

**INSTITUTIONAL FACTORS INFLUENCING QUALITY TRAINING IN  
TECHNICAL, VOCATIONAL AND ENTREPRENEURSHIP TRAINING  
IN SIAYA SUB-COUNTY REGION, KENYA**

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Requirement for the Award of the Degree of the Master of Education in  
Economics of Education, University of Nairobi**

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## **DECLARATION**

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

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This research project has been submitted for examination with our approval as University's Supervision.

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## **DEDICATION**

This project is dedicated to my wife Beatrice and children; Elton, Onyango, Junior and Stalon, my parents (deceased), brothers and sisters.

## **ACKNOWLEDGEMENT**

I sincerely wish to give all the Glory to the Almighty God for providing abundance grace, strength, guidance and courage that enable me to go through this research work at the University of Nairobi.

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## **ABBREVIATION AND ACRONYMS**

<b>EFA</b>	Education For All
<b>KCSE</b>	Kenya Certificate of Secondary Education
<b>KNEC</b>	Kenya National Examination Council.
<b>KTTC</b>	Kenya Technical Teachers College.
<b>LDC</b>	Least Developed Countries
<b>MDG</b>	Millennium Development Goals
<b>MOHEST</b>	Ministry of Higher Education Science and Technology.
<b>TIQET</b>	Totally integrated Quality Education and Training
<b>TIVET</b>	Technical, Industrial and Vocational and Entrepreneurship Training (Kenya vision)
<b>TTI</b>	Technical Training Institute
<b>TVET</b>	Technical, vocational and Entrepreneurship Training International
<b>UNESCO</b>	United Nations Educational Scientific and Cultural Organization
<b>UNEVOC</b>	United Nations Education and Vocational Training. version.
<b>VTI</b>	Vocational Training Institutions

## ABSTRACT

*The study explored the institutional factors that influence quality training in Technical, Vocational and Entrepreneurship Training in Siaya Sub-county, Siaya region. It investigated the influence of quality training on physical facilities in Technical, Vocational and Entrepreneurship Training and skills needed in industries. Also to establish the extent to which skills taught in Technical, Vocational and Entrepreneurship Training influence industrial attachment use, influence of courses offered and skills used in industries and lastly teaching/learning resources influence skill use in industries. This was a descriptive survey study and the sample composed of 2 principals, 24 out of 60 teachers who were selected using random sampling and 32 out of 80 students purposively selected. Students structured questionnaire and interview schedule were employed in collecting the research data. Collected data was analysed using descriptive method, content analysis was applied on qualitative data to establish the credibility, accuracy, consistency and usefulness of the data sought. This data was then coded and analysed using frequencies and percentages. The data was presented in tables and charts. Cronbach Alpha was used to determine the reliability of the questionnaires. The findings of the study were; need to remunerate teachers well in terms of salaries, the need to build modern workshop with relevant equipment and facilities. The need to in-service teachers to keep them abreast with modern skills trending in the market, Government to increase their financial support in terms of bursaries and grants, the need to employ more instructors / teachers and lastly the exams to be practically oriented as compared to the current trend. The results showed that there are voids on institutional factors that influence quality training. The results showed that the number of teachers need to be increased to match those of the learners, there is need for proper ratio to be reached. Teachers need to be taken for in-service courses and workshops to be organized outside the school to help them benchmark with other colleges to create awareness on the need for new needs skills. The results that were founded was that students need to be practically tested and practicals need to take precedence of the written examination. Recommendations from the findings is the provision of adequate equipment / facilities to the technical training institutions so as to address the challenges of lack of modern resources, also creating a direct match with skills taught in TVET institution to match the right skills needed in industries and business organizations and lastly to embrace stakeholders to put in a joint effort towards laying modern infrastructure layout to match those skills that are needed in industries and business organizations. The study recommends that the government to continue with her role of providing the necessary current infrastructure and teaching/learning resources in liason with the stakeholders in education to make trainees to be fully equipped with the right skills when they join the world of work.*

## **CHAPTER ONE**

### **INTRODUCTION**

#### **1.1 Background to the study**

TIVET is an internationally recognized acronym for technical Vocational and Training Education. Technical education refers to a range of programs that imparts skills, knowledge and attitudes to individuals preparing to take middle level professionals in the world of work particularly in engineering and scientific disciplines while vocational education refers to those programs that impart specific occupation skills and knowledge required in the world of work particularly in engineering and scientific discipline (Republic of Kenya, 1999). The difference between technical and vocational education lies in the amount of analytical knowledge and practical skills that are imparted in each. Vocational Educational programs are generally composed of more practical skills than technical programs which are more analytical (Republic of Kenya, 1999).

Investment in human capital and development of human resources are a central factor in social, cultural, political and economical development of any nation (Psachoropoulos & Woodwall 1987).TVET promotes and provides lifelong education and training for self-reliance. The training programme are expected to provide opportunities for individuals to learn the practical, social and personal skills that will enable them to function at workplaces and as

members of society. The programmes are also to provide for progress within their occupational area and serve as avenues to further education and training (Republic of Kenya, 2012)

Globally, TVET is increasingly becoming important in times of rapid social and technological change. Workers need more updated skills to participate in the knowledge economy as the competencies they acquire increasingly become quickly outdated (Neal, 2011). Both developed and rapidly developing countries as Hong Kong, Singapore and South Korea ensure that their education and growth are inclusive. Their rapid rise (Asian Tigers) in labour intensive, export oriented industries led to a growing demand for TVET which is key in skills development. In the same breath, Cantor (1989) observes that their respective governments provide incentives for enterprises to upgrade skills and competencies of their workforce. Consequently, students are exposed to a culture of scientific investigation and application at an early age, in Europe at least 50% of the students in upper secondary education some form of TVET. In China, India and South East Asia the figure is 35-40%, whereas in Africa it is less than 20% (Nyerere, 2009).

Formerly before the unfinished Agenda the American society usually downgraded and assigns second-class status to high school vocational education. But the unfinished Agenda, for example saw abroad remit for high school education, which should provide general skills and also develop job-

specific ones and it was to correct the lack of quality by creating access improved curriculum and the political will to muscle resources to TVET to make it achieve its goal. (Canter, 1989)

In Japan, though seen in parents eyes as inferior to the general school, not many have embraced technical education. The Japanese concept of skill formation calls 'holistic' one in that it embraces the ideas of education, training, experience and personal development (Cantor 1985). Japanese companies use the word 'education' a great deal by which they mean the development of a highly-educated skilled adaptable, flexible and innovative work force which will participate in and contribute to the economic well-being of the nation.

In Australia Technical education was regarded as poor relation, compared to other two sectors of post-school education namely the Universities and Colleges of Advanced Education CAES into which by early 1970s, the Commonwealth Government was pumping increasingly large sums of money (Canter, 1989). Due to this it suffers inferiority complex, however, there was a change in 1973 when the government realized the importance of technical education to the economic well-being of the nation and formed TVET which spearhead technical education and funds were disbursed to this sector and then resulted in the training of millions of students making it by far the largest part



of tertiary education with state of art facilities and skills ready to meet the job market. (Canter, 1989)

In Africa (Yamada 2007), technical and vocation training provides a means for complementary system of education, with possibilities of credit transfer to higher education. Thus, TVET needs to be designed and delivered in a close partnership with prospective employers with a view of providing vital skills to the increased numbers of young people contemplating basic education programs. The increased numbers is a result of government effort to achieve the education for all (EFA) goals and Millennium development Goals (MDG).

Technical and Vocational Education and Training (TVET) is a challenge in all African countries. In most countries the enrolment rate in formal TVET at secondary level is 5% or less. Non-formal TVET is pre-dominant and highly fragmented. Learning opportunities at the workplace, non-formal learning, private provision and initiatives under various non-educational sector ministries all tend to operate in a non-coherent way. (UNESCO TVET Framework, 2010)

Government and international institutions are paying increasing attention to TVET (it is one eight priority areas in the African Union Second Decade of Education 2006 – 2015). But despite an increase in the number of Africa students.

In TVET, only a few governments in Africa are able to finance TVET at a level that can support quality training. The demand is enormous. Three out of five unemployed in Sub-Saharan Africa are young people, mostly surviving in the informal economy. The Commission of inquiry into the education system in Kenya (Republic of Kenya, 1999) was mandated to recommend ways and means of enabling the education system to facilitate nation unity, mutual social responsibility, accelerated industrial and technology development, life-long learning and adaptations in response to changing circumstances, the Report recommends Totally Integrated Quality Education Training. (TIQET), from the outgoing commissions and their recommendations (some implemented some ignored due to political and economic considerations) . It emerges that while Technical Education received attention from most of the commissions [Ominde, Ndegwa, Gachathi, MacKay, Kamunge, Koech] and even the recently in the (Odhaimbo, 2012).

In Kenya, the combined expenditure on education sector has been on the increase but only 2.8% goes to TVET according to 2009/2010 budget and 0.002% of GDP. Much of these expenditure on TVET goes to salaries which consume an average of 76% of total expenditure in TVET. Similarly, only 0.12% of the GDP is allocated for TVET. But the unit cost on the other hand is high due to low student teacher ratio, expensive training equipment and costly training materials. (Republic of Kenya, 2012)

The key objective of TIVET in Kenya is to offer opportunity for students to explore their opportunity for students to explore their practical aptitudes and to develop elementary skills and gain perspective of technology which enables them to become more effective and informed members of society. TVET training courses are offered at youth polytechnic, technical training institutes institute of Technology and national Polytechnics and other similar institutions. The Kenyan government has established about 1600 institutions offering a wide range of programmes concentrated in urban areas where population is high and poverty levels are lower than in rural areas (Taskforce report).

Beginning from 2007, the government establishes 11 centers of excellence under the National Education Sector Plan (NESP) 20005-2010 specializing in certain selected disciplines. However, the existing centres of excellence need reviewing to link them to the national development priority areas as identified in the vision 2030. The centres need to be improved to meet the needs of modern lifestyles of a knowledge- based on a given society which demands institutions to pursue and sustain global competitiveness (Republic of Kenya, Sessional paper no.14, 2012).

The government recognizes that education and training of all Kenyans is fundamental to the success of the Kenyan vision 2030. In order to realize the national development goals relevant and quality education and training is

required to meet the human development needs of a rapidly changing and diverse economy (Republic of Kenya, Sessional paper no.14, 2012). Despite the progress made over the last decade in enhancing access, retention, quality, completion rates and gender parity in education and training, TVET sector continues to face many challenges which include ;insufficient number of trainers with pedagogical competency, inadequate number of TVET centres, limited availability of customized teaching and learning materials, limited industry participation and inadequate research support services others include low enrolment in TVET due to high cost of technical training and negative perception (Sessional paper no.14, 2012).

