A COMPARATIVE STUDY OF FACTORS INFLUENCING PERFORMANCE OF STUDENTS IN TECHNICAL COURSES (MECHANICAL AND AUTOMOTIVE): A CASE OF NAIROBI TECHNICAL TRAINING INSTITUTE AND KENYA CHRISTIAN INDUSTRIAL TECHNICAL INSTITUTE.

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AUGUST 2005
DECLARATION

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

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SUPERVISOR’S APPROVAL

I/we confirm that the work in this proposal was carried out by the candidate under my/our supervision.

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CHAIRMAN’S APPROVAL

Signature ___________________________ Date 21/10/05
Dr George Gongera
Chairman, Department of Business Administration.
DEDICATION

I would like to dedicate this project to my parents, Chris Lati and Rebecca Lati, for their steadfast support during this course. I would also like to dedicate it to my brothers and sister, Felix, Lati and Abby for their support and encouragement throughout this course.
ACKNOWLEDGEMENT

I would particularly wish to single out Mr Obere, my supervisor who was very supportive and continuously provided me with guidelines throughout my project, thank you very much.

My thanks also go to the members of staff of the School of Business Studies for their guidance throughout my course.

I am also grateful to all my colleagues, MBA 2002 for their companionship throughout this period of study. To all I say thanks.

I also wish to acknowledge my immediate family for their understanding while I was carrying out my research.
ABSTRACT

Technical education and Vocational training has existed in Kenya for almost as long as formal education. The introduction and expansion of technical and vocational education in Kenya was witnessed in large scale in the early 1970's. This was more of the government’s reaction to public pressure for increase in practical skills in the field of general secondary education. Technical education was held under the 7-4-3 system before it was changed to the 8-4-4 system by the government in 1982. This change to the new system placed a great challenge to vocational and technical training programmes in the country. It also led to low levels of student performance in technical subjects in technical training institutes. A research done, (UNICEF, 1999), reported that “two major issues facing public TEC-VOC institutions are the inadequacies in the provision and maintenance of physical facilities (classrooms, lecture theatres workshops and laboratories). The literature reviewed was on studies done on motivation, attitudes, equipment and facilities. Sources of literature were from secondary sources mostly from research done by the Kenya Institute of Education (KIE). So the question was asked about the factors that influence performance of students in technical subjects. The general objective of this study was to find out the factors that affect performance of mechanical and automotive subjects in NTTI and KCITI. The research data was collected using questionnaires made up of both structured and unstructured questions. The target population were teachers and students. The data collected was analysed using statistical methods of data analysis and presented using tables. The findings of this study showed that NTTI had better performance than KCITI in spite of having old and obsolete equipment, location of the institute in a residential area and industrial attachment for the students.
List of Tables and Figures

Figure 2.1 Model of Motivation 14
Figure 2.2 Conceptual Framework 25
Table 4.1 Location and its effect on Student Performance 31
Table 4.2 Motivation and its effect on Student Performance 32
Table 4.3 Motivation and its effect on Lecturer Performance 32
Table 4.4 Equipment Availability and Student Performance 33
Table 4.5 Student Attitude and Performance 34
Table 4.6 A Industry Stakeholders and Subject Performance 35
Table 4.6 B Effect on Performance as a result of the Relationship between the Institutes and Industry Stakeholders 35
Table 4.6 C Industry Knowledge Requirements 36
# TABLE OF CONTENTS

