area of teaching.

The study further sought to establish teaching experience of the instructors in the TVET institution. Table 4.5 presented the findings.

Table 4.5: Teaching experience of instructors

No of years	Centres of Excellence		Non-centres of excellence	
	(f)	%	(f)	%
Below 10 years	1	7.1	2	16.7
11 to 20 years	6	42.9	3	25.0
21 to 30 years	4	28.6	5	41.6
Over 30 years	3	21.4	2	16.7
Total	14	100	12	100

The findings contained in Table 4.5 revealed that 42.9 percent of the instructors in the Centres of Excellence had taught in TVET for between 11 to 20 years while 21.4 percent mentioned that they had taught for over 30 years. This means that the instructors in the Centres of Excellence had stayed at the TVET institutions for long and therefore would give comprehensive results for the study on the influence of TVET institutions Centers when comparing them with non-centers in examination performance.

On the other hand, 41.6 percent of the instructors from Non-centres of Excellence indicated they had an experience of between 21-30 years. This meant that they were also in a position to influence performance and could provide the required information for the study. Therefore, from the demographic characteristics of the study respondents it was clear that the respondents were credible to give the desired information fit for this study.

4.4 Influence of students' entry points on students' performance.

The first research objective sought to establish the influence of the students' entry points on examination performance. This section covered the criteria used for admission and students' entry requirement.

4.4.1 Criteria used for admission.

The findings showing criteria for admission were as in Table 4.6,

Table 4.6 Criteria used to admit student to TVET courses

Method	Centers of Excellence						Non-Centers of Excellence					
	Students		Instructors		Principals		Students		Instructors		Principals	
	(f)	%	(f)	%	(f)	%	(f)	%	(f)	%	(f)	%
Interest	2	6.9	0	0.0	0	0.0	2	8.0	0	0.0	0	0.0
Academic qualification	27	93.1	14	100	3	100	23	92.0	12	100	2	100
Total	29	100	14	100	3	100	25	100	12	100	2	100

From the findings in Table 4.6, 93.1 percent of the students, 100 percent of instructors and 100 percent of principals from CoEs indicated that the criteria used to admit student to TVET courses was academic qualification in their KCSE results. Only 6.9 percent of the students said that the criteria of admission were interest. On the side of non-CoEs, 8 percent of the students said admission was through interest but 92 percent of them indicated that it was academic qualification. This was echoed by 100 percent of instructors and 100 percent of principals. The finding strongly indicates that admission was through academic qualification in KCSE results. Therefore, students' entry point was established to be determined by their admission criteria hence influencing their performance in national examinations in CoEs and Non-CoEs.

4.4.2 Students' entry qualification

According to the ministry of Education Science and Technology the entry points to TVET courses in Diploma was C- and D+ in certificate level, whether in centres of

excellence or non-centres of excellence. The research sought to establish the students' entry point to courses under study. The study findings were as shown in Table 4.7.

Table 4.7 Influence of the entry qualification in students' performance

	Centres of Excellence						Non-centres of Excellence					
	Students		Instructors		Principals		Students		Instructors		Principals	
	(f)	%	(f)	%	(f)	%	(f)	%	(f)	%	(f)	%
Influenced	29	100	14	100	3	100	21	84.0	9	66.7	2	100
Not influenced	0	0.0	0	0.0	0	0.0	4	16.0	4	33.3	0	0.0
Total	29	100	14	100	3	100	25	100	12	100	2	100

From Table 4.7 100 percent of students, instructors and principals indicated that students' entry points influenced student performance in centres of excellence. The same was echoed in non-centres of excellence by 84 percent students, 66.7 percent instructors and 100 percent principals. These findings were a clear indication that students' characteristics on entry in CoEs and non-CoEs influenced their performance in national examination.

Further, the respondents requested to indicate to indicate the minimum entry qualification for students in CoEs and non-CoEs the results were as presented in table 4.8.

Table 4.8 Minimum entry qualification of students in TVET

Program	CoEs						Non-CoEs					
	D		D+		C-		D		D+		C-	
	F	%	F	%	F	%	F	%	F	%	F	%
Mechanical Engineering	12	85.7	2	14.3	-	-	11	91.7	1	8.3	-	-
Electrical and Electronic Engineering	13	92.9	1	7.1	-	-	12	100	-	-	-	-
Automotive Engineering	8	57.1	5	35.7	1	7.1	10	83.3	2	16.7	-	-
Applied Engineering	7	50	4	28.6	3		8	66.7	2	16.7	2	16.7
Building and Civil Engineering	6	42.9	3	21.4	5	35.7	7	58.3	3	25	2	16.7
Mean		65.7		21.4		8.6		80.0		13.3		6.7

According to information contained in Table 4.8, an average of 65.7 percent of the students in the Centres of excellence and 80 percent of their counterparts in Non-Centres of excellence entered technical training institution with a mean grade of D in various technical course. These findings were an indication that majority of the students in both CoEs and Non-CoEs had equal entry qualification. Therefore, entry qualification in Coes and Non-Coes did not influence their performance in national examinations.

4.5 Influence of the competence of Instructors on students' performance in examination

According to the second objective, the study sought to determine the influence of the instructors' competence on students' performance. This was done through establishing the number of instructors in each of the programs under study, their highest academic qualifications, rates at which they attended refresher courses, the methods they used to instruct students, and the respondents' opinion on the instructors' mastery and delivery of the content

4.5.1 Number of instructors in each program

The study sought to establish the number of instructors in the programs under study.

The findings were as in Table 4.9.

Table 4.9 Number of Instructors in Each Program

	Centres of Excellence								Non-Centers of Excellence							
	Mechanical		Electric and Electronic		Automotive		Applied Sciences		Mechanical		Electric and Electronic		Automotive		Applied Sciences	
	(f)	%	(f)	%	(f)	%	(f)	%	(f)	%	(f)	%	(f)	%	(f)	%
Principal																
0 – 10	1	33.3	-	-	3	100	-	-	1	50.0	2	100.0	2	100.0	2	100.0
11-20	2	66.7	2	66.7	-	-	1	33.3	1	50.0	-	-	-	-	-	-
Over 21	-	-	1	33.3	-	-	2	66.7	-	-	-	-	-	-	-	-
Total	3	100.0	3	100.0	3	100.0	3	100.0	2	100.0	2	100.0	2	100.0	2	100.0
Instructors																
<10	7	50	-	-	2	14.3	7	50	3	25.0	2	16.7	5	41.7	10	83.3
11-20	7	50	9	64.3	8	57.4	7	50	7	58.3	4	33.3	6	50.0	2	16.7
Over 21	-	-	5	35.7	4	28.6	-	-	2	16.7	6	50.0	1	8.3	-	-
Total	14	100.0	14	100.0	14	100.0	14	100.0	12	100.0	12	100.0	12	100.0	12	100.0