TVET in countries that have witnessed significant economic transformation has had dynamic industry-institution linkages. This has not been the case in Kenya, as TVET sector has weak linkages with industry .Since the ultimate objective of TVET is employability and employment promotion. Therefore it is necessary to link training direct to needs of the labour market by providing mechanisms for evaluating the current and future demand, VET must thus be relevant and be demand driven rather than supply driven as a stand-alone activity (Republic of Kenya, Sessional paper no.14 2012). Technical Education is seen as a fundamental element of Kenya's new vision 2030 which aims at a globally competitive and prosperous nation with a higher quality of life by 2030. Its recognize that in today's global market, it takes the expertise of talented engineers and technologists together with the skillful hands of

craftsmen and technicians to produce high quality goods and services for both local and export markets.

Therefore there is need for the institutional factors in Siaya (TTIs) to be re-engineered, currently the state of TVET in the Sub-County is wanting with no survey having been carried out to show the state of TVET in the Region a large part of the curriculum is inflexible and imparts limited technical skills. TVET curriculum development is underfunded and has not received inputs from employers coupled with high cost of training materials, text books, inadequate of physical facilities and insufficient modern equipment have adversely affected and eroded quality Therefore, learning in TVET need to be holistic to enable the learners match the skills that they learned with what is applicable in the outside world. This will eventually assist them in self-employment and if need be secure employment.

## **1.2 Statement of the problem**

Quite a number of the students who have got the training in this institutions have not been absorbed in their areas of specialization therefore there is need to pay particular attention to fresh graduates leaving training institutions to be re-engineered to enable them have the training needed for them to acquire the necessary skills. In the light of the background information to this study it is evident that in terms of employment and technical skills Kenya has lagged behind the countries that one her “age mates” the so called Asian Tigers that

is Malaysia , Singapore. Korea, South Korea and Hong Kong. A closer look at what creates the greater difference between the economic status of the countries Singapore adopted a very comprehensive approach towards TVET that has made it what it is today.

The Kenya approach seemed to have inadequate impetus as indicated in the sessional paper No. 1 of 2005. This lack of energy had been partly one to the negative attitude of most Kenyans inclusive government officials had toward TVET programmes. Technical skills are a necessary requirement if industries transformation to be realized in Kenya by the year 2030, technical skills are a basic requirement that enable members of the society. Since the advent of formal education in Kenya the school has struggled to impact technical skills through the incorporation of technical skills in its curriculum. Correctly, most technical training is done through T.T.Is training programme. This study hence calls for the need to use modern equipment and facilities, up to date literature and highly qualified staff to provide quality training in TVET in Siaya Sub-county to match skills needed in the industry and business will determine the quality of the skills taught organizations.

### **1.3 Purpose of the study**

The study investigated the existing relationship between indicators of quality training in TVET against skill needed in our industries and business organizations. The institutional factors influencing quality training in

technical, vocational and entrepreneurship training in Siaya Sub-County Region, Kenya.

#### **1.4 Objectives of the study**

1. To assess the extent to which physical facilities in TVET influences skills used by industries.
2. To establish the extent to which industrial attachment influences skill used in business organizations.
3. To determine the extent to which courses offered influence skill used in industries and business organizations.
4. To examine the extent to which teaching learning resources influence the skill usage in industries and business organizations.

#### **1.5 Research questions**

1. To what extent did physical facilities affect quality training in TVET?
2. To what extent did skills taught in TVET influence access to employment?
3. To what extent did courses offered influence quality training in TVET?
4. To what extent did courses offered influence production of quality middle level work force?

### **1.6 Significance of the study**

It is hoped that the findings and recommendations of this study may assist economics of education planners, policy makers on education and curriculum developers and making appropriate decisions concerning human resource training and development in T.T.Is. The study sought to help also help the already existing T.T.Is to address training needs and thus respond to changing human resource demands. Thirdly, the study will assist T.T.Is and potential employers to work more closely in addressing quality concerns on graduates coming out of the schools to find relevant work or be self employed. The study gave an insight into challenges faced by fresh graduates. When they get employment in industries and lasting it gives light on what should be taught to meet the needs of the job market. Thus institutional factors should be well addressed to enable learners come out ready for work.

### **1.7 Limitations of the study**

Best and Kahn (2004) defines limitation as those conditions beyond the control of the researcher that may place restrictions on the conclusions of the study and their application to other situations. The researcher may not be able to control the attitudes of the respondents which may affect the validity of their responses will be confidential and will used for academic purposes only. The limitation was addressed by the researcher during questionnaire that was short and precise to the needed answers.



### **1.8 Delimitations of the study**

The study was conducted in public TVET institutions in Siaya region excluding special and private TVET institutions. It also leaves out the universities and constituent colleges. The study focused on the principals, lecturers and students.

### **1.9 Basic assumption of the study**

The study was based on the assumptions that TVET institutions in Siaya Region need to influence production of mid-level workforce. The study also assumed the establishment are shared and understood by all the relevant stakeholders.

### **1.10 Definitions of significant terms**

**Middle level workforce** refers to employees or self-employed middle level cadre workers with requisite skills, knowledge, attitude and values needed for the place of work in order to enhance productivity, stimulate competitiveness and bring about economic development.

**Siaya region** refers to the MOHEST's educational geographical zone that comprises of two (2) Technical Training Institutes (T.T.Is).

**Public TVET** refers to post-secondary middle level technical institutions which is developed, equipped and provided with staff from public funds by the government, parents and communities.

**Establishment** refers to the act of constituting an order or a system.

**Quality** of predictable outcome.

**Unemployment** refers to a situation where someone of working age is not able to get a job.

### **1.11 Organization of the study**

This study was organized into five chapters. Chapter one was the introduction which consisted of the background of the study, statement of the problem, purpose of the study, objectives of the study, research questions, significance of the study, limitations of the study, basic assumption of the study, definitions of significant terms and organization of the study.

Chapter two focused on review of related literature. It covered literature review based technical and vocational education and training, the goals of technical and vocational education and training, importance of technical education. Influence of teaching learning resources on production of middle level workforce in TVET institutions and influence of courses offered on production of middle level workforce in TVET institutions in Kenya. Chapter three focused on research methodology which included; research design, target population, sampling design and procedure, data collection instruments, validity of the instruments, instruments reliability, data collection procedures / techniques, data analysis and presentation. Chapter four focused on data analysis, presentation and discussion which included; questionnaire return rate, demographic information of sample population. Chapter five included summary conclusion, recommendations and suggestions for further studies.

## **CHAPTER TWO**

### **RELATED LITERATURE REVIEWED**

#### **2.1 Introduction**

Related literature reviewed under the following headings: TVET for human capital development and employment in Kenya, TVET and skills development, importance of technical education, influence of teaching learning resources on production of middle level workforce in TVET institutions, influence of courses offered on production of middle level workforce in TVET institutions in Kenya and TVET and training facilities.

#### **2.2 TVET for human capital development and employment in Kenya**

The National Development Plan of 1994 appropriately pointed to the necessity of having university of 1981 under the chairmanship of Mackay; the presidential working of education and manpower training for the next decade and beyond 1988; under the chairmanship of Kamuge and lastly in 1999 the TIQET report under the chairmanship of Koech. Good data on employment and personnel supply and demand in order to make good decisions in terms of development. It pointed to the necessity of providing information on the requirements, availability, and distribution of human resources. This would be based on the understanding of the present and future situation regarding supply and demand of manpower and their implications. Because of this perceived importance, the Plan committed the Ministry of Labor and

Manpower Development and Organizations to carry out periodic and regular manpower and production surveys to generate the necessary database to facilitate a comprehensive manpower planning process. Manpower policies were to be formulated in relation to national needs, appropriate educational and vocational training systems were to be planned. In spite of such a commitment, it appears that, at the end of the Plan's term, no such report or databases had been developed. A library search has produced no such report.

A visit to the library of the Central Bureau of Statistics also confirmed that the most recent Labor Force Survey and the most recent Manpower Planning report were both published in 1988, much too old to be of relevance in planning, almost twenty years later. Because of problems associated with such projections, however, failure to provide such a report may not be significant. Kraak (1993) warned that manpower planners cannot accurately forecast future occupational requirements. This was because of the high degree of substitutability among related occupations, fast moving technologies, and unpredictable fluctuations in socio-economic production. Short of such statistics, however, the Plan, itself, did contain information on employment and expected changes in employment. However, it was not at all clear, as Kraak (1993) warned, as to the source of the projections, except that they appeared to be intuitive on the part of the report writers. They claimed, for example, that "the modern sector of the Kenyan economy was only to absorb a small portion of job entrants" (Republic of Kenya, 1994).

On the other hand, the informal sector had been expected to play a major role in job creation for many of the new entrants into the labor market. There had been need to develop more advanced technical and entrepreneurial skills for those who had the means to start their own businesses. With regard to retiring professionals, they needed management skills like business planning, record keeping, cost accounting, procurement and inventory control, market analysis, communicating, supervision and credit management for their entrepreneurial engagements. All these should be preceded by training needs assessment to determine among other factors the target group, level of training, nature of skills and facilities for training (Republic of Kenya, 1994). But due to expensive equipment, high cost of training materials and textbooks only a few have been able to venture into this noble course (Republic of Kenya, 2012). thus making Kenyans of eligible age group of not being trained therefore there is need to re-engineer the institutional factors to make TVET education to be qualitative.

### **2.3 TVET and skills development**

Human resources development can suitably be developed through TVET. Skills development provides individuals with a better chance to sustained increased in earning power and access to quality life through being able to afford quality health care, food, clothing and shelter (MGD 1; UN, 2010). Consequently, when TVET curricular are focused on creating self-employment, the unemployment levels in developing countries can be reduced

(Netherlands, Ministry of Foreign Affairs, 2009). Caillods 1994 observes that skill development and by extension skill formation system are important because of their contribution to individual and company incomes and to national productions to be more productive and generate higher incomes. Workforce skills make enterprises more productive and profitable and help national economies raise production and create wealth. He sums up this by noting that “Vocational education and training are indispensable instruments for improving labour mobility, adaptabilities and production, thus contributing to enhancing firms competitiveness and redressing labour market imbalances”.

Research has further shown complementariness between capital and skills. Human capital was found to be a significant determinant of physical capital investment in an economy whereby a higher level of human capital enables plant and machinery to be used more efficiently, raising the rate of return on investments (Ashton and Green, 1999). O’ Conner and Lunati (1999) contended that capital skill complementarities largely reflect the skills required to master technologies in newly acquired capital equipment.

## **2.4 Importance of technical education**

The marginalization, pace and direction of industrial development goals and objectives technologies innovation and adoption as well as economic advancement largely depends on quality, quantity and flexibility of human resources and how much they are employed to apply their practical knowledge

and skills (GOK, 1997). Properly skilled human resources are an asset to effective management and utilization of both resources for increased productivity. Effective management and enhanced productivity requires a well-trained and healthy human resource that is productively employed. This is what TVET intends to do (GOK, 2002).