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Title Page</td>
<td>i</td>
</tr>
<tr>
<td>Declaration</td>
<td>ii</td>
</tr>
<tr>
<td>Dedication</td>
<td>iii</td>
</tr>
<tr>
<td>Acknowledgement</td>
<td>iv</td>
</tr>
<tr>
<td>Abstract</td>
<td>v</td>
</tr>
<tr>
<td>List of Tables/Figures</td>
<td>vi</td>
</tr>
<tr>
<td>Table of contents</td>
<td>vii</td>
</tr>
<tr>
<td>Abbreviations</td>
<td>x</td>
</tr>
<tr>
<td>Chapter One</td>
<td></td>
</tr>
<tr>
<td>1.0 Introduction</td>
<td>1</td>
</tr>
<tr>
<td>1.1 Background</td>
<td>1</td>
</tr>
<tr>
<td>1.1.1 Equipment</td>
<td>5</td>
</tr>
<tr>
<td>1.1.2 Staffing</td>
<td>7</td>
</tr>
<tr>
<td>1.1.3 Students</td>
<td>8</td>
</tr>
<tr>
<td>1.1.4 Performance</td>
<td>9</td>
</tr>
<tr>
<td>1.2 Statement of the Problem</td>
<td>10</td>
</tr>
<tr>
<td>1.3 Research Objectives</td>
<td>10</td>
</tr>
<tr>
<td>1.4 Research Questions</td>
<td>11</td>
</tr>
<tr>
<td>1.5 Significance of the study</td>
<td>11</td>
</tr>
<tr>
<td>1.6 Scope of the study</td>
<td>11</td>
</tr>
<tr>
<td>1.7 Limitation of the study</td>
<td>12</td>
</tr>
<tr>
<td>Chapter Two</td>
<td>13</td>
</tr>
<tr>
<td>-------------------------------------------------</td>
<td>----</td>
</tr>
<tr>
<td>2.0 Literature Review</td>
<td></td>
</tr>
<tr>
<td>2.1 Introduction</td>
<td></td>
</tr>
<tr>
<td>2.2 Theoretical Review</td>
<td>13</td>
</tr>
<tr>
<td>2.2.1 Motivation</td>
<td>13</td>
</tr>
<tr>
<td>2.2.2 Equipment and Facilities</td>
<td>19</td>
</tr>
<tr>
<td>2.2.3 Attitudes</td>
<td>21</td>
</tr>
<tr>
<td>2.2.4 Industry Stakeholders</td>
<td>21</td>
</tr>
<tr>
<td>2.2.5 Technical Training</td>
<td>22</td>
</tr>
<tr>
<td>2.2.6 Staffing</td>
<td>24</td>
</tr>
<tr>
<td>2.2.7 Conceptual Framework</td>
<td>25</td>
</tr>
<tr>
<td>2.3 Critical Review</td>
<td>26</td>
</tr>
<tr>
<td>2.4 Summary and Gabs to be filled by the Study</td>
<td>27</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Chapter Three</th>
<th>28</th>
</tr>
</thead>
<tbody>
<tr>
<td>3.0 Research Methodology</td>
<td></td>
</tr>
<tr>
<td>3.1 Research Design</td>
<td></td>
</tr>
<tr>
<td>3.2 Population</td>
<td></td>
</tr>
<tr>
<td>3.3 Sample Design</td>
<td></td>
</tr>
<tr>
<td>3.4 Data Collection Instruments and Procedure</td>
<td></td>
</tr>
<tr>
<td>3.5 Data Analysis</td>
<td>30</td>
</tr>
<tr>
<td>3.6 Expected Outcomes</td>
<td>30</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Chapter Four</th>
<th>31</th>
</tr>
</thead>
<tbody>
<tr>
<td>4.0 Research Findings and Interpretations</td>
<td></td>
</tr>
</tbody>
</table>
ABBREVIATIONS

C and G - City and Guilds
GOK - Government of Kenya
HOD - Head of Department
KCITI - Kenya Christian Industrial Technical Institute
KIE - Kenya Institute of Education
KSTC - Kenya Science Teachers College
KTTC - Kenya Technical Teachers College
NTTI - Nairobi Technical Training Institute
TEC-VOC - Technical Vocational
TSC - Teachers Service Commission
TTI - Technical Training Institute(s)
UNICEF - United Nations International Children's Emergency Fund
CHAPTER ONE

1.0 INTRODUCTION

1.1 Background to the study

Technical education and vocational training has existed in Kenya in one form or another for almost as long as formal education. In fact training was provided by the Mission, authorities for brick makers, mason, carpenters, and blacksmiths even before the education department was established in 1912. Then in 1913 a government school was opened with courses in practical subjects. During the next few years all of the schools built had an "industrial" section to which pupils were transferred after reaching a certain standard of primary education.