According to information contained in Table 4.9, 33.3 percent of the Principals indicated that in CoEs Mechanical engineering had less than 10 instructors and 100 percent said the same on Automotive. 66.7 percent said that mechanical had 11-20 instructors while the same number echoed the same on Electronics. 33.3 percent indicated that Applied sciences had 10-20 while 66.7 percent said it had over 21 instructors. On the side of non-centres, 50 percent of the principals indicated that Mechanical engineering had less than 10 instructors as the same percentage said the same on Electronics, Automotive and Applied sciences. On the side of the instructors,

50 percent of them indicated that Mechanical had less than 10 instructors while 50 percent said that Electronics, Automotive and Applied Sciences had between 11-20 instructors but 50 percent of them didn't respond on the three courses. On the side of non-CoEs, 25 percent of the instructor indicated that Mechanical had less than 10 instructors and this was echoed by 16.7 percent on electronics and 83.3 percent on Applied sciences. 58.3 percent indicated that Mechanical had 11-20 as the same was said about Electronics, Automotive and Applied sciences. In general all the programs were represented though Automotive and Mechanical are not well staffed in both CoEs and non-CoEs. Thus, their influence on students' performance in national examinations

4.5.2 Instructors' highest academic qualification

Findings on the academic qualification of the instructors were as presented in Table 4.10

Table 4.10 Academic qualification of Instructors

	Centers of Excellence								Non-Centers of Excellence							
	Mechanical		Electric and Electronic		Automotive		Applied Sciences		Mechanical		Electric and Electronic		Automotive		Applied Sciences	
	(f)	%	(f)	%	(f)	%	(f)	%	(f)	%	(f)	%	(f)	%	(f)	%
Principal																
PhD	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Masters'	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Bachelor	1	33.3	2	66.7	-	-	1	33.3	1	50	2	100	-	-	1	50
Diploma	2	66.7	1	33.3	3	100	2	66.7	1	50	-	-	2	100	1	50
Total	3	100.0	3	100.0	3	100.0	3	100.0	2	100.0	2	100.0	2	100.0	2	100.0
Instructors																
PhD	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Masters'	3	21.4	2	14.3	-	-	-	-	-	-	-	-	3	25	-	-
Bachelor	7	50	8	57.1	7	50	7	50	2	16.7	6	50	3	25	6	50
Diploma	4	28.6	4	28.6	7	50	7	50	10	83.3	6	50	6	50	6	50
TOTAL	14	100	14	100	14	100	14	100	12	100	12	100	12	100	12	100

From Table 4.10, the CoEs, 66.7 of the principals indicated that instructors handling applied sciences had Diploma certificate. 33.3 percent indicated that instructor in all the courses under study had Bachelor's degree while 100 percent of the principals indicated that instructors handling automotive were diploma holders.. On the non-CoEs, 33.3 percent said instructors teaching mechanical and applied science had bachelor degree while 66.7 percent said Automotive teachers had Bachelors.66.7percent said instructors in mechanical, automotive and applied had Bachelors degree as 33.3 concurred with them on Electronics. On the instructors' side in CoEs, 50 percent indicated that instructors teaching mechanical, Electronics and Applied science had Bachelors degree and 25 percent said the same in automotive. 25

percent said instructors in mechanical and automotive had Diplomas while 50 percent said the same on Automotive and Applied sciences. In the non-CoEs, 20 percent of instructors reported that instructors in mechanical Electronics and Applied sciences had Bachelors degree while 40 percent said the same on Electronics and applied sciences. 20 percent of the instructors in non-CoEs never responded. The findings above show that the majority of instructors in CoEs Bacholers qualification and very few had Diplomas while in the non-Cues the majority had Diplomas and a few had Bachelor’s degrees

4.5.3 Instructors’ teaching experience

The study sought to establish the experience of the instructors in their areas of specialization and the findings were as in Table 4.11.

Table 4.11 Instructor’s teaching Experience.

	Centers of Excellence				Non-Centers Of Excellence			
	Principals		Instructors		Principals		Instructors	
	(f)	%	(f)	%	(f)	%	(f)	%
1 – 5 years	0	0.0	2	14.3	0	0.0	2	16.7
6 – 10 years	0	0.0	2	14.3	0	0.0	4	33.3
10 – 20 years	2	66.7	6	42.8	1	50.0	5	41.7
Over 20 years	1	33.3	4	28.6	1	50.0	1	8.3
Total	3	100.0	14	100	2	100.0	12	100.0

As shown in the findings the CoEs, 66.7 percent of the principals indicated that instructors had taught for 10-20 years and 40 percent of instructors concurred with them. 25 percent of the instructors said they had taught for 1-5 years and 20 percent said they had 6-10year experience 33.3 percent of the principals and 25 of the

instructors said instructors had taught for over 20 years. On the side of non-CoEs 66.7 percent of principals and 41.7 percent of instructors said instructor had 10-20 years of experience while 60 percent of instructors said they had 6-10 years of experience. Only 33.3 of the principals said that the instructors had over 20 years of experience. The above findings showed that instructors from both CoEs and non-CoEs had a good experience in their areas of specialization.

4.5.4 Rate of attendance to refresher courses by instructors

The study sought to establish the rate at which the instructors attended the refresher courses to update their knowledge and skill and the following responses were presented in Table 4.12.

Table 4.12 Attendance to refresher courses

	Centers of Excellence				Non-Centers of Excellence			
	Principals		Instructors		Principals		Instructors	
	(f)	%	(f)	%	(f)	%	(f)	%
Twice a year	0	0.0	2	14.3	0	0.0	0	0.0
Once a year	2	66.7	8	57.1	0	0.0	1	8.3
Once in 2 years	1	33.3	4	28.6	1	50.0	5	41.7
Not at all	0	0.0	0	0.0	1	50.0	6	50
Total	3	100	14	100	2	100	12	100

From the findings in Table 4.12, in CoEs 66.7 percent of the principals indicated that instructors attended refresher course ones a year and this was echoed by 57.1 percent of instructor. In non-CoEs 66.7 of the principals and 50 percent of the instructors indicated that instructors did not attended refresher courses at all. From the findings

it's evident that instructors from CoEs attended refresher courses more than those from the non-CoEs.