Technical and vocational education and training is noted importance for the future membership of the society and their active participation in its maintenance and development (Bali, 1997). This will lead to said reliance of an individual of an individual in late part of life. They help a person get self-employment, which contribute to individual's advancement economically and socially through individual capabilities. This leads to creativity of individuals. Thus technical subjects/courses availed to the young people the opportunity to apply knowledge and learning at the same time (Omulando, 1992) Countries that invest heavily in the development of human capital reap significant gains from better educated and healthier population who are able to sustain growth. UNEVU and UNESCO, (1997).

Further evidence from the newly industrial countries show that TVET is largely responsible for providing a pool of skilled human resources essential for such critical human resource essential for such critical areas of the economy as agriculture, manufacturing, construction, communication, transport and commerce (UNESCO, 1997).

TVET is also noted for its importance in industrial transformation and development. In sessional paper No. 2 of 1996 on industrial transformation and development the government did set a target of achieving reviewing industrialized country NLC status in the year 2010. It was noted that TVET was and still is essential for achieving this subject and accredited as an important pillar for facilitating industrial transformation in a country (GOK, 2006), TVET has also been acknowledged important for rural development.

The greatest potential to empower rural communities lies in equipping individuals with entrepreneurship skills so that they can create local business, jobs and wealth and this notwithstanding are adequately equipped for self-employment in rural community than many graduates from academic programs. But the skills imparted should be those that qualify an individual effort in terms of skill acquisition to be flexible to the world of work therefore there is need to re-engineer the institutional factors to enable one get a ready employment.

## **2.5 Influence of teaching, learning resources on production of middle level workforce in TVET institutions**

UNESCO, (2012) postulates that teaching and learning process and its effectiveness is a measure of quality of any TVET programme. Quality facilities and equipment is fundamental to the provision of quality and relevant TVET education. UNESCO further noted availability of a systemic approach



to quality assurance to support practitioners and policy-makers is important in improving the quality of training provision, and also guide students in making choices. Charner (1996) observed that, learners in developing countries have begun to show more interest in technology. According to UNESCO, (2012) teaching learning and strategies must adapt to more flexible and generic approaches that embrace the use of digital media where TVET learners use ICT to enhance learning. UNESCO, (2000) affirms that availability of a range of teaching and related equipment supplies, furniture and various forms of printed media for teachers and learners is crucial in facilitating the process of teaching and learning worldwide.

The teacher-pupil ratio greatly influences the teaching profession and hence performance schools with low teacher-pupil ratio greatly give individuals attention to the pupil there is increased interaction which enables the learner to be motivated (Chelimo, 2005). Therefore schools suffering constraints of facilitating tend to do poorer than those with adequate facilities. Nyerere, (2009) further notes the need for an establishment well-structured and coordinated industrial exposure for trainees in TVET institutions. There is need for teacher popular ratio to be enhanced thus making the instructors to have a class that they can be able to manage well without straining as this will make them more competent and thorough so that learners' needs are well addressed and catered for resulting into production of quality workforce. Therefore there is need to retrain teachers to be instructors with the right

facilities, equipment and class ratio this will enhance quality to be realized and achieved.

## **2.6 Influence of courses offered on production of middle level workforce in TVET institutions**

Cantor (1989) observed that in the developed Japan as a case in point and developing countries, many young people enter vocational programme at upper secondary level where these programmes sometimes are linked to workplace training, formal apprenticeships, alternating on the job learning with school based training. OECD (2008) indicate that means and mechanisms are put in place to ensure a smooth and rapid transition of TVET graduates to activity or to other forms and levels of education/training. Guidance and counseling is an important element in this respect, and public or private employment services have a crucial role.

In many African countries, public TVET institutions have not been able to attract many students. Commonwealth of learning (2001) notes that many parents believe that only a university education will offer their children the opportunity to acquire a good job. These countries are unable to attract enough people to train in TVET since it is perceived to involve manual labour, is dangerous, dirty and difficult. According to Atchoarena and Esquieu (2002) public TVET institutions continue to attract a great deal of criticism for being unable to train skilled workers to meet the requirements of enterprises and

being extremely costly. Often, the graduate of these institutions join the ranks of the unemployment, an indication that the training provided did not match the jobs available.

Although there are many TVET institutions spread across the country, the institution are yet to operate as centres of choice rather than as centres of last resort (MoE, 2009). The students' entry grades in TVET are usually low as compared to those joining the university education. TVET is considered as a second choice and often times attributed to those who do not make it for university admission. The TVET education sector has experienced historical injustices with far reaching consequences. According to Nyerere (2009), TVET in Kenya is associated with those who have failed in academics. The technical subjects were awarded fewer marks than the other subjects. Nyerere further notes that there is no restoration of technical subjects in the secondary school curriculum with a view to expanding their reach to cover all secondary schools.

## **2.7 TVET and training facilities**

Training equipment and facilities serve a variety of purpose for trainees and the surrounding community, most importantly to develop knowledge and skills for trainees. Literature on the impact of the physical environment on learning outcomes though insufficient, some researchers have found that curriculum and facility design are related which demonstrates that the physical

learning environment has an influence on students' social and scholastic. (Jameson, Dane and Lippman, 2005) Research conducted to examine the links between school infrastructure and the student performance was at best unquantifiable (AMA, 2006). This view was confirmed by temple (2007) in a review of literature, demonstrating that any connections between the learning environment and educational activities lack firm evidence.

Further literature indicates that educational infrastructure for TVET programmes service a more specific purpose of preparing students to enter the workforce with a set of specific, technical skills. Cutshall (2003) observes that while the issues of facilities planning for technical schools are not markedly different from those in other academic facilities, there are other challenges with regards to the maintenance and improvement of specialized equipment that is needed for instruction. Spaces for TVET have distinct requirements for constructing the infrastructure which include; equipment, room size and providing resources for a range of activities in addition to providing correctional classrooms for academic instruction. (JICA, 2006)

JICA (2006) and Cutshall (2003), observes that the technical schools, instructional rooms and space design tend to be driven by the highly specialized equipment, furnishings, machinery and tools needed to properly instruct students. TVET facility planning therefore necessitates flexible design with considerations for the future and accompanying changes to pedagogical

approaches and changes in labour market demands. (Wolf, 2002; JICA, 2006). Isler and Doerig (2008) contended that architects should design spaces with little definition of function so that spatial elements can evolve or develop. Indeed, Jamson (2000) examined space from the teachers' perspective and noted that the physical environment was likely to influence how the teacher constructed activities. Besides, specialized or defined space provides a setting for students to develop critical thinking and problem solving abilities, practice pertaining skills and gain hands on experience with industry equipment. (Wathington, 2007; Wolf, 2002)

Practical instructional spaces need to emulate the eventual work environment that students are likely to enter upon completion of training, laboratories and workshops that stimulate actual work settings can contribute to students' achievement and it is this physical environment that will properly prepare students for employment. (Cutshall, 2003). Furthermore, arranging teachers' offices and students' learning areas in close proximity promotes collaborations, so that the students can easily interact and engage with teachers. (Jamson et al, 2000)

## **2.8 Summary of related literature reviewed**

From the reviewed literature, it was evident that several aspects of TVET had been addressed by various scholars, government organizations, institutions and other stakeholders. The reviewed literature revealed that inputs/courses in

terms of the content and industrial experience is needed. Also academic and professional training should be re-engineered, facilities and equipment need to be relevant and lastly linkages should be created between TVET and industries. The study therefore established that issues such as the role of TVET in job creation, importance of TVET in skills acquisition, the need for linkages between TVET and industries need to be addressed. In the regard, TVET plays a major role in the economy especially in the development and production of middle level manpower required for the economy at large. This study therefore explained the institutional factors that needed to be looked into to influence quality training in TVET production to address unemployment.

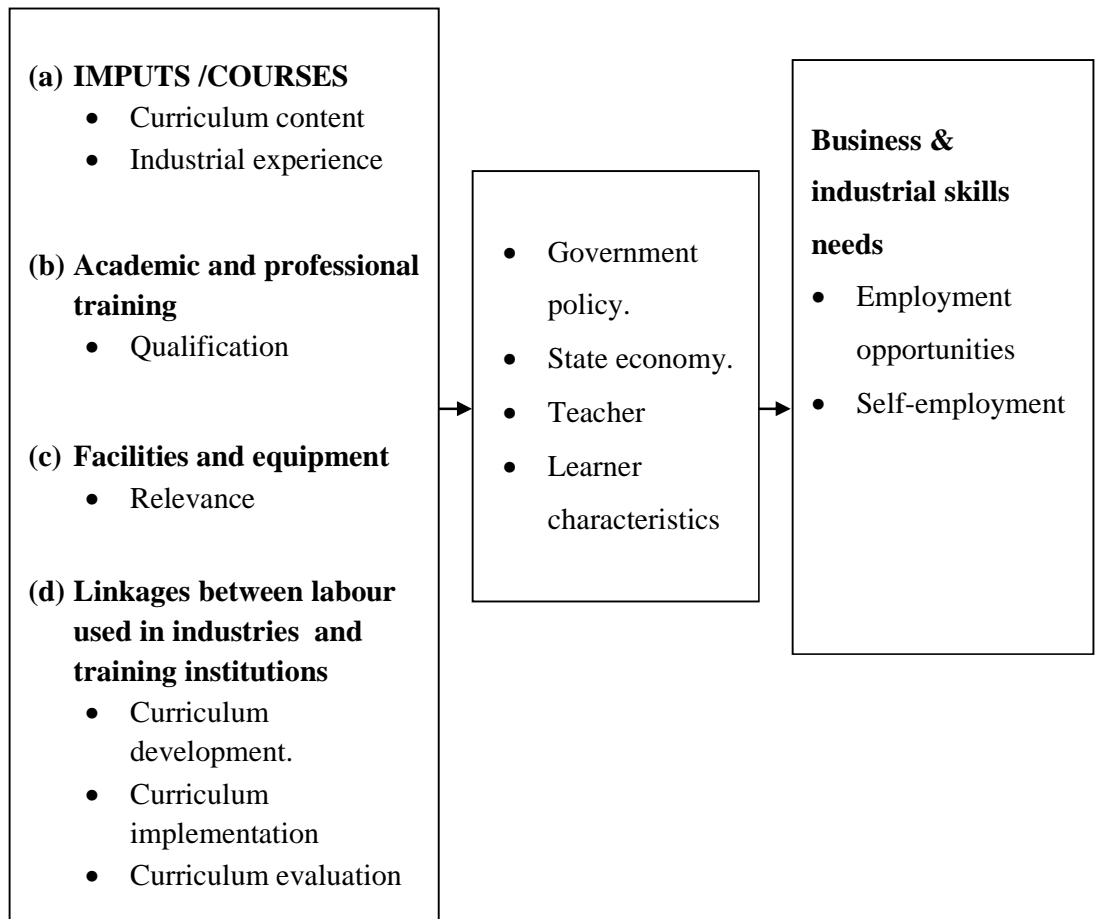
## **2.9 Theoretical framework**

According to the work of Schultz (1971), Sakamota and Power 1995, Psacharopoulos and Woodhall (1997), human capital theory rests on the assumption that formal education is highly instrumental and even necessary to improve the production capacity of a population in short the theory argues that an educated population is a productive population. It calls for an effort to link TVET training to match what is there in the job market. This hence will call for updating the physical facilities, re-training of teachers to be called instructors and the re-evaluation of TVET curriculum/ courses to match the needs of the current society. However this could prove expensive and difficult to the government but all in all should be given a trial may be by starting on piecemeal basis.