In colonial times, Kenya had a segregated education system. Africans attended poorly equipped schools, Europeans went to the best while the Somali, Indians and Arabs went to the medium schools. Curriculum was decentralized to the point where each teacher could design and implement individual curriculum materials. Schools offered general education with some agriculture. In 1924 a Native Industrial training depot was started at Kabete to offer trade skills to ex-servicemen who had returned from the 1st world war. By 1950, eight other depots had been started in different parts of the country. These depots were converted to Trade schools which later became ‘Technical and Trade schools’. In 1969, five new technical and vocational secondary schools started to train semi-skilled workers following the Wamalwa Commissions’ recommendations. The Technical and Trade schools were then renamed as “Technical and Vocational secondary schools, students entering were required to have passed highly in the certificate of Primary Examination. The course of 4-5 years at the end of which candidates sat for the
government trade test, Grade 3. Successful candidates were all absorbed into the industries.

In 1961, the Kenya Polytechnic was opened in Nairobi to continue offering the City and Guilds Technician courses hitherto provided by the Royal Technical College (now University of Nairobi) and provide vocational courses leading to craftsman certificates.

By the end of the 60’s the population of primary and secondary schools leavers had grown way beyond the opportunities available for training. The demand for craft courses was greater than the Kenya Polytechnic could meet. So the government introduced the craft part 1 syllabi of the C and G of London in the technical and vocational schools with the aim of preparing students for direct job placement. The course took 4 years at the end of which candidates sat for the C and G craft part 1 exam.

By the end of the 1980’s, general education was found to offer no guarantee of employment. In 1981, the government set up the Presidential Working Party on the Establishment of a Second University in Kenya.

With this, the government abandoned the previous system of 7 years primary, 4 years secondary, 2 years for form 5 and 6, and 3 years of university education for the 8-4-4 system:-8 years of primary education, 4 years secondary and 4 years general undergraduate education.

The history of formal education systems in almost all developing countries reveals consistent attempts to diversify secondary education away from its dominant academic norm into vocationalised direction through introduction of a wide range of programmes. A broad range of goals have been articulated for such programmes. They range from the provision within school contexts of relevant skills, values, attitudes and knowledge for
modern sectors agrarian employment to the provision of solutions to problems of urban migration and unemployment.

In Kenya, the introduction and expansion of technical and vocational education was witnessed in a large scale in the early 1970’s. This was more a result of the government’s reaction to public pressure for increase practical skills in the field of general secondary education. The purpose of introducing these subjects was to “relate” national needs of people to work in craft and industrial-based, wage earning jobs to the need for increasing numbers of people to seek profitable self-employment in this type of work.

In 1982, the GOK, decided to restructure the entire education and replace the 7-6-3 system with 8-4-4 system. This change to the new system has placed a great challenge to vocational and technical training programmes in the country. (Source: Organisation of productive work in technical and vocational education in Kenya, Mbiti; UNESCO 1985)

Nairobi Technical Training Institute was in 1951 as a modern High School. It was catering for the Asian community and was even then a technical school. It was a skills secondary school as the areas taught then included, Mechanical Engineering and Carpentry and Joinery.

At independence, the school was changed to Technical High school and it was catering for all ethnic groups in the spirit of equal education. It continued to offer technical courses in the various areas. It offered both ‘O’ and ‘A’ levels.

The areas of training had expanded to include Mechanical, Woodwork, Electrical and Motor Vehicle Mechanics. ‘A’ level students were taking sciences i.e. Maths, Physics and Chemistry.
With the onset of the 8-4-4 system of education in 1986, along with other technical High schools, the change also came as Nairobi Technical Training Institute. Primarily then, the areas on offer were mainly Artisan Programmes and Accounts. The Artisan programmes were:- General fitter, Welding and Fabrication, Woodwork (C&J), Electrical Installation, Motor Vehicle Mechanics, ACNC in Business Studies.