4.5.5 Method of instruction

The study sought establish the method the instructors used as shown in the Table 4.13

Table 4.13 Method of Instruction

Method	Centers of Excellence						Non-Centers of Excellence					
	Students		Instructors		Principals		Students		Instructors		Principals	
	(f)	%	(f)	%	(f)	%	(f)	%	(f)	%	(f)	%
Lecture	0	0.0	0	0.0	0	0.0	1	4.0	0	0.0	0	0.0
Practice	0	0.0	0	0.0	0	0.0	2	8.0	0	0.0	0	0.0
Both	29	100	14	100	3	100	22	88.0	12	100	2	100
Total	29	100	14	100	3	100	25	100	12	100	2	100

As shown in table 4.13, 100 percent of both principals and instructors and students in CoEs indicated that instructors used both practical and lecture methods to teach. The same sentiments are shared by 88.8 percent of the students, 100 percent of instructors and 100 percent of principals from non-COEs but only 8.0 percent said they used practical method as was said by students. The methods of instruction was agreed upon by the respondents from CoEs and Non-CoEs to influence students' performance in national examination

4.5.6 Influence of instructors' competence on student performance

The study investigated the influence of the competence of instructors on students' performance and the findings were as in table 4.14.

Table 4.14 Influence of Instructors competence on student performance

	Centers of Excellence				Non-Centers of Excellence			
	Instructors		Principals		Instructors		Principals	
	(f)	%	(f)	%	(f)	%	(f)	%
Highly influenced	4	28.6	1	33.2	5	41.7	2	100
Moderately influenced	3	21.4	0	0.0	6	50.0	0	0.0
No Influenced	7	50.0	2	66.7	1	8.3	0	0.0
Total	14	100	3	100	12	100	2	100

From Table 4.14, 50 percent of the instructors and 66.7 percent of the principals indicated that instructors competence in CoEs highly influenced students' performance in national examinations. This information concurred with 50 percent of the instructors and 100 percent of the principals in non-CoEs. These findings were an indication that instructors competence highly influenced students' performance in national examination in both centres of excellence and Non-centres of Excellence.

4.6 Influence of teaching and learning facilities on student performance

The third objective tried to establish how the quality of teaching and learning facilities influenced student's performance in TVET national examination in TVET institutions centers and non-centers of excellence in selected programs in Nairobi County. The variables to show how teaching and learning facilities influence students' performance were used to evaluate the relationship between these two variables. This section analyses data on this issue.

4.6.1 Sufficiency of the facilities

The study tried find out the influence of availability and sufficiency of the teaching and learning facilities on student’s performance in the national examination in the Centres and Excellence and Non-centres of Excellence. The respondents were issued with the following scale to evaluate the level of sufficiency of teaching and learning facilities in S = Sufficient, IS = Insufficient, NA = Not Applicable and the findings were as presented in Table 4.15.

Table 4.15 Sufficiency of teaching and learning facilities

	Centres of Excellence						Non-centres of Excellence							
	F	S		IS		NA		F	S		IS		NA	
Students	(f)	%	(f)	%	(f)	%	(f)	%	(f)	%	(f)	%	(f)	%
Classrooms	29	100	-	-	-	-	25	100	-	-	-	-	-	-
Laboratory	29	100	-	-	-	-	23	92	1	4	1	4	1	4
Workshop	26	89	3	11	-	-	2	8	22	88	2	4	2	4
Library	21	72	8	28	-	-	8	32	17	68	-	-	-	-
Instructors														
Classrooms	14	100	-	-	-	-	10	83	2	17	-	-	-	-
Laboratory	14	100	-	-	-	-	2	17	10	83	-	-	-	-
Workshop	14	100	-	-	-	-	4	33	8	67	-	-	-	-
Library	14	100	-	-	-	-	4	33	8	67	-	-	-	-
principals														
Classrooms	3	100	-	-	-	-	2	100	-	-	-	-	-	-
Laboratory	2	67	1	33	-	-	1	50	1	50	-	-	-	-
Workshop	3	100	-	-	-	-	-	-	1	50	1	50	1	50
Library	3	100	-	-	-	-	-	-	2	100	-	-	-	-

From Table 4.15, 100 percent of the students indicated that the facilities in the CoEs were sufficient: classrooms, laboratory and workshop but 89 percent indicated that the library was inefficient. On the other hand, 100 percent of the students from the non-

centres of Excellency indicated that classrooms were sufficient, 88 percent said the laboratory was sufficient while 12 percent said they not available. Also, 88 percent reported that the workshops were insufficient, but 12 percent said they were not available. According to 100 percent of the instructors reported that in the CoEs classrooms, laboratories and workshops were sufficient, and 72 percent echoed the same sentiments on the library.80 percent of instructors from the non-CoEs said classes were sufficient, but 20 percent said they were insufficient, 60 percent of them reported that workshops were sufficient while 40 said they were insufficient, 40 percent of the instructors indicated that the library was sufficient but the other 60 percent said otherwise.

On the side of the principals, 100 percent indicated that the CoEs had sufficient classes as 100 percent echoed the same on workshops and library while only 67 percent said the laboratory was sufficient as 30 percent said they were insufficient. In the non-CoEs 100 percent of the principals indicated that classes were sufficient, 100 percent said that the laboratory and the library were insufficient while 70 percent echoed the same on the workshops. From the Table 4.15 there is a clear indication that the centres of excellence are fairly equipped with facilities than the non-centres of excellence. Hence the difference in students' performance in national examinations. The findings implied that teaching and learning facilities were sufficient to enhance students' performance in national examinations.

4.6.2 Equipped teaching and learning resources in CoEs and non-CoEs

The study sought to establish the adequacy of teaching and learning resources in the facilities in the Centres of Excellence and Non-centres of Excellence in the study area. The responses were presented in Table 4.16.

Table 4.16 Equipped teaching and learning facilities

Facility	Centres of Excellence						Non-Centres of Excellence					
	W.E		N.W.E		Totals		W.E		N.W.E		Totals	
Students	(f)	%	(f)	%	(f)	%	(f)	%	(f)	%	(f)	%
Classrooms	29	100	-	-	29	100	25	100	-	-	25	100
Laboratory	18	78	11	22	29	100	3	9	22	91	25	100
Workshop	29	100	-	-	29	100	5	15	20	85	25	100
Library	15	83	4	17	29	100	4	12	21	88	25	100
Instructors												
Classrooms	14	100	-	-	4	100	9	75	3	25	12	100
Laboratory	13	75	1	25	4	100	6	50	6	50	12	100
Workshop	14	100	-	-	4	100	3	25	9	75	12	100
Library	7	50	7	50	4	100	3	25	9	75	12	100
Principals												
Classrooms	3	100	-	-	3	100	1	50	1	50	2	100
Laboratory	2	67	1	33	3	100	1	50	1	50	2	100
Workshop	2	67	1	33	3	100	1	50	1	50	2	100
Library	1	33	2	67	3	100	1	50	1	50	2	100

From Table 4.16 above 100 percent of the students in the CoEs reported that classes were well equipped, the same percentage concurred with them on workshops while 78 percent echoed the same on laboratory and 83 percent on the library. On the other hand, 100 percent of the students from the non-CoEs reported that classes were well equipped while 91 percent said that laboratory was not well equipped, 85 percent said that workshops were not well equipped and 88 percent said the same on library. On the same note, 100 percent of the instructors from the CoEs reported that classes were

well equipped, the same percentage echoed the same on workshops while 75 and 50 percent said the same on laboratory and library.