Nyerere (2009) points out that there is need for labour mapping so that the industry needs are known and training be tailored to these particular needs. This research needed to be conducted using the approach of Human Capital Theory to education (Habbison and Myers, 1964). Proper argue that education and training constitute an investment in human capital which yields in the returns in form of income for the individual which results in economic growth through enhanced productivity for the society. This notwithstanding the government need to draw strategic plan on how to tackle the issues addressed in the institutional factors that affect quality training in TVET so as not to lag behind and to move with rest of the world in socio-economic development.

## 2.10 Conceptual framework

A conceptual framework that captured the relationship between independent variables and moderators/intervening variables and dependent variables is presented in Figure 2.1.



**Figure 2. 1: Institutional factors that influence quality training in TVET in Siaya region, Kenya**



The study formulated a conceptual framework. The conceptual framework in Figure 2.1 showed the relationship between TVET and unemployment. The figure showed the relationship of the variables identified in the study. The inputs/sources, academic and professional training facilities and equipment and lasting linkages between labour used in industries and training institutions factors were the independent variables. The business and industrial skills needs were the dependent variables, that is inputs/courses, academic and professional training and linkages between labour used in industries and training institutions.

## **CHAPTER THREE**

### **RESEARCH METHODOLOGY**

#### **3.1 Introduction**

This section contained the methodology for data gathering and analysis that was used in the study. It described the strategies that were used in collection and analyzing collected data. The section was organized along the following sub sections: research design, the study institutions, target population, sample size, sampling design, research instruments, teacher self-assessments questionnaires, pilot study, reliability and validity of the instruments, reliabilities of the instrument, validity of the instrument, data analysis and interpretation, students' self-assessment questionnaires and ethical considerations.

#### **3.2 Research design**

The research design used in this study was descriptive survey research design. Mugenda and Mugenda, (2008) states that the descriptive study is a method, which enabled the researcher to summarize and organize data in an effective and meaningful way. According to Cooper and Schindler (2003), a descriptive survey research is concerned with finding out the what, where and how of a phenomenon. The study adopted descriptive survey research design to obtain information by asking questions relating to individual perceptions in describing the existing indicators to address quality in the TTIs as outlined by Mugenda and Mugenda (2003). This enabled the researcher ascertain and be

able to describe characteristics of the variables of interest and ensuring quality. The major purpose for adopting descriptive research design was because it gives a description of state of affairs as it exists at present (Kothari, 2004). This design could be suitable for this study since the researcher described how variables influenced quality training in TVET production of middle level workforce. The researcher was not able to manipulate any variables.

### **3.3 Target population**

The target population for the study included trained technical teaching teachers and students of the technical institutions. These trained technical teaching principals, teachers and students were drawn from the technical intuitions purposively sampled. Simple random sampling was chosen because it is regards by many researcher and statisticians as being the most practical method of sampling that is free fabulous. Franken and (Wallen, 2000) absence that “Any difference that exist between the sample and the population should be small and unsystematic “Any difference that do occur are as the result of chance rather than on the part of the researcher” (Keslinger, 1976) also observes that “A sample drawn at random is unbiased in the sense that no member of the population has any more chance of being selected than any other member”

**Table 3.1: Sample size**

<b>Profession</b>	<b>Number</b>	<b>Sample</b>	<b>Percentage</b>
Principals	2	2	100
Lecturers	60	24	40
Students	80	32	40
<b>Total</b>	<b>142</b>	<b>68</b>	<b>47.8</b>

The research, these have chosen this techniques in order to ensure that there was no bias in selecting the teachers that constitution the sample. In carrying out simple random sampling to get the sample heads of department of these institutions were each given three sample papers to distribute to their colleagues who they are within the line of duty for distribute and their later they were collected from the heads of department.

### **3.4 Sample Size and sampling procedure**

For determining sample size, Frankel and Wallen (2000), drawing conclusions about a population after studying a sample is never totally satisfactory argues the researcher can never be sure that their sample is perfectly representative of the population. Some differences is randomly selected and is of sufficient size, these differences are likely to be relatively insignificant and incidental.

Since is no clear and answer as to what really constitutes an adequate or sufficient sample size the best sample should be as large as the research can obtain with reasonable expenditure of time, money and energy Frakashan (2003) says that the size of the sample should be neither be excessively large, or too small. It should be optimum i.e one which fulfill the requirements of efficiency, representatives reliable and flexibility. He adds that a sample size should technically be large enough to give a confidence interval of desired width and as such the size of the sample must be chosen by some logical process before the sample is taken from the universe.

The sample should be determined by the researcher keeping in mind the nature of the universe, number of classes proposed, type of sampling standard accuracy and acceptable confidence level, availability of finances and nature of study. Kasono (2007) observes that researchers use the largest sample possible because statistics calculated from a largest sample are more accurate. He suggests that for co-relational research, 30 cases (subjects) or more are recommended. Best (1977) argues that the ideal sample should be large enough to serve as an adequate representation of the population about which the researcher wishes to generalize and small enough to be elected economically in terms of subject and availability expense in both time and money and complexity of data analysis he adds that there is no fixed number or percentage of subjects that determines the size of an adequate sample. He

concurs with Kasomo that sample of 30 cases or more are considered large samples and those with fewer than 30 cases small samples.

According to Prakashan 2003, the following formula can be in case of infinite population when an estimate of the population is to be made in the universe.

$$n = \{ z^2 (pq) \} / e^2$$

Where n= Sample size

Z = Standard error associated with the chosen level of confidence (1.96)

p = estimated percent in population

q = 1-p

e = acceptable sample error.

But incase of finite population the above formula can be charged to.

$$n = \{ s.z^2.p.q.N^3 \} / [e^2 N - I) + z^2.p.q]$$

Where N = Size of the population and the variables are as above.

The formula requires that the:

- (i) Amount of confidence be specified.
- (ii) Variance be estimated
- (iii) Level of desire accuracy needed be specified.

By estimating that the population of trained technical teachers in the two sampled intuitions to be, and the chance of successfully teacher to be 0.7 then with 95% confidence interval.

$$N=300$$

$$p= 0.07$$

$e= 0.03$  (since the estimate should be within 5% of the tone value.

$Z= 1.96$  (as per table under normal value for the given confidence level of 95%

Substituting we have

$$n= \{1-96 (0.7 (1-0.7) 300)\} / \{.05^2 300-1 + 1-96^2.07 (1-:07)\} = 75.2$$

$$N = 75$$

Hence the sample size desires was 75 and this sample was picked and the sample random sampling method as described above.

### **3.5 Research instruments**

#### **3.5.1 Questionnaires**

Two data collection instruments were developed for this data. This questionnaire was designed and used to collect data from the sampled students. Concepts of students skill acquires competencies were adopted as the conceptual framework for the study. The questionnaire comprises of 2 sections (see appendix 1) Background information of students courses they are taking and section 2 effects of technical education on employment opportunities in Kenya today.

The second research instruments used was the teacher's self-interview schedule (see appendix 2). This was a structured questionnaire schedule employed to seek the views of the selected technical teachers from Siaya Institute of technology and Liganwa Youth polytechnic. The interview schedule contained twenty questions (see appendix II). These questions focused attention on the following areas of study: teacher's level of education, teacher's possession of key competencies relevant for technical education, perceptions of teacher's knowledge and skills, levels, challenges facing TVET and suggested solutions in terms of abilities to be put in place for quality TVET.

Questionnaire and interview schedule were used since, according to Kosomo (2003), most techniques for measuring perceptions and attitudes rely heavily on verbal material in the form of interview and questions. Prior to being administered the instruments were looked into by experts on technical and vocational education. Based on their comments, some items were reworded, while others were modified to eliminate any ambiguity.

### **3.6 Pilot Study**

To check for the reliability of instruments, pretests through a pilot study which was carried out on a sample of level 7. Subjects drawn from a neighboring private technical training institution pretesting the instruments was a critical component of minimizing measurement errors in assuming research (Best



1977). This process helped to determine internal consistency as well as to get feedback or issues such as representativeness of items for particular constructs, clarify of questions, questions, questions format clarify of instruction, and specificity of items.

### **3.7 Validity of the Instrument**

Validity can be defined as the degree to which a test or research tool actually measures what it is supposed to measure (Mugenda and Mugenda, 2012). In order to minimize instrument error occurring from ambiguity in research instrument, the researcher sought expert advice from the supervisor in the evaluation of the instrument. The feedback from the experts assisted in the development of a valid research instrument through expert judgement.

### **3.8 Reliabilities of the instrument**

Cronbach Alpha was used to provide reliability estimates for the instruments and for likert type items. The items were then considered reliable if they yield a reliability coefficient of at least 0.70. Which is the value considered respectable and desirable (Best, 1977).

### **3.9 Data analysis and techniques**

Data analysis in qualitative paradigm requires that the analysis break data down into constituent's parts to obtain and to test research hypothesis (Kasomo, 2006). The student's questionnaire (Appendix 1) was pre-coded

according for the themes or constructs that name an impact on techniques education training that improves on quality. Pre-cording helped to facilitate data entry and versification after the data had been collected and collated. After the data had been collected, field inventory data for each objects/study population was reviewed. The data was then sorted and analyses using the statistical package for social science (5pss version 15.0)

Frequently Distribution were used to present the analysis results of students characteristics, perceptions about key arrears in technical education and their expectations upon the completion of the college training. Factor analysis was used to reduce data by extracting the knowledge level and skills level factors from the student's questionnaire. Independent a sample's' test was the used to test the significance of the mean differences is knowledge and skills competencies for all the students in terms of quality training upon correlation coefficient were used to investigate the relationship between exposure to equipment, machinery and competency levels.

### **3.10 Ethical considerations**

Ethical considerations in any research should be of the utmost importance since the manner in which research is conducts and the findings that are realized both have direct and indirect consequences to people's lines (Mutchic and Berg, 1996). In view of this, the current study ensures total confidentiality

of the respondents. In additions the study sought consent from the would be respondents.

Confidentiality refers to an agreement between persons that limit others access to private information De Vos, 2002 In this regard; the questions did not have the respondent's home with the intention that they would not be identified after filing the questionnaire. Babie 1990 as quote anonymity means that no one, including the research, should be able to identify any subjects afterwards. Informed consent telling potential research participants about all percepts research that might reasonably influence their decision to participate (De Vos, 2002) the participants of this study throughout the research process.