Craft courses were introduced in the early nineties which included Mechanical Engineering, Electrical Installation, Motor Vehicle Mechanics, Science Laboratory Technology, Supplies Management and ACNC (later called KATC). These courses are still on offer except carpentry and joinery, which was phased out. Garment making was started in 1995.

Diploma courses started out in 1995 with Applied Biology. Other diploma courses i.e. Analytical Chemistry, Mechanical Engineering (Production and Plan), Electrical Engineering started in 1997, while Medical Laboratory and Pharmacy were started in 1998 and 2000 respectively. Business courses include Diploma in Supplies Management, Business Administration, Secretarial Studies, Sales and Marketing and KATC.

Over time, technical subjects offered at NTTI have grown. This has increased to certificates offered in various departments and governed by external examination bodies like City and Guild, ICM etc.

As well as the full time courses offered at the institute, part-time courses have also been introduced. These are carried out in the evenings and target the working class as well as those who did not qualify for the full time courses in terms of academic requirements.

Formally known as Christian Industry Training Centre, KCITI was started in 1958 with an aim of catering for the increased unemployed youth in Nairobi. Its main aim was to
help young men and women to acquire industrial skills in order to make them more employable and to supply the country with required trained manpower. This aims remains today and they charge minimum fees. It provides a 2 year course in carpeting, painting, sheet metal work welding, fitting and machining. Additionally training in building skills and mechanical subjects are taught. The main campus is located on 5 landscaped acres at the east end of Fifth Street in Eastleigh Section 2.

The enrolment of students for the full time courses has followed a trend that shows bias in the various subjects. Enrolment of females in the Mechanical and Automotive Departments is low though this seems to be changing. Enrolment of students in the automotive department has seen an increase in the enrolment of female students.

Looked at in any way practical subjects have the essence of having to perform or do a task. In both the mechanical and automotive practical subjects, there is the need to perform a task that brings out a tangible object. This usually involves using ones hands, ability, equipment and being under instruction. This affects the performance of practical subjects. There has to be a lot of training in order for the subjects to be effective on part both from the teachers and students.

1.1.1 Equipment

In general, these subjects are offered in both private and public technical training institutes. In both, equipment, teachers and students can affect the performance. There is however a conception those private technical training institutes perform better than public technical training institutes (Source: KNEC)
Equipment in any case affects the performance of any practical subject. The availability of modern equipment will always bring students up to speed with the changing technological world. In this case both the public and private technical training institutes can have equipment available to run an efficient practical class.

Equipment for all practical subjects is very vital. These aid the students in being able to visualize their theory lessons.

A study done by the Ministry of Education and Human Resource Development and UNICEF, 1999, reported that "two major issues facing public TEC-VOC institutions are the inadequacies in the provision and maintenance of physical facilities (classrooms, lecture theatres, workshops and laboratories)". However, private TEC-VOC institutions are sometimes sponsored by privately and will therefore generally have more up to date equipment. Overtime, however, technical training institutions have had contributions of equipment from industry players. According to the study, equipment is generally obsolete and not in tune with the rapidly changing employment market.

Kenya's education is financed from various sources, depending on the type of educational institution. Government maintained institutions are financed out of funds voted by parliament each year. Private institutions are run either by church organisations or by individuals. Churches raise money to subsidize education in their schools as well as charging moderate fees. (The international encyclopaedia on education). The availability of funds/capital can also affect the type of equipment the institutions can afford.
1.1.2 Staffing

The training of technical teachers dates back to 1968 when a technical teacher education department was established at the Kenya Polytechnic. The department was the forerunner of KTTC. Other institutions involved in the education of technical teachers include KSTC, Egerton University and Kenyatta University.