On the non-CoEs 60 percent of the instructors reported that classes were well equipped while 40 percent felt the same on laboratory, 20 percent on workshops and laboratory. 80 percent said library was not well equipped, the same percentage concurred with them on workshops and 40 percent said the same on classrooms. 100 percent of the Principals indicated that the classes in the CoEs were well equipped, 67 percent said the same on laboratory and workshops while 33 percent concurred with them on library. 67 percent reported that laboratory and workshops were not well equipped. On the side of non-CoEs, 67 percent reported that classes and workshops were well equipped, only 33 percent shared the same sentiments on laboratory. 100 percent of them reported that libraries were not well equipped, 33 percent shared the same sentiment on library, 67 percent on laboratory and 33 percent on classrooms. From the study findings the facilities in the CoEs were well equipped when comparing them with those of Non-CoEs

4.6.3 Ratio of Teaching and Learning Resources to students

The study investigated on the ratio of teaching and learning resources to the students and presented the findings as shown in Table 4.17.

Table 4.17 Ratio of students to teaching and learning resources

Ratio	Centres of Excellence						Non-Centres of Excellence					
	Students		Instructors		Principals		Students		Instructors		Principals	
	(f)	%	(f)	%	(f)	%	(f)	%	(f)	%	(f)	%
1:1	4	13.8	2	14.3	0	0.0	5	20.0	1	8.4	0	0.0
1:2	7	24.1	2	14.3	1	33.3	9	36.0	4	33.3	0	0.0
1:over 3	18	62.1	10	71.4	2	66.7	11	44.4	7	58.3	2	100
Total	29	100	14	100	3	100	25	100	12	100	2	100

From the data contained in Table 4.17 the results indicated that 62.1 percent of the students from the CoEs indicated that the ratio of resources to students was 1: over 3. This was echoed by 71.4 percent of instructors and 66.7 percent of the principals. On the side of non-CoEs 44.4 percent of the students indicated that resources were shared amongst over 3 students, the same was reported by 58.3 percent of the instructors and 100 percent of principals. This findings shows that resources in the CoEs and non-CoEs the teaching and learning resources were not adequate as the best they could share was among 5 students. This findings implied that the adequacy of teaching and learning facilities contribute to students performance significantly.

4.6.4: Level of the influence of facilities on students' performance

In this sub-section the study sought to determine the level teaching and learning facilities influence the performance and Table 4.18 showed the study findings.

Table 4.18 Influence of teaching and learning facilities on student performance

	Centres of Excellence						Non-Centres of Excellence					
	Students		Instructors		Principals		Students		Instructors		Principals	
	(f)	%	(f)	%	(f)	%	(f)	%	(f)	%	(f)	%
Highly Influenced	14	48.3	12	85.7	3	100	14	56.0	10	83.3	2	100
Influenced	11	37.9	2	14.3	0	0.0	11	44.0	2	16.7	0	0.0
Not Influenced	4	13.8	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Total	29	100	14	100	3	100	25	100	12	100	2	100

According to findings presented in Table 4.18, 48.3 percent of the students from centres of excellence, 85.7 percent of instructors and 100 percent of the principal stated that teaching and learning facilities highly influenced student performance in examinations. On the other hand, this information was backed by 56 percent of the students in the non-Centres of Excellence and the same idea was shared by 83.3 percent of instructors and 100 percent of the principals. These study findings clearly showed that teaching and learning facilities highly influenced students' performance in examinations. Therefore, the study can indicate that there was a high relationship between the teaching and learning facilities in the CoEs and non-CoEs and students' performance in national examinations.

4.7 Cross examination of national examination results 2013-2015

The study cross-examined national examination results in CoEs and Non-CoEs in the years 2013-2015 in table 4.19

Table 4.19 Cross-examination of examination results in CEOEs and Non- CoEs

NTTI		Thika TTI			
Year	Applied Science	Applied Science			
2013	62.6	46.7			
2014	69.2	40.0			
2015	73.0	61.14			
Kabete	Electrical and Electronic	Mechanical	KIST		Thika TTI
			Electrical	Mechanical	Electronic
2013	88.24	31.3	26.5	41.5	39.4
2014	87.5	46.2	50.2	56.3	50.1
2015	100	65.2	45.6	55.2	51.3
Kinyanjui	Automotive	THIKA			
		Automotive			
2013	43.0	35.0			
2014	65.0	41.0			
2015	72.0	62.6			

From Table 4.19 Nairobi Technical Institute had applied sciences as its center of excellence, Kabete National Polytechnic had Electronics and Kinyanjui had automotive. From the performance point of view, all centres of excellence posited positive and better examination results in 2013-2015 when compared to non-centres of excellences. However, in the non-centres, students' performance in national examinations registered lower mean scores in technical courses offered. For instance, performance in applied sciences offered in NTTI (CoEs) had a mean score of 73.0 in the year 2015 while in Thika TTI (Non-CoEs) scores a mean of 61.14 in the same year. The same situation was established between Kabete TTI (CoEs) in Electrical and Electronics that scored a mean of 100 while KIST (Non-CoEs) scored a mean score of 51.3. These findings showed that the students' performance in technical courses offered in CoEs were better performed than in their Non-CoEs counterparts offering the same kind of courses. Therefore, the students' performance was found to be influenced by the center of excellence and non-centres of excellence.