## CHAPTER FOUR

### DATA ANALYSIS, PRESENTATION AND DISCUSSION

#### 4.1 Introduction

This chapter presented data analysis and findings of the study. The study was conducted to find institutional factors influencing quality training in Technical, Vocational and Entrepreneurship Training in Siaya Sub-county, Kenya. The sample population was made up of 32 students and 22 teachers. Data was collected from the sampled population using questionnaires and it was analysed using Statistical Package for Social Sciences (SPSS) and presented in graphs, Tables, charts and percentages. The findings of the study are organized according to research questions.

#### 4.2 Questionnaire return rate

A total of 22 teachers out of 24 returned the questionnaires. This translates to 91% return rate. In addition, 32 students completed the questionnaire and the interview translating to 100% return rate.

**Table 4.1: Questionnaire return rate**

Category	of Sample	Questionnaire	Percentage
respondents		returned	
Principals	2	2	100
Teachers	24	22	91
Students	32	32	100

Table 4.1 shows that there was a high return rate indicated by 97% for the questionnaires administered. The return rate for the principals showed how the principals took the research seriously by posting 100% while the lecturers' response was 91% and students posted a response of 100%. The three return rates were deemed very high and showed the success of the questionnaires administered.

#### **4.3 Demographic information**

The demographic information sought to establish background information of teachers and students who were the main respondents of the study. Their demographic background was based on gender, age and academic qualification. The analysis of teachers' gender composition revealed that 59.7 percent of teachers were male with only 40.3% as female.

**Figure 4.1: Teachers' gender**

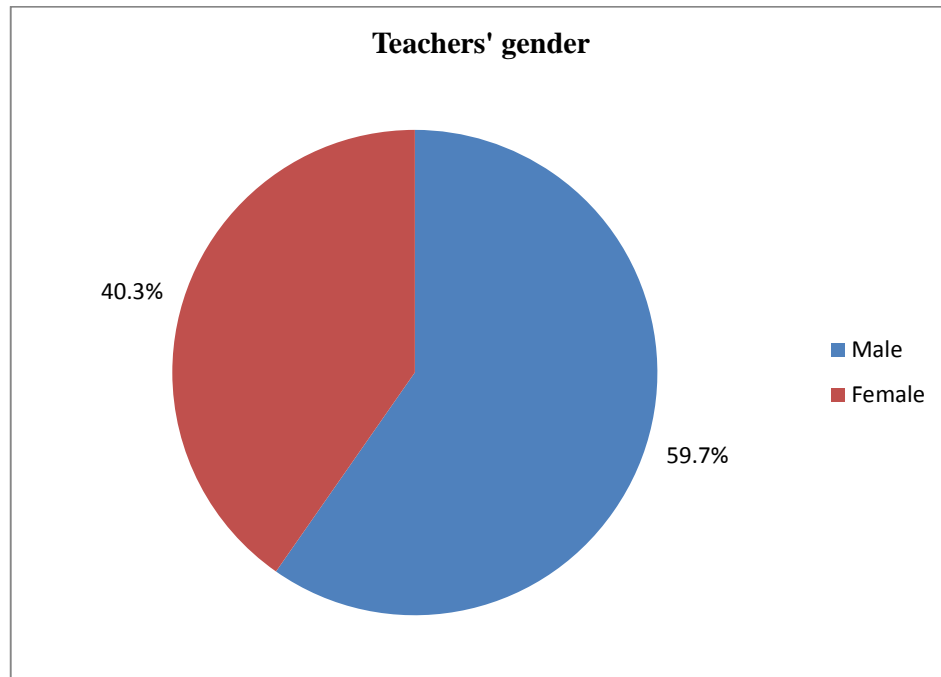


Figure 4.1 implied that majority of teachers 59.7% were male and 40.3% of teachers were female. The results indicate that there were more male teachers than the female. This can be attributed to the fact that most courses offered at this level being technically oriented as male teachers preferred this courses to female.

**Table 4.2: Education qualification of teachers**

	<b>Frequency</b>	<b>Percentage</b>
Certificate	2	4.5
Diploma	6	22.7
Graduate	12	54.5
Masters	2	9.0
	<b>22</b>	

Table 4.2 shows that the education / profession background of teachers reveal that teachers are trained with majority comprising of graduate 54.5%. A small number had diploma education 22.7% and a few had certificate at 4.5% and masters at 9%. This shows that teachers in the institution are qualified to handle technical education skills.

**Table 4.3: Teachers' work experience**

<b>Years</b>	<b>Frequency</b>	<b>Percentage</b>
0 – 4	3	12%
5 – 9	5	20%
10 – 14	5	20%
15 – 19	3	12%
Over 19	3	12%

Table 4.3 shows that most of the teachers had good experience with majority in the bracket of 19 years and over at 12% with those of category of 0-4 years at 12%, while those who served between 5-9 years were at 20%. This tied with those who had category of 10- 14 years same to 15 – 19 years of experience at 12%. This is very good for an institution such as institute of technology which disseminates knowledge to students at this level. This will enhance competence at service delivery. The class teachers teaching experience is important since according to Shiundu (1982) noted that successful teaching experience is a valuable asset. It enables the teachers to acquire certain commendable characteristics such as promptness, adaptability, efficiency, arousing and maintaining interest adequate command of instructional materials and ability to face the class with confidence. Thus teachers with successful teaching experience may develop positive attitude towards the subject and hence choose appropriate instruction materials which will arouse and sustain interest among learners, this leads to improved quality of education in TVET. Though the number in the field does not match the right required ration, in a situation where the BOG teachers are nearly at par with those employed by the government, so there is need for the government to redouble their effort and employ more teachers, more so with latest training skills to inculcate this to the trainees.



#### 4.4 How do physical facilities affect the quality of education?

Because currently in our country unemployment has gone up, many school leavers tend to join institute of technologies. This raises the question of extra classrooms and even provision of more land for the expansion of the school compound to accommodate these extra-buildings and at the same time provide more physical facilities. This may interfere with the provision of quality (Oparanga, 2004). This study sought to identify physical facilities had an effect on the quality of education in public secondary schools. This study also looked at the adequacy of physical facilities.

**Table 4.4: Teachers' response on adequacy of physical facilities**

Facilities	Adequate		Not adequate	
	Frequency	Percentage	Frequency	Percentage
Classrooms	11	50%	11	50%
Computer labs	5	22.7%	17	77.2%
Libraries	4	18.2%	18	81.8%

Table 4.4 points that majority of teachers said that libraries, classrooms and computer labs are vital for one's education. In cases where the computer labs were inadequate students were taught in shifts. The researcher observed that in all the institution were there such as libraries and computer labs were inadequate. The results corresponds with those of Likoko, Mutsoso and

Nasongo (2013) in a study on adequacy of instructional materials and physical facilities and their effects on quality of teachers preparations in emerging private primary lecturers training colleges in Bungoma County, who noted that the difference in school facilities would seem to account for difference in achievement.

The generalization of educational innovation is accompanied by the need for new resources which should be available for sufficiently long time in order that innovation becomes part of the daily life of any institution.

**Figure 4.2: Students' gender**

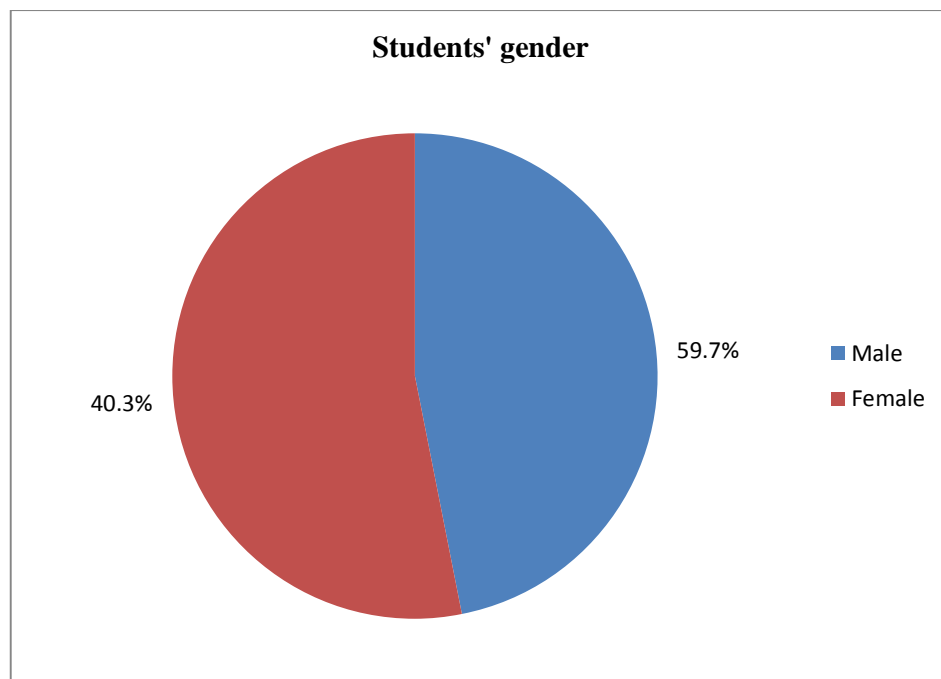


Figure 4.2 shows that female had the highest percentage of the population of 53.1% while the male had 46.9%. This shows that the gender parity that the government normally strives has been achieved and the female are currently better off than the male. But the high level of female population could be attributed to the many courses that involve the female folk as was witnessed in one village polytechnic, also could be because of the life currently involves everybody both male and female struggling to put food on the table and therefore its upon the male and female to get skills to make them productive in life. So the female are more ambitions on their own. Also the tilting could be as a result of the males opting out due to high dropout rates of the male than the female as was sighted by one college principal. So there is need to check on these to improve on quality training. And lastly, towards the end of the last millennium emphasis was placed on the girl child and this made them to climb up the ladder and their counterparts now are the ones who now begin to suffer due to the sighted dropout rates.

There has been a lot of empowerment in support of the girl child, the bot is now at the periphery of the development sphere. In an effort to free the girl child from the shackles of poverty and backwardness for years there has been a sustained campaign whose rewards are now paying off. The girl child is now free, confident, independent pursuing her dreams and is no longer the weaker sex. But the downside of this is that the boy child is now the weaker sex and endangered species. Statistics just as what I have witnesses, the enrolment of

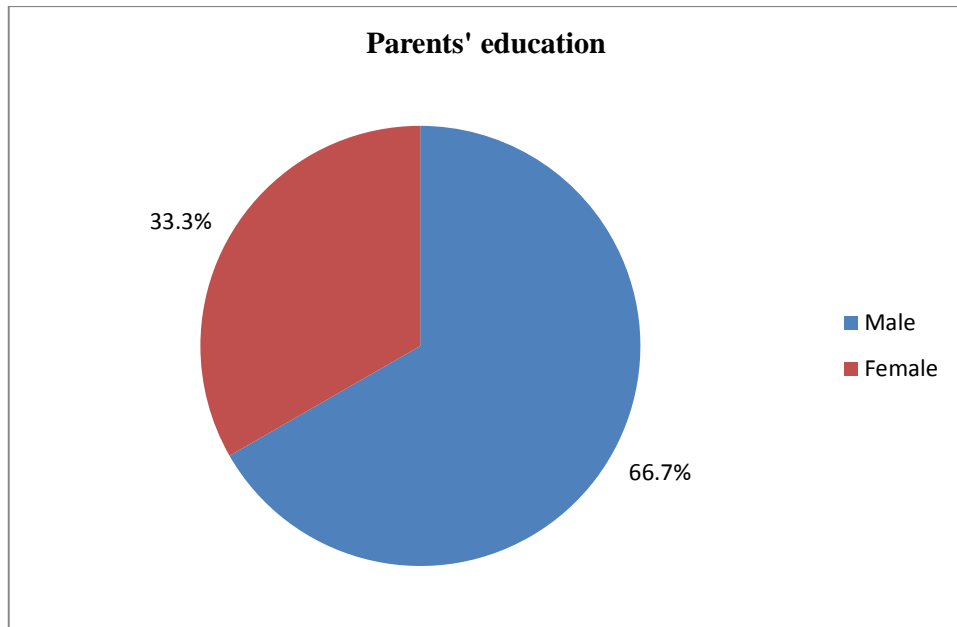
the boy child in school has gone down significantly while the dropout rate has risen. What is happening to the boy child is real and needs to be addressed fast before things get out of hand.