Private and public technical training institutes are staffed either from the TSC or “walk-in” teachers looking for teaching posts privately. Whatever the case, most teachers either pass through the universities that provide education programmes like Kenyatta, Nairobi, and Nairobi Universities leading to degrees in education or form KTTC, which provides diplomas in education. With the universities, the education programme is run under one course. After attending a 4 year education programme and 1 term teaching practice, the teachers apply to the TSC and get deployed.

Through KTTC, teachers pass first through technical training institutes where they get their education on various technical subjects. After doing a 3 year diploma course, KTTC gives a 1 year course on teaching methods with 1 term of teaching practice. Once through, like the university graduates also apply to the TSC for deployment to technical training institutes.

KTTC, while not offering degrees, does offer Diplomas in several areas of vocation and technical education and an Advanced Diploma in Electrical Engineering and Entrepreneurship education. As of 1989, KTTC was the “only institution in Kenya that produces professional technical teachers at the moment” (Ayot, Patel, Kiminyo, Orwa, Oketch and Godia, 1989, pg 329)
With the university programme, teachers can teach at both secondary and technical levels.

### 1.1.3 Students

Nairobi being the capital city has a wide catchment area for the students. Enrolment is high as Nairobi T.T.I is the only public technical training institute that is within the bigger Nairobi area. It is situated off Muranga Road along Mogira Road. Kenya Christian Industrial Training Institute is also located with the Nairobi area, at the end of Fifth Street in Eastleigh Section 2. It gives competition to NTTI in terms of student enrollement. This makes it attractive for students, especially with its easy accessibility to transport routes. Enrolment of students is high also due to advertisement done in popular newspapers like the Daily Nation. However, enrollement of female students has not been as high as that of male students especially in the mechanical and automotive courses. The catchment area is wide as the institute is surrounded by various schools (primary and secondary) that can be a source of students. These include Parkroad, Muslim, and Arya Vedic primary schools and Pangani Girls, Muslim, Ngara Girls, Jamuhuri Boys high schools as well as Starehe Boys.

For the various subjects that are offered the students need the correct academic requirements in order to be accepted. These are a minimum grade C-(Aggregate) for diploma courses and a mean grade of D-(Aggregate) for craft courses. This ensures that they will be ready to meet the challenges of the course.
1.1.4 Performance

The tables below, 1.1.4 A and 1.1.4 B show the performance of students in both institutes. An average performance in practical subjects was taken as an indicator. The years in consideration were from 2002-2004. No results were gotten from KCITI for the year 2002.

**MECHANICAL DEPARTMENT**

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<td>NTTI</td>
<td>56%</td>
<td>58%</td>
<td>59%</td>
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<tr>
<td>KCITI</td>
<td>-</td>
<td>57%</td>
<td>55%</td>
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*(SOURCE: AUTHOR)*

**AUTOMOTIVE DEPARTMENT**

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<th>2002</th>
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<th>2004</th>
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<tr>
<td>NTTI</td>
<td>76%</td>
<td>57%</td>
<td>77%</td>
</tr>
<tr>
<td>KCITI</td>
<td>-</td>
<td>57%</td>
<td>68%</td>
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*(SOURCE: AUTHOR)*

From the above tables, NTTI has a better performance than KCITI, with better performance in the automotive department.
1.2 Statement of the Problem

With teachers coming from either the University or KTTC, with the same background in technical education, students having the same grade qualifications for the courses, performance should be at the same level. However from the tables 1.1.5 A and 1.1.5 B there is a disparity in performance in automotive and mechanical practical subjects between NTTI and KCITI. This study intends to find out the disparity in performance of practical subjects in private and public T.T.I’s.

1.3 Research Objectives

The general objective of the study was to find out the factors that affect performance of mechanical and automotive practical subjects in T.T.I’s. The following specific objectives helped in achieving the above general objective.

1 To find out whether the facilities affects students performance.
2 To identify if motivation affects student performance.
3 To identify if motivation affects teacher performance.
4 To investigate whether equipment availability affects students learning ability.
5 To find out whether student attitude affects their performance.
6 To find out the requirements of industry stakeholders and their influence on subject performance.
1.4 Research Questions

1. There is a positive relationship between the physical environment and subject performance.
2. There exists a relationship between motivation and student performance.
3. There exists a relationship between motivation and lecturers’ performance.
4. There exists a relationship between equipment availability and students’ learning ability.
5. Student attitudes have an influence on performance.
6. There is a relationship between industry stakeholders’ requirements and subject performance.