4.8 Challenges that hindered students' Performance

From the study, students indicated that inadequate facilities were a challenge that hindered students' better performance. On the same point all the principals felt that inadequate instructors was a challenge that hindered students' performance, this was also echoed by some of the students. On the other hand, most of the instructors indicated that low entry points of students hindered performance while this was supported by 3.8 percent of the students. More so most of the principals indicated that socio-economic factors influenced students' performance and this was further supported by both students and instructors

4.8.1 Measures to address the Challenges

According to the findings, different ideas on how to address the challenges were highlighted by the respondents and they were that; government should increase funding to the TVET and thus enable employment of more instructors. The students and instructors were of the ideas that more facilities should be provided and the ones available should be fully equipped with relevant facilities that facilitate smooth learning. The students also advocated for more bursaries to facilitate their learning on the TVET. The instructors were of the view that they should be given paid study leave to upgrade their studies and more refresher courses should be facilitated. The principals and instructors also advocated for improved syllabuses that are relevant to the modern technology to enable students acquire excellent skills in their programs. The students further advocated for more accommodation through structures such as hostels. On the challenge of low entry points, the principals indicated that this could only be addressed by ensuring that the TVET remained strict when admitting students and ensured that required entry grades were adhered to.

CHAPTER FIVE

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

The chapter discussed the study's summary, conclusions and recommendations. It covered introduction, study summary, major findings, conclusions, recommendations and suggestions for further reading.

5.2 Summary of the study

The study investigated the influence of TVET centres and non-centres of excellence on students' performance in national examination in Nairobi County. The study was steered by three research objectives that included; establishing the influence of physical facilities on performance of students in national examinations, to establish the influence of the competence of instructors on students' performance in national examinations and to establish the influence of students' entry characteristics on students' performance in national examinations. The related literature from different scholars revealed that there was a significant relationship between students' entry characteristics, instructor competence and quality of facilities in learning institution that promoted performance of students in examination.

The study used descriptive research design in gathering information, summarizing and interpreting it. The target population was three public TVET institutions in Nairobi County. Purposive sampling was used to sample the study respondents based on their distribution in Centres of Excellence and Non-centres of Excellence. The three principals in the institutions participated in the study. Also, fifteen instructors and thirty third year students who were considered to have adequate information required by the study equally distributed CoEs and non-CoEs respectively. The research

instruments used were questionnaires. The data collected was analysed by use of descriptive statistics of percentages and frequencies. Data was presented using frequency table.

5.3 Major findings of the study

This section discussed the major findings of the study. It covered major findings based on each objective of the study; influence of facilities on students' performance in the examination, influence of competence of instructors on students' performance and influence of standard entry points in students' performance in examination.

5.3.1 Influence of students entry points on students' performance in national examination

From Table 4.6, the study established that 88.8 percent of students, 100 percent of instructors and 100 percent of principals indicated that academic qualification was used to admit students to TVET courses in COEs. Also 94 percent of students, 100 percent of instructors and 100 percent of principals concurred with those in in COEs. On students entry qualification, it was established by MOEST that students to diploma courses scored C- and those to certificate scored D+ as entry qualification to either COEs or non-COEs.

100 percent of all respondents in COEs indicated that student's entry qualifications influenced students' performance and 88.2 percent and 100 percent of instructors and principals said the same.

5.3.2 Influence of instructors' competence on student performance in national examinations

From Table 4.10, it was established that in CoEs, 100 percent of instructors indicated that mechanical engineering had less than 10 instructors. 100 percent said the same on automotive. 66.7 percent indicated that mechanical had 10-20 instructors. On non-

CoEs, 67 percent of principals said mechanical had less than 10 instructors same with applied and electronics. 50 percent of instructors indicated that mechanical had less than 10 instructors, 50 percent indicated that electronic and applied sciences had 10-20 instructors.

In Table 4.12, it was established that in CoEs, principals indicated that 33.3 percent of instructors handling applied sciences had PhDs and al others had masters. In non-CoEs, principals indicated that instructors teaching applied and mechanical had bachelor's degree. 50 percent of instructors indicated that instructors of mechanical, electronics and automotive in CoEs had a bachelor's degree.

Table 4.12, findings established that in CoEs, 67 percent of principals indicated that instructors had 10-20 years of experience in their areas of specialization.

On non-CoEs, 66.7 percent of principals and 40 percent of instructors said instructors had 10-20 years of experience. 60 percent of instructors said they had 6-10 years of experience.

On attendance to refresher courses, in table 4.13, 66.7 percent of principals indicated that instructors attended the once in two years and was echoed by 50 percent of instructors. Table 4.14 established that 100 percent of principals and instructors indicated that instructors in COEs used both lectures and practical methods to teach. Same was echoed in non-COEs by 100 percent of principals, instructors and students In table 4.15 100 percent of respondents responded that instructors competence influenced students' performance highly.

5.3.3 Influence of teaching and learning facilities on students' performance in national examination

From table 4.16, the study established that 100 percent of students from COEs indicated that the facilities like classrooms, laboratory and workshops were sufficient

but 89 percent indicated that they were insufficient. From the non-COEs, 100 percent of students indicated that classes were sufficient but 88 percent indicated that laboratories were sufficient, and 88 percent indicated that workshops were insufficient. 12 percent said workshops were not available. 100 percent of instructors indicated that COEs had sufficient classrooms, laboratories and workshops, and 75 percent said the same on library, 60 percent of the instructors said that the workshops were sufficient in non-COEs but 40 percent said that they were sufficient. 100 percent of instructors indicated that classes, libraries and workshops were sufficient in COEs and 67 percent said laboratories were sufficient. In non-COEs 100 percent of principals indicated that classes were sufficient and 70 percent of them said workshops, laboratories and libraries were insufficient.

From table 4.17, it was established that 100 percent of students indicated that students were well equipped, 78 percent echoed the same on workshops and 83 percent on laboratories. In COEs 100 percent of them indicated that classes in non-COEs were well equipped but 85 percent and 82 percent, said that workshops and laboratories were not well equipped. 100 percent of the instructors indicated that classes and workshops were well equipped. 75 percent and 50 percent, said same on laboratories and libraries. 60 percent of instructors indicated that classes were well equipped but 80 percent showed that library and workshops were not well equipped.

100 percent of principals in COEs indicated that classes are well equipped and 67 percent said the same on laboratories. 67 percent reported that laboratories and workshops were not well equipped. On non-COEs, 67 percent of them reported that classes and workshops were well equipped, 100 percent indicated that libraries were not well equipped.

Findings in table 4.8 established that in COEs, 75 percent of students indicated that the ratio of resources to students was 1:5, 50 percent of instructors and 100 percent of principals indicated same in non-COEs, 59 percent of students that resources were shared amongst over 6 students, same was indicated by 60 percent instructors and 100 percent principals.

It was established that in table 4.9 that 50 percent of instructors, 100 percent of principals that facilities highly influenced standards performance in COEs. 89.9 percent of students indicated that facilities influenced standards of performance. On non-COEs 100 percent of principals, 83.3 percent of students and 40 percent of instructors indicated that facilities indicated students' performance.