**Table 4.5: Students’ age and level of education**

Age	Frequency	Percentage	Level of education	Frequency	Percentage
15 – 19	2	9	KCPE	2	9
20 – 21	14	63.6	O Level	17	77.2
25 – 29	5	22	A level	4	18.1
30 – 34	1	4.5	University	0	0

Table 4.5 from the above analysis most of the students’ age bracket is in early twenties who has opted for the training. A few village polytechnics are below the age bracket of 20 – 21 at 9%, this could be attributed to those who dropped before joining secondary school. In terms of education, students at these level, majority are O’ level students who performed wanted to continue with their education but opted for these courses to make them further their education.

**Figure 4.3: Parents' education**



The data on Figure 4.3 points that most of the male parents had more education as compared to the female parents as most male were secondary and college graduates as compared to female who are primary schooled. Cases where male had university or college, the female had the training of secondary or college or even primary but it was a rare occurrence.

**Table 4.6: Parents' level of education**

	Male		Female	
	Frequency	Percentage	Frequency	Percentage
Primary	7	21.8%	11	34.3%
Secondary	15	46.8%	12	37.5%
College	7	21.8%	10	31.3%
University	3	0.9%	0	0.0%

Table 4.6 depicts that parents who took their children to schools most of them are schooled upto a certain level depending on their sex. Male parents are more educated and schooled than the female with those who have gone for primary education being 21.8% for female while male is 34.3%, when we proceed to secondary school many female at 46.8% attended these schools than male counterparts at 37.5%. On college education the male are the highest achievers at 31.3% while the female stands at 21.8%. And lastly on university education male has the highest percentage of 0.9% and female none. Therefore, TVET education is also pegged on what the entry level of education the parents had and their earlier exposure to education. So parents with good education will transfer the same to their sons and daughters and not just education but quality training in good colleges that can be found under the umbrella of TVET.

**Table 4.7: What would you say is the effect of Technical Education on employment opportunities in Kenya today?**

	Frequency	Percentage
Very relevant	15	46.6%
Moderate relevant	8	25%
Fairly relevant	4	12.5%
Most relevant	2	6%
Very irrelevant	1	3%

The results in Table 4.7 shows that many pupils have high expectations upon their completion of their college schools that have high hopes of being employed after having acquired their college skills as shown on the table above at 46% saying the skills got are relevant and 3% saying that the skills acquired are very irrelevant to the job market so there is need for the government to encourage innovations by investing in these institutions with the latest state of art facilities/equipment to make the pragmatic Kenyans come out fully equipped to enter the job market. Also there is need to use modern training infrastructure to improve on quality in terms of physical facilities, ICT and other that comes with modernity.

**Table 4.8: Students' highest level of education**

	Frequency	Percentage
KCPE	13	46.6%
O level	7	25%
A level	8	28.5%
University education	0	

Table 4.8 students education both in the institutions of technology and village polytechnics, the O level students at 53.5% were more than their KCPE counterparts which came second at 40.6%. these institutions more so the institutions of technology had many form four leavers as compared to the village polytechnics which has fewer of form four levels, village polytechnics had mainly standard 8 school leavers or even other who joined and had not completed their first level of education. Some teachers complained of low entry levels but I believe when this it is raised currently the enrolment can go down. Therefore there is need to change the constitution to make it practical oriented than the exam being currently used as the means of success. Therefore, it calls for this kind of education to be open to be left for those who show interest so that they can work hard to get the rightful needed skills that will make them productive Kenyans in the surroundings they live in. and lastly, certification should be based on what skills one has acquired as opposed to the academic certification which may not truly reflect the rightful skills and the talent one has. Though what was lastly seen is that most of these students



does not differentiate between A' level and O' level as many were answering questions mistaking for O' level to for A level.

**Table 4.9: To what extent do you think the following factors affect the development of technical education in Kenya?**

	Frequency	Percentage
Trainees attitudes	19	25.7%
Trainers attitude	14	21.2%
Training facilities	12	18.8%
Government policy on TVET	7	10.6%
Cost of training in TVET	8	12.2%
TVET curriculum	8	12.2%

The data on Table 4.9 shows that development of technical education in Kenya is mainly affected by the trainees' attitudes at 25.7%, these attitudes that they had the high expectations they have upon the completion of these colleges put them above board, followed by the trainers' attitude at 21.2 %, the training facilities came at their place of 18.8%, meaning there is need to have high quality trainers plus the facilities to make the training of the trainees to be qualitative and thus supports the topic the institutional factors that support quality training in TVET institutions. Cost of training in TVET and TVET curriculum came in at fourth position at 12.2%. Meaning currently TVET curriculum is affordable, there is need for the curriculum to be charged

to make it more practical oriented as opposed to the currently exam oriented, and lastly government policy on TVET came last at 21.6% meaning most students are ignorant of government take on TVET education which is currently active through it has not gained the political will to make it vibrant.

**Table 4.10: To what extent is TVET education relevant to the following?**

Employment opportunity	Very relevant		Moderate relevant		Fair relevant		Not relevant		Very irrelevant	
	F	%	F	%	F	%	F	%	F	%
Self employed	10	19.6%	5	10.8%	3	9.6%	3	30%	2	20%
Further education	9	17.6%	4	8.6%	9	29.0%	4	40%	1	10%
Nation building	10	19.6%	11	23.9%	2	6.0%	2	20%	3	30%
Social cohesion	7	13.7%	9	19.5%	6	19.3%	1	10%	2	20%
Moral integrity	7	13.7%	11	23.9%	5	16.1%				
Quality standard life	8	15.6%	6	13.0%	6	19.3%				

Table 4.10 points that students when asked their expectations towards employment upon completion many said 19.6% had their expectation high

saying the employment opportunity that will come with this training is very high as the column of very relevant had the highest score. This tied with the nation building since employment and nation building is quite intertwined, for you to build the nation one must have the right skills for production in the country. Other said they need this education for further education at 17.6%. Social cohesion and moral integrity tied came in the fourth place at 13.7%, while the quality standard life came in the third place at 15.6% meaning employment, self-employment, nation building and lastly quality life is key in this training and all this strives towards quality training.

**Table 4.11: Considering what your programme is expected with practical skills, how do you rate the following in your institution?**

Course syllabus	of		Very adequate		Adequate		Very inadequate		Not adequate	
			F	%	F	%	F	%	F	%
Learning hours for skills acquisition and development			14	41.1	9	26.4	4	22.2	1	5
Time allocated for practical lessons			9	29.0	8	23.5	4	22.2	6	35.2
Qualified trainers			5	16.1	5	14.7	4	22.2	6	35.2
Time allotted for coverage of the course			6	19.3	12	35.2	6	17.6	4	11.7

Table 4.11 shows the students response when asked what the programme is expected to provide one with practical skills learning hours for skills acquisition and development came in first at 41.1% because the skills are key and therefore requires more time. Time allocated for practicals came in the second place of 29.0% or for innovation one should be given enough time to try to achieve what one is expected of them. Time required for the completion of the course is third at 19.3%, this is a necessity for one to be able to complete what they are expected of and lastly trainers came in last at 16.1%.

**Table 4.12: How would you rate influence of the following factors on the development of technical education in Kenya?**

Labour market needs	Very influential		Influential		Less influential		Non-influential	
	F	%	F	%	F	%	F	%
Relevance of TVET curriculum to the job market	10	15.1%	13	22.4%	7	21.8%	2	11.7%
Quality of trainers	14	21.2%	11	18.9%	1	3.1%	2	11.7%
Adequacy of training equipment	10	15.5%	11	18.9%	6	18.7%	2	11.7%
Status of physical facilities and modern equipment	12	18.1%	8	13.7%	8	25%	1	5.8%
Relevance of training curriculum /books	11	16.6%	8	13.7%	6	18.7%	4	12.5%
Management of TVET programme	9	13.6%	9	15.5%	4	12.5%	6	35.2%

Table 4.12 shows that when students were asked on the influence of technical education many believed that the quality of trainers is key to the success of institute of technology training at 21.2%, this was followed closely with, state of physical facilities at 18.1%. Relevance of training curriculum / books at 16.6%. In the third place was the relevant adequacy of training equipment at 15.5% with the relevance of TVET curriculum in the job market at 15.1% and lastly management of TVET came last at 13.6%. So quality trainers need to be well versed with modern innovation is the job market to make learning in these institutions a success.

**Table 4.13: Challenges facing TVET in light of quality training development in Siaya, Kenya**

	<b>Frequency</b>	<b>Percentage (%)</b>
Negative attitude	4	17.3%
Poverty	2	8.6%
Lack of well-structured curriculum	4	17.3%
Payment of teacher	1	4.3%
Seminars	2	8.6%
Equipping workshop	7	30.4%
Lack of adequate funding	2	8.6%
Staffing	1	4.3%
	<b>23</b>	

Table 4.13 shows teachers response when asked on equipping workshop came in first in this category as it is only through this that latest technology are introduced to the trainees which later replicated to the societal development, this was first at 30.4% followed by lack of well-structured curriculum, 17.3% negative attitude which tied with lack of well-structured curriculum. Lack of adequate funding at 8.6% tied with poverty and seminars at the same percent. This could be attributed to the fact that with facilities taken care of the rest could just follow, so the latest equipment and facilities are the yardstick through which these TVET quality training can be achieved. When asked for poverty as a challenge it scored so little only 4.3% and lastly payment of teachers and things that appertains to the staff staffing came in last at 0.0%, this can be due to this normally follows a last trend as some latest technology equipment likely may even replace some of the staff. These use to be a talk that the teaching fraternity in the near future could face extinction due to the installation of latest computer technology which could teach a large number of students through a video or the so called teleconferencing.

This is supported by Oroni Wilson, G.C. (2012) on the challenges facing technical education on teachers.