1.5 Significance of the study

The findings of the study will be useful to technical training institutes by contributing basic information on how to improve performance on practical subjects. It will also aid in creating appropriate in-service courses for lectures to improve on their delivery skills.

1.6 Scope of the study

The research was carried out at Nairobi Technical Training Institute and Kenya Christian Industrial Technical Institute. The target group were a group of selected teachers and students from both institutes.
1.7 Limitation of the study

The study was limited by the following:-

1) FINANCES: The researcher did not have enough finances to carry out a thorough research, in terms of research through the internet, extensive and wide travel to various resource centers and payments of working costs.

2) ACCESSIBILITY: The researcher was faced by restricted access to materials in the institutes that were relevant to the study.

3) RESPONSE: There was a problem in the target population responding to the questionnaire especially with regard to the students.

4) TIME: Time was in-adequate for a thorough research.
CHAPTER TWO

2.0 LITERATURE REVIEW

2.1 Introduction

This literature review was mainly on motivation, equipment and facilities, and attitudes. While the researcher had been able to access literature on topics such as performance, motivation, equipment and facilities, little literature was found on the requirements of industry stakeholders.

Literature that has been done on performance has only been in the organisational environment. None has been done in the setting of a learning institution. However, some literature was available on the performance of technical subjects in some technical institutions. It gave recommendations on what can be done on performance. More needs to be done on the other factors that affect performance.

2.2 Theoretical Review

The literature reviewed in this chapter was acquired from the primary and secondary data collected by other researchers.

The review covered main areas as follows:

Facilities and Equipment, Motivation, Attitudes, and Industry Stakeholders

2.2.1 Motivation

Human motivation studies, in essence, to discover what is it that triggers and sustains human behaviour. A working definition of motivation is as follows:
'Motivation is the term used to describe those processes, both instinctive and rational, by which people seek to satisfy the basic drives, perceived needs and personal goals, which trigger human behaviour' (Cole, 1995).

A very basic and simplified model of motivation is shown in Figure 1. This suggests that a stimulus, such as hunger (physical) or the desire for company (social) gives rise to a response. This response takes the form of some kind of behaviour, which leads to an outcome, which is either satisfactory or unsatisfactory. Where the behaviour is appropriate, satisfaction is achieved. Where it is not, the stimulus remains in the form of frustration, and the process begins again.

Figure 2.1 Model of Motivation

Understanding human motivation is a complex matter. Sometimes a person’s motives may be clear to him, but quite puzzling to others. It is important for those in managerial and supervisory positions to be aware of these issues and to take account of their own prejudices in this area of their work. This is because our efforts to understand others are coloured by our attitudes towards them and the assumptions we make about their behaviour. If we assume that a particular group of workers is hardworking and reliable,
we tend to treat them with respect and trust; if however, we see them as lazy and unreliable, we are likely to treat them as requiring close control and supervision.

Work motivation has been defined as the process by which behaviour is energized, directed, and sustained in organizational settings (Steer and Porter, 1991). In literature, there are a number of theories that provide different conceptualizations of the factors that drive this process.

If the type of work a person does is important, can those specific characteristics that affect productivity, motivation and satisfaction be identified? A model has been developed by J. Richard Hackman and Greg R. Oldham (1996) that identifies five such job factors and their interrelationship. It is called the job characteristics model.

The model specifies five core characteristics or dimensions

1) Skill Variety- the degree to which a job requires a variety of different skills and talents

2) Task identity- the degree to which the job requires completion of a whole and identifiable piece of work.

3) Task significance-the degree to which the job has a substantial impact on the lines or work of other people.

4) Autonomy - the degree to which the job provides substantial freedom, independence, and discretion to the individual in scheduling