5.4 Conclusions of the study

Based on the research findings, the researcher concluded that the teaching and learning facilities were available but then the sufficiency is wanting as seen from table 4.6. They have affected the students' performance positively as indicated by respondents in table 4.9 though the government needs to do more. This is evident by the ratio of sharing of equipment of 1:5 as shown on table 4.8.

There was a correlation between the instructors' competence and students' performance, as is indicated in Table 4. The competence of instructors is bound to affect the student performance. As observed the instructors are well qualified as their qualifications range from Diploma-PhD but their refresher courses are not enough to have positive outcome on the student performance. The evolution in technology is so fast that refresher courses for instructor to keep themselves up-to-date and more knowledgeable are very necessary.

There was a high correlation between student entry points and their performance. This can be attributed to reluctance to strict measures by the TVET management on their

entry points. Thus students with very low grades (D+) were enrolled thus affecting the entire student performance. The government and the stakeholders need to improve on the entry qualification to various courses as this also affects the end results in the examination.

It was also concluded that programs that have been accorded centers of excellence namely mechanical and Automotive, Electrical and Electronics and Applied Sciences in the institutions have an increase in performance though not significant in the years 2013-2015 as compared to non-centers of excellence which seem to register inconsistent performances in the years 2013-2015. This was an evidence that the centers of Excellence were working towards promoting performance in TVET institutions but at a slow pace as shown in the performance analysis 2013- 2015 in tables 4.18

5.5 Recommendations of the Study

In view of the findings and conclusion of the study a number of recommendation were suggested:

- i) The government should enhance the quality and delivery of TVET programs through expanding funding for TVET to increase enrolment and facilitate efficient learning material and facilities. Also they should eliminate the duplication of programs and resources so as to improve graduates employability by enabling industries lend curriculum development.
- ii) Adequate and qualified instructors to TVET should be made a key priority by both national and county government. Teacher professionalism should be enhanced through capacity building, adequate funds should also be provided for the in-service course training and workshop. County government of Nairobi should play more proactive role towards this endeavor.

- iii) There was need to increase the amount of bursaries to enable students from poor backgrounds to access education besides enhancing their retention in the institution and the management should strictly follow the required entry points to admit the right students to the programs.

5.6 Suggestions for Further Study

Based on the findings, the researcher suggested the following areas should be explored as basis for study.

- i) The establishment of roles of TVET on human resource development.
- ii) The study suggests that similar research be done on TVET in other counties also.
- iii) Study be done on the relevance of curriculum of TVET in production of employable graduates.

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APPENDIX I

QUESTIONNAIRE FOR PRINCIPALS

Introduction

This questionnaire is designed to determine the influence of Centers and non-centers of Excellence on students' performance in Technical and Vocational Education and Training at National examination. Do not write your name anywhere since all responses are confidential.

SECTION A: Background

1. Are you a trained technical teacher by profession? Please tick (✓) where appropriate

Yes []

No []

2. From Question (1) above, if yes, how often do you attend TVET , In-service, Training Course ,Workshops and Seminars .Tick (✓) against the appropriate choice

Twice a year []

Once a year []

Ounces in two years []

3. For how long have you taught in TVET Institution

1 to 5 Years []

6 to10 Years []

11 to15 Years []

16 to 20 Years []

Above 21 Years []

4. For how long have you been a principal in the current station /Institution

1 to 5 Years []

6 to 10 Years []

11 to 15 Years []

16 to20 Years []

Above 21 Years []

5. Please tick the appropriate choice to show your highest academic qualification

PhD []

Masters degree []

Post Graduate Diploma []

Bachelors Degree []

Diploma []

Others Specify []

6. Listed below are courses offered in TVET Institution .Tick (✓) against those which are currently offered in your Institution.

Mechanical Engineering []

Electrical and Electronic Engineering []

Automotive Engineering []

Applied Sciences []

Building and Civil Engineering []

7. Was your Institution identified as a Center of Excellence?

- Yes [] No []
8. From the above question ,tick (✓) in the space provided the program in which it was accredited a Centre of Excellence
- Mechanical Engineering []
- Electrical and Electronic Engineering []
- Automotive Engineering []
- Applied Sciences []
- Building and Civil Engineering []

SECTION B Facilities Information

1. Below is a list of basic faculties in a TVET Institution .Please tick (✓) their availability in your Institution according to the level of Sufficiency.

Facility	Very. Sufficient	Sufficient	Insufficient	Very Insufficient
Classroom				
Laboratories				
Library				
Workshop				

2. Below is a list of teaching and learning resources in the facilities you have identified above. Please tick () against the statement that best explains their adequacy in the Institution

Resources	Very Adequate	Adequate	Inadequate	Very Inadequate
Spacious & well-lit classrooms				
Well-equipped Laboratory				
Well stocked Library				
Equipped Workshop				

3. In the spaces provided tick () to show the ratio of the teaching and learning resources like books , working tools, desks , Laboratory tools etc. . to the Students

- 1:1 []
- 1:5 []
- 1:10 []
- 1: over 10 []

In the space provided , please indicate the students examination result in the last three years:

YEAR PROGRAM	2013	2014	2015
Mechanical Engineering			
Electrical & Electronic Engineering			
Automotive Engineering			
Applied Sciences			
Building and Civil Engineering			

4. Please tick (√) in the space provided, the statement that best describes the influence of the facilities available on the examination results shown in 4 above

- Highly Influenced []
 Influenced []
 Slightly Influenced []
 Not Influenced []

SECTION C; Information on instructors

1. How many TVET Instructors do you have in your Institution? Tick (√) the appropriate choice

- 1-5 []
 6-10 []
 11-15 []
 More than 16 []

2. In the spaces provided, indicate the number of Instructors in each program listed below.

Program	No. of Instructors
Mechanical Engineering	
Electrical and Electronic Engineering	
Automotive Sciences	
Applied Sciences	
Building and Civil Engineering	

3. In the space provided tick (√) the highest qualification of the Instruction handling the listed programs.

Qualification Programs	PHD	Masters Degree	Post-graduate Diploma	Diploma	Others Specify
Mechanical Engineering					
Electrical and Electronic Engineering					
Automotive Sciences					
Applied Sciences					
Building and Civil Engineering					

4. How do you rate the attendance of the Instructors to TVET workshops, Seminars or refresher Courses in relation to their areas of Specialization? Tick (\checkmark) the appropriate choice

- Twice a year []
- Once a year []
- Once in two years []
- Not at all []

5. In the space provided, indicate the Instructors' year of experience in their fields of specialization?

- 1-5 years []
- 6-10years []
- 11 years and over []

6. In the space provided , tick (\checkmark) the method used for instruction by the Instructors:

- Lecture Method []
- Practical Method []
- Both []

7. How can you describe the relationship between the Instructors and Students

- Very Friendly []
- Friendly []
- Not Friendly []

8. In the space provided, tick (\checkmark) the statement that best describes the influence of the Instructors Competence on the examination results shown in Section A.