**Figure 4.4: Challenges facing technical teachers in TVET institutions**

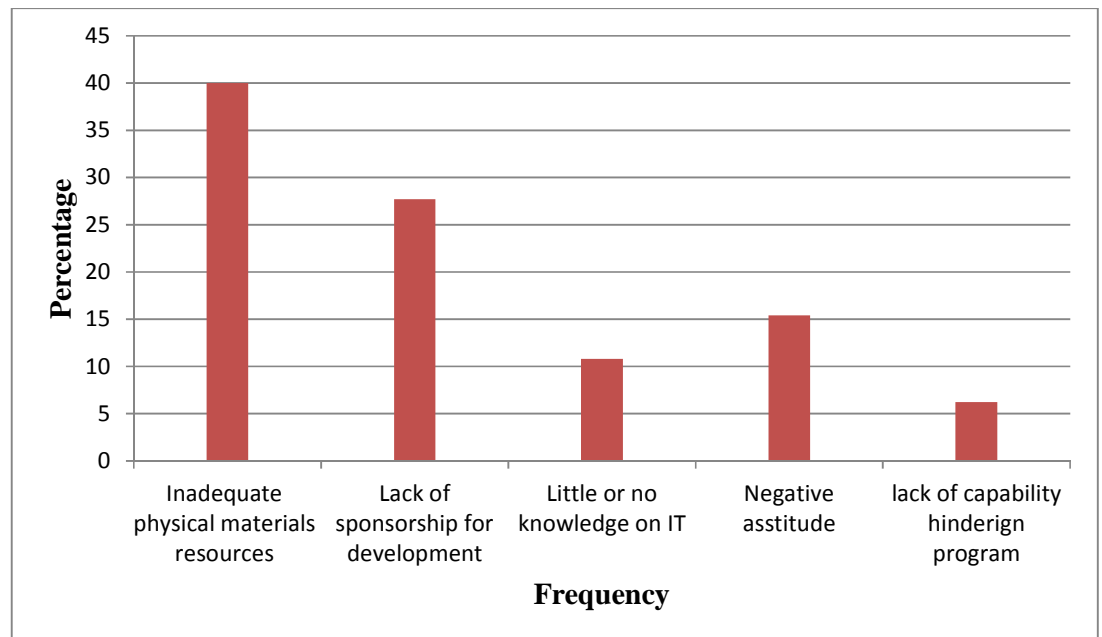


Figure 4.4 Oroni, Wilson (2012) confirms the analysis on table 4.13 that 40% of the sample teachers identified inadequate physical / material resources as the major challenge facing technical education teachers in Kenya. this was followed with lack of sponsorship for self-development as reported by 27.7% of the sample teachers. Other notable challenges were; negative attitudes towards technical training 15.4%, little or lack of knowledge in IT (10.8%); and lack of capacity building programmes 6.2%. These results imply that other than the competency challenges, there exist other infrastructural challenges that technical teacher encounter in their operation.

#### **4.5 Research question how institutional factors influence technical vocational entrepreneurship training in Siaya Sub-county**

##### **4.5.1 How do use of physical facilities affect quality training in TVET**

When teachers were asked their opinions on the state of physical facilities or simply infrastructure, the response was that the state of equipment is not at par and does not match the current trend in the industry and there is need for the equipment to be upto date with the modern trend in the market, also there is need for the equipment to be adequate for all the learners to get adequate for quality training.

##### **4.5.2 To what extend do skills taught affect access to employment**

Many of the students themselves believed that after their training or upon the completion of their training, they will be able to access jobs or some said they will be self-employed, but some few believed that this education will enable them further their education meaning they want to pursue further education. Teachers wanted a curriculum that will enable them be schooled upto doctor of philosophy level that is rising slowly within the ranks as in other professions. Therefore, both teachers and students tend to agree that the skills acquired will be of good use meaning employment will be attained if not self-employment, and therefore they wanted the political class at the village level to take the role of joining hands with them to make it a success story knowing very well that the society has not embraced it well, they wanted a positive attitude towards its future progress by the public and the private stakeholders



joining hands to let many join and increase the enrolment rate which is currently down coupled with high drop-out rate due to the society negative perception.

#### **4.5.3 In which ways do courses offered affect production of quality middle level workforce**

In a nutshell these are the challenges faced by the teachers as they teach the trainees.

**Table 4.14: Teachers' challenges while teaching trainees in TTIs**

<b>Challenge</b>		<b>Frequency</b>	<b>Percentage (%)</b>
Lack of workshop	No	17	77.2
	Yes	6	19.8
Lack of relevant tools	No	7	31.8
	Yes	15	69.2
Outdated machines	No	10	45.4
	Yes	12	54.6
Lack of relevant textbooks	No	13	59.0
	Yes	9	41.0
Lack of insufficient practical lessons for trainees	No	12	54.6
	Yes	10	45.4
Irrelevant syllabus	No	15	68.1
	Yes	7	21.9
Inaccessibility of internet information	No	15	68.1
	Yes	7	21.9
Low entry mark of trainees	No	7	21.9

	Yes	15	68.1
Lack of funds to buy workshop materials	No	9	40.9
	Yes	13	59.1
Poor linkage between industries and TTIs	No	5	22.7
	Yes	17	77.3
Few lecturers in the department	No	5	22.7
	Yes	17	77.3
Inadequate physical facilities	No	9	41
	Yes	13	59
Fair remuneration	No	4	18.2
	Yes	18	81.8

Table 4.14 shows the responses that teachers had challenges and these include; outdated machines 54.6%, low entry mark of trainee 68.1%, lack of funds 59.1%, poor linkage between industries 77.3% and a few teachers in the department with 77.3%, inadequate physical facilities 59% coupled with lack of sufficient modern equipment is common in most institutes and this might not be in favor with technical quality education. (ADF, 2003). Attending seminars and workshops is one way of meeting experts in one's field and obtain valuable information. In such forums, one is able to share information, experiences, problems and solutions with professional colleagues (Fabusoro et al, 2008).

## **CHAPTER FIVE**

### **SUMMARY, CONCLUSIONS AND RECOMMENDATIONS**

#### **5.1 Introduction**

This chapter summarizes the research process briefly. This chapter also provides a summary of main findings of the study, conclusions and recommendations for further research.

#### **5.2 Summary of the study**

The purpose of the study identified institutional factors influencing quality training in Technical Vocational and Entrepreneurship Training in Siaya Sub-county, Siaya region. This study is aimed at coming up with recommendations that could help institutes the technology to improve on their trainings for education implementation. The objectives of the study were to find institutional factors that influence quality training in Technical Vocational and Entrepreneurship Training.

Literature review focused on TVET for human capital development and employment in Kenya. Importance of technical education ,influence of teaching learning resources on production of middle level workforce in TVET institutions and influence of courses offered on production of middle level workforce in TVET institutions in Kenya. To assess the extent to which physical facilities in TVET influences skills needed in industries, and lastly

the extent to which industrial attachment influences skills used in business organizations.

Descriptive survey research design was adopted. The instruments used were questionnaire. The main target population were teachers and students in institute of technology. Data was analysed using the Statistical Package for Social Sciences (SPSS) and results resorted in form of tables, graphs and pie charts.

### **5.3 Summary of the Finding**

The results indicated that there was a general consensus that there is need to renumerate teachers well in terms of salaries, followed by building modern workshop with relevant equipment and facilities. However, the workshop and equipment could have taken first priority but teachers felt that they need to be well remunerated so as to motivate them to work towards achieving what is needed by the institutions. When well remunerated and now with the right equipment, then it will be possible for quality to be achieved.

Seminars and workshops took position three as they say there are no seminars/ / workshops that are organized to make them update themselves with latest knowledge in the market, there is need for these teachers to be in-serviced. Also there is need for government to increase their financial support in terms of bursaries and grants to better the infrastructure and to continue relentlessly

by creating awareness and networking in the local political networks. This will make the already negative perception that exist as pertains to this training to be well received by the local and community at large.

The other view was that the staffing currently is not enough and therefore there is need to employ more instructors/teachers. Currently, they employ more support staff to help them achieve their objective of quality teaching with resources that are not enough. The last view was that some wanted that there is need to test students practically as compared to the written exams, reasons sighted was some good students were not able to pass the written exam though they were good in practicals and vice versa. So in this, some said that there is need to increase the entry behavior to curb in this. Moreso, in institute of technologies as compared to youth polytechnics.

#### **5.4 Conclusions**

The use of modern equipment in technical institutes is key if we want to make the training of the trainee to be relevant to enhance quality. There is need for a correct match between the skills being imparted by the teachers to match those needed in industries and business organizations, so there is a grave need to constantly in-service teachers and motivate them. The teaching / learning resources need to be those that are of current trending in the world of work to make the trainees to use the already inculcated skills in the world of work. All the causes provided by the government should be those that makes trainees to

be absorbed in the world of work faster, these skills need to be relevant to the field of work. Teachers also pointed out that they faced challenges like: outdated machines, low entry mark of trainees, lack of funds, poor linkages between industries, few teachers in departments. On the skills industries more hours needed for practical lessons and review of curriculum to fit the industry and business organization needs.

### **5.5 Recommendations**

Based on the above findings and conclusions, the researcher recommends the following:

- Provision of adequate equipment / facilities to the technical training institutions so as to address the challenge of lack of modern resources.
- Creating a direct match with the skills taught in TVET institutions to match the right skills needed in industries and business organizations.
- Embrace stakeholders to put in a joint effort towards laying modern infrastructural lay out to match those skills that are needed in industries and business organizations.

## **5.6 Suggestion for further studies**

- i. The impact of stakeholders on the sustainability of the technical education institution.
- ii. The role of industrial and technical education trainee competency.
- iii. Exposure to training equipment and facilities has a direct influence on knowledge and skill level competencies.
- iv. Factors causing the drop-out to boy-child out of TVET institutions.
- v. The challenges faced by teachers in TVET as they carry out the services of instructing the trainees in these institutions.

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APPENDICES  
APPENDIX I  
LETTER OF INTRODUCTION



UNIVERSITY OF NAIROBI  
COLLEGE OF EDUCATION AND EXTERNAL STUDIES  
SCHOOL OF EDUCATION  
DEPARTMENT OF EDUCATIONAL ADMINISTRATION AND PLANNING

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OR P.O. BOX 92  
KIKUYU

25<sup>th</sup> March, 2015

Our Ref: UON/CEES/SOE/A&P/1/4

TO WHOM IT MAY CONCERN

Dear Sir/Madam

SUBJECT: CHRISPINE OGOLAH YEWAH - REG NO. E55/62961/2011

This is to certify that **Chrispine Ogolah Yewah** is our Master of Education student in the Department of Educational Administration and Planning at the University of Nairobi. His area of specialization is Economics of Education. He has successfully completed his course work and is summarizing his research on "*Institutional Factors Influencing Quality Training in Technical, Vocational and Entrepreneurship Training in Siaya Sub County Region, Kenya*".

Any assistance accorded to him will be highly appreciated.

Yours faithfully,

   
**DR. GRACE NYAGAH**  
CHAIRMAN  
DEPARTMENT OF EDUCATIONAL ADMINISTRATION AND PLANNING

GN/nd

**APPENDIX II**  
**STUDENT QUESTIONNAIRE**

Dear respondent,

This is to request you to spare some time and fill this questionnaire. The purpose of this questionnaire is to collect data for my Masters studies that I am currently pursuing at the University of Nairobi. I am studying the **Institutional factors that enhance quality training in TVET in Siaya Region Kenya**. I take this opportunity to assure you that the information you will provide will not be used for any other purpose safe that which is stated here. All confidentiality will be maintained. Please respond to all the questions as honestly as possible. Do not write your name anywhere in this document.

**SECTION A**

1. Please indicate your gender. Male [ ☐ ] Female [ ☐ ]

2. What is your age group?

15-19 years [ ☐ ]

20-24 years [ ☐ ]

25-29 years [ ☐ ]

30-34 years [ ☐ ]

Over 35 years [ ☐ ]

3. What category is your institution?

Public Technical [ ☐ ]

Private Technical [ ☐ ]

4. What is your highest level of formal education

KCPE [ ]

‘O’ Level [ ]

‘A’ level [ ]

5. What is the highest level of your parent’s education? Tick appropriately

Level of Education	Father	Mother
Primary		
Secondary		
College		
University		

6. How many siblings are there in your family

i) 1-2 [ ]

ii) 3-4 [ ]

iii) 5-6 [ ]

iv) Over 7 [ ]

7. Please identify the course you are currently pursuing from the following;

i) Accounting

ii) Business

iii) Secretarial

iv) Food and Beverage

- v) Institutional management
- vi) Applied Biology
- vii) Mechanical Engineering
- viii) Motor Vehicle mechanic
- ix) Electrical engineering
- x) Building and Construction
- xi) Any other (Specify)\_\_\_\_\_

## SECTION B

8. To what extent is TVET education relevant to the following?

Area of relevance	Very Relevant 5	Moderate Relevant 4	Fairly relevant 3	Not relevant 2	Very irrelevant 1
Employment opportunity					
Self- employment					
Further education					
Nation Building					
Social Cohesion					
Moral Integrity					
Quality standard of life					

9. What would you say is the effect of Technical Education on employment opportunities in Kenya today?

- i) Very relevant [ ]
- ii) Moderate relevant [ ]
- iii) Fairly relevant [ ]



iv) Not relevant [ ]

v) Very irrelevant [ ]

10. To what extent do you think the following factors affect the development of technical education in Kenya?

<b>Factors</b>	Very Effective 4	Effective 3	Less Effective 2	Not Effective 1
Trainees attitudes				
Trainers attitudes				
Training facilities				
Government policies on TVET				
Cost of training in TVET				
TVET curriculum				

11. How would you rate the influence of the following factors on the development of technical education in Kenya?

<b>Factors</b>	Very Influential 4	Influential 3	Less Influential 2	Not Influential 1
Labour market needs				
Relevance of TVET curriculum to the job market				
Quality of trainers				
Adequacy of training equipment				
Status of physical facilities used for training				
Relevance of training materials and text books				
Management of TVET programmes				

12. (a) Considering what your programme is expected with practical skills, how do you rate the following in your institution?

<b>Course Syllabus coverage</b>	Very Adequate 4	Adequate 3	Very inadequate 2	Not Adequate 1
---------------------------------	--------------------	---------------	----------------------	-------------------

Learning hours for skills acquisition and development				
---	--	--	--	--

Time allocated for practical lessons				
--------------------------------------	--	--	--	--

Qualified trainers				
--------------------	--	--	--	--

Time allocated for coverage of the course				
---	--	--	--	--

b) Considering that your programme is expected to equip you with practical skill, does your institution organize trips to the following places?

- i) Industries                      Yes [    ]                      No [    ]
- ii) Factories                      Yes [    ]                      No [    ]
- iii) Jua Kali Industries      Yes [    ]                      No [    ]
- iv) Other (s) Specify.....

c) Does your institution organize industrial attachment for you?

Yes [ ]

No [ ]

13. How would you rate overall the current training equipment in your course/ institution?

i) Very Modern 3[ ]

ii) Modern 2[ ]

iii) Outdated 1[ ]

14. a) How many hours of practical lessons are allocated for skills acquisition and development per week in your course?.....

b) How would you rate the time allocated for skill acquisition and development in your course?

i) Very adequate 3[ ]

ii) Adequate 2[ ]

iii) Not adequate 1[ ]

15. By the time you finish your training, how would you rate your preparedness in terms of skills acquired during training?

i) Very adequately prepared 4[ ]

ii) Adequately prepared 3[ ]

iii) Fairly prepared 2[ ]

iv) Not Adequately prepared 1[ ]

16. In relation to work expectations, how would you rate your preparedness for the job market

- i) Very adequately prepared 4 [ ]
- ii) Adequately prepared 3 [ ]
- iii) Less Adequately prepared 2 [ ]
- iv) Not prepared 1 [ ]

17. (a) Does TVET have any challenges? Yes [ ] No [ ]

b) If 'Yes', List three such challenges

- i).....
- ii).....
- iii).....

19. What would you like to do most when you finish your training?

.....

**Thank you. God bless.**

**APPENDIX III**  
**QUESTIONNAIRE FOR LECTURERS IN TVET INSTITUTIONS**

Dear respondent

This is to request you to spare some time and respond to the following questions. The purpose of this questionnaire is to collect data for my Masters studies that I am currently pursuing at the University of Nairobi. I am studying the **institutional factors that influence quality training in technical, vocational and entrepreneurship training in Siaya region, Kenya**. I take this opportunity to assure you that the information you will provide will not be used for any other purpose save that which is stated here. All confidentiality will be maintained. Please respond to all the questions as honestly as possible.

1. Please indicate your gender [   ] Male   [   ] Female
  
2. Please indicate the name of your Institution:  
.....
  
3. What category is your institution? Public [   ] Private [   ]
  
4. Which department are you teaching currently?  
.....
  
5. How long have you taught in your teaching career (in years)?  
.....

6. What subject(s) do you teach?

.....

7. How many trainees do you have in your subject area?

.....

8. Are you trained to teach TVET courses in your college? Please indicate your professional qualification

.....

9. How often do you attend in-service courses, seminars/workshops on TVET?

Very Frequently 4 [ ] Frequently 3 [ ] Less Frequently 2 [ ]

Seldom 1 [ ]

10. Which methods/techniques are recommended by KIE for teaching TVET in your department? Please indicate three methods you frequently use;

i) .....

ii) .....

iii) .....

11. Please comment on the availability of teaching and learning materials in your college.

Very Adequate 4 [ ] Adequate 3 [ ] Inadequate 2 [ ]

Not Adequate 1 [ ]

12. What support do you receive from the government to promote effective teaching of TVET in your college? Please specify three such support;

- i) .....
- ii) .....
- iii) .....

13. Please indicate the effect of TVET that influence quality training in Siaya region Kenya?

Very high influence 4[ ] High Influence 3[ ] Fair Influence 2[ ]  
No Influence 1 [ ]

14. What factors affect the development of TVET in Kenya today? Please indicate 4 such factors;

- i) .....
- ii) .....
- iii) .....
- iv) .....

15. Do you think there is a mismatch between TVET and quality training in Siaya region, Kenya today? Please indicate the extent of this mismatch.

Very high mismatch 4[ ] High n=mismatch 3[ ] Fair mismatch  
2[ ] No mismatch 1 [ ]



18. How would you rate the relevance of the current TVET programmes in quality training in Siaya region, Kenya?

Very relevant 4[ ] Relevant 3[ ] Less relevant 2[ ]

Not relevant 1[ ]

19. Do you think TVET can fast track quality training in Siaya region, Kenya? If yes, Please state three ways how this can be done;

i) .....

ii) .....

iii) .....

20. Are there policy issues that should be readdressed in order for TVET to fast track quality training development: If yes, please state three such policy issues;

i) .....

ii) .....

iii) .....

21. Please state three main challenges facing TVET in light of quality training development in Siaya region, Kenya.

i) .....

ii) .....

iii) .....

22. What would you suggest as solutions in addressing these challenges?

i) .....

ii) .....

iii) .....

**Thank you. God bless.**

APPENDIX IV  
RESEARCH AUTHORIZATION



**NATIONAL COMMISSION FOR SCIENCE,  
TECHNOLOGY AND INNOVATION**

Telephone: +254-20-2213471,  
2241349, 310571, 2219420  
Fax: +254-20-318245, 318249  
Email: secretary@nacosti.go.ke  
Website: www.nacosti.go.ke  
When replying please quote

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

Ref: No.

Date:  
**21<sup>st</sup> April, 2015**

**NACOSTI/P/15/2642/5597**

Chrispine Ogolah Yewah  
University of Nairobi  
P.O. Box 30197-00100  
**NAIROBI.**

**RE: RESEARCH AUTHORIZATION**

Following your application for authority to carry out research on *“Institutional factors influencing quality training in Technical, Vocational And Entrepreneurship Training in Siaya Sub-County Kenya”* I am pleased to inform you that you have been authorized to undertake research in **Siaya County** for a period ending **25<sup>th</sup> September, 2015.**

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

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

  
**DR. S. K. LANGAT, OGW**  
**FOR: DIRECTOR-GENERAL/CEO**

Copy to:

The County Commissioner  
Siaya County.

The County Director of Education  
Siaya County.

*National Commission for Science, Technology and Innovation is ISO 9001:2008 Certified*

## APPENDIX V

### RESEARCH PERMIT

**THIS IS TO CERTIFY THAT:**

**MR. CHRISPINE OGOLAH YEWAH**

**of THE UNIVERSITY OF NAIROBI,**

**0-40620 siaya,has been permitted to**  
**conduct research in Siaya County**

**on the topic: INSTITUTIONAL FACTORS**  
**INFLUENCING QUALITY TRAINING IN**  
**TECHNICAL,VOCATIONAL,AND**  
**ENTREPRENEURSHIP TRAINING IN SIAYA**  
**SUB-COUNTY KENYA**

**for the period ending:**  
**25th September,2015**

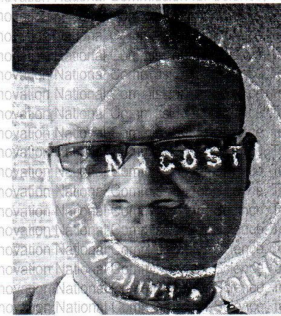


**Applicant's**  
**Signature**

**Permit No : NACOSTI/P/15/2642/5597**

**Date Of Issue : 21st April,2015**

**Fee Received :Ksh 1,000**





**Director General**  
**National Commission for Science,**  
**Technology & Innovation**

- 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**



**National Commission for Science,**  
**Technology and Innovation**

**RESEARCH CLEARANCE**  
**PERMIT**

**Serial No. A 4977**

**CONDITIONS: see back page**