- Very Much Influenced []
- Influenced []
- Slightly Influenced []
- Not Influenced []

SECTION D Information on student Entry Characteristics

1. Please indicate by ticking (√) the criteria used to admit students to the above shown programs.

- Persons Interested []
 Academic Qualification []

2. From question one above, if academic qualification please indicate in the space provided the minimum entry qualification in each program.

Program	Entry Qualification
Mechanical Engineering	
Electrical and Electronic Engineering	
Automotive Engineering	
Applied Engineering	
Building and Civil Engineering	

3. In the space provided, please indicate the number of students in each the programs shown and their levels.

Level in Year Program	1st year	2nd year	3rd year
Mechanical Engineering			
Electrical and Electronic Engineering			
Automotive Engineering			
Applied Sciences			
Building and Civil Engineering			
Total			

4. In the space provided tick (√) the statement that best describes the influence of students entry characteristics on the examination results shown above in section one

- Highly Influenced []
 Influenced []
 Slightly Influenced []
 Not Influenced []

5. From the challenges tick against the ones you think are impacting negatively on the Institution thus hindering better performance than what is shown in section one above

- i) inadequate facilities []
 ii) Inadequate instructors []
 iii) Social-Economic factors []

6. Suggest three measures that can be taken to solve the challenges listed above :

- i) _____
 ii) _____
 iii) _____

APPENDIX 11

QUESTIONNAIRE FOR INSTRUCTORS

Introductions

Kindly fill the questionnaire by ticking (✓) the appropriate response. You need not to write your name in the questionnaire as all the responses will be confidential;

SECTION A: background information

1. Are you a TVET trained teacher by profession?

- Yes []
No []

2. What is your age range?

- 20 to 25yrs []
26 to 30yrs []
31 to 35yrs []
36 to 40yrs []
Over 41 yrs. []

3. Do you reside in the institution

- Yes []
No []

4. If no, by what means do you come to school. Tick (✓) the appropriate answer.

- On foot [],
By vehicle []

5. From the above information ,how convenient is your mode of commuting to work

- Very convenient []
Convenient []
Inconvenient []
Very inconvenient []

SECTION B: information on facilities

6. Below is a list of basic facilities in a TVET institution please tick (✓) against the statement that best describes their availability in your institution according to the level of sufficiency?

Facility	Very sufficient	Sufficient	insufficient	very Insufficient
Classrooms				
Laboratory				
Workshops				
Store				
Playground				
Library				

7. Below is a list of teaching and learning resources in the facilities you've identified above please tick (✓) against the statement that best explains their adequacy in the institution.

Resources	V adequacy	adequacy	Inadequacy	V inadequacy
Spacious and well light dooms				
Well-equipped laboratory				
Well stocked library				

8. In the space provided tick (✓) to show the ratio of the teaching and learning resources like books, working tools, desks, laboratory equipment etc. to the students

- 1:1 []
 1:5 []
 1:10 []
 1: to over 10 []

9. In the space provided, please indicate the students' examination results for the Last three years in the programs indicated below.

Year program	2013	2014	2015
Mechanic engineering			
Electrical and electrical engineering			
Automotive engineering			
Applied science			
Building and civil engineering			

10. Please tick(✓) in the space provided the statement that best describes the influence of the facilities available on the students examination performance as shown in No 4 above

- Highly influenced []
 Influenced []
 Slightly influenced []
 Not influenced []

SECTION C: instructor's information

11. How many TVET instructors are in the institution? Tick the appropriate choice

- 1-5 []

- 6-10 []
- 11-15 []
- Over 16 []

12. In the space provided indicate by ticking the number of instructors in each program listed below

Program	No. of Instructors
Mechanical engineering	
Automotive engineering	
Electrical and electronics engineering	
Applied sciences	
Building and civil engineering	

13. In the space provided tick the highest qualification of the instructors handling the listed program shown below.

Qualification program	PHD	Master's degree	Post graduate program	Diploma	Others Specify
Mechanical engineering					
Electrical and electronic engineering					
Automotive engineering					
Applied sciences					
Building and civil engineering					

14. How do you rate the instructors' attendance to TVET workshops, seminars or refresher courses in relation to their specialization area. Tick the appropriate choice.

- Twice a year []
- Once a year []
- Ones in two years []
- Not at all []

15. In the space provided tick the appropriate statement that best rates the instructors' experience in fields of their specialization.

- Very competent []
- Competent []
- Less competent []
- Not competent []

16. In the space provided tick the statement that describes the method of instruction that you apply in the teaching and learning procedures.

- Lecture method []
 Practical method []
 Both of them []

17. The influence of the instructors' competence on students' performance show above in sector on

- Very much influenced []
 Influenced []
 Slightly influenced []
 Not influenced []

18. How can you describe the instructors' relationship with the students? Tick the best choice

- Very friendly []
 Friendly []
 Not friendly []

In the space provided, tick the statement that best describes

SECTION D: Information on Students Entry Characteristics

19. In the space provided below, please indicate the number of students in each programs at various levels.

Programs and Level in year	1st Year	2ND Year	3RD Year
Mechanical engineering			
Electrical and Electronic engineering			
Automotive engineering			
Applied sciences			
Building and civil engineering			
TOTAL			

1. Please indicate by ticking the criteria used to admit students to various programs indicated above.

- Interested people []
 Academic []

2. From question 2 above if its academic qualification, please indicate in the space provided the minimum entry qualification for students to each program listed below.

Program	Entry Qualifications
Mechanical engineering	
Electrical and electronic engineering	
Automotive engineering	
Applied Sciences	
Building and civil engineering	

3. In the space provided tick against the statement that best describes then influence a student's entry characteristics on the students' performance as shown in the section one

- Highly influenced []
- Influenced []
- Slightly influenced []
- Not influenced []

4. Please tick against the challenges that the institution is facing that might be hindering better performance than what is shown above.

- i) Inadequate facilities []
- ii) Inadequate Instructors []
- iii) Social-economic factors []

5. Suggest three solutions to the challenges mentioned above

- i) _____
- ii) _____
- iii) _____

Thanks for your time. God bless you.

APPENDIX III: Questionnaire for students

Instructions.

Kindly fill the questionnaire provided by ticking(\surd) the appropriate response or write the required information you need not to write your name on the questionnaire as all the responses will be treated confidential.

SECTION A: Background Information

1. What is your gender

Male

Female

2. Please indicate your age range

20 to 25 years

26 to 30 years

31 to 35 years

Above 36 years

3 Do you recite in school?

Yes

No

4. If no from question 3 please tick the correct statement to describe the distance you travel from your area of residence

Near the institution

Far from the institution

4. Tick the statement that describes the convenience of your community.

Very convenient

Convenient

Inconvenient

Very inconvenient

5. From the list below tick against the programs offered in your institution

Mechanical engineering

Electrical and electronic engineering

Automotive engineering

Applied sciences

Building and civil engineering

6. Is your institution one of those that were identified as centres of excellence?

Yes

No

7. From 6 above if yes tick the programs in which it was accredited centres of excellence

Mechanical engineering

Electrical and electronic engineering

Automotive engineering

Applied sciences

SECTION B: INFORMATION ON FACILITIES

1. Please tick against the facilities that is available in your institution of learning

- Classroom []
 Laboratory []
 Workshop []
 Library []

20. Below is a list of teaching and learning resources in the facilities identified above, please tick against the statement that best describes their adequacy in your institution.

Resource	Adequate	Adequate	Inadequate	Inadequate
Well lit and spacious classrooms				
Well stocked spacious laboratory				
Spacious Workshop				

3. In the space provided tick to show the ratio of the teaching learning resources like books writing tools laboratory equipment etc to the students

- 1:1 []
 1:5 []
 1:10 []
 1: above []

4. In the space provided please tick against the statement that describes the influence of the facilities mentioned above to your previous examination

- Highly influence []
 Influence []
 Slight influence []
 No influence []

SECTION C: Information on Instructors

1. How many TVET instructors do you have in the program you're undertaking? Tick the best choice

- 1-5 []
 6-10 []
 11-15 []
 Over 16 []

2. How do you rate the teacher's attendance to classes for teaching?

- Very punctual []
 Punctual []
 Sometimes late []
 Always late []

3. In the space provided tick against the method used for instruction in classes

- Lecture method []

- Practical method []
- Both methods []

4. How do you rate the relationship between the instructors and the students? Tick the Appropriate statement

- Very friendly []
- Friendly []
- Not friendly []

5. How do you rate the instructors' mastery and delivery of content in their areas of Specialization

- Very efficient []
- Efficient []
- Somehow efficient []
- No influence []

SECTION D: Information on Students Entry Characteristics

1. Please fill in the space provided indicate how many you are in the program you are taking

Program	NO. of students
Mechanical engineering	
Electrical and electronic engineering	
Automotive engineering	
Applied sciences	
Building and civil engineering	

2 Which criteria was used to admit you to the program you're taking. Tick the applicable statement

- Your Interest []
- Academic qualification []

3. From question 2 above if its academic qualification, please indicate the minimum grade to the program you are taking []

4. Please tick against the statement that best describes the influence of the entry points to the program on the national examination performance.

- Highly Influence []
- Influence []
- Slightly influence []
- No influence []

5. Please state three challenges that hinder best performance in examination in your Institution

- i) Inadequate Instructors []
- ii) Inadequate facilities []

iii) Social- Economic factors []

(b) Please suggest three ways in which the challenges mentioned above can be solved

- i) _____
- ii) _____
- iii) _____

Thanks very much for your time. God bless you.

Appendix IV: Authorization letter



NATIONAL COMMISSION FOR SCIENCE, TECHNOLOGY AND INNOVATION

Telephone: +254-20-2213471,
2241349, 3310571, 2219420
Fax: +254-20-318245, 318249
Email: dg@nacosti.go.ke
Website: www.nacosti.go.ke
when replying please quote

9th Floor, Utalii House
Uhuru Highway
P.O. Box 30623-00100
NAIROBI-KENYA

Ref. No.
NACOSTI/P/16/19108/10914

Date:

3rd May, 2016

Mosoti Margaret Gesare
University of Nairobi
P.O. Box 30197-00100
NAIROBI.

RE: RESEARCH AUTHORIZATION

Following your application for authority to carry out research on *“Influence of Centers and Non Centers of excellence on students performance in Technical and Vocational Education and Training at National Examination in Nairobi County Kenya.”* I am pleased to inform you that you have been authorized to undertake research in **Nairobi County** for the period ending **29th April, 2017.**

You are advised to report to **the County Commissioner and the County Director of Education, Nairobi County** before embarking on the research project.

On completion of the research, you are expected to submit **two hard copies and one soft copy in pdf** of the research report/thesis to our office.


BONIFACE WANYAMA
FOR: DIRECTOR-GENERAL/CEO

Copy to:

The County Commissioner
Nairobi County.

COUNTY COMMISSIONER
NAIROBI COUNTY
P. O. Box 36124-00100, NBI
TEL: 341906

The County Director of Education
Nairobi County.



Appendix V: Research permit

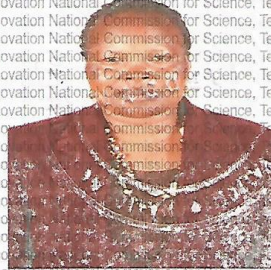
THIS IS TO CERTIFY THAT:

MS. MOSOTI MARGARET GESARE
of UNIVERSITY OF NAIROBI, 0-902
KIKUYU, has been permitted to conduct
research in Nairobi County

on the topic: INFLUENCE OF CENTERS
AND NON CENTERS OF EXCELLENCE ON
STUDENTS PERFORMANCE IN
TECHNICAL AND VOCATIONAL
EDUCATION AND TRAINING AT
NATIONAL EXAMINATION IN NAIROBI
COUNTY KENYA

for the period ending
29th April 2017.


Mosoti Margaret Gesare
Applicant's Signature


National Commissioner for Science, Technology and Innovation

Permit No.: NACOSTI/P/16/19108/10914
Date Of Issue: 3rd May, 2016
Fee Received: ksh 1000

CONDITIONS

1. You must report to the County Commissioner and the County Education Officer of the area before embarking on your research. Failure to do that may lead to the cancellation of your permit
2. Government Officers will not be interviewed without prior appointment.
3. No questionnaire will be used unless it has been approved.
4. Excavation, filming and collection of biological specimens are subject to further permission from the relevant Government Ministries.
5. You are required to submit at least two (2) hard copies and one (1) soft copy of your final report.
6. The Government of Kenya reserves the right to modify the conditions of this permit including its cancellation without notice

REPUBLIC OF KENYA

NACOSTI
National Commission for Science, Technology and Innovation

RESEARCH CLEARANCE PERMIT

Serial No. **A 8947**

CONDITIONS: see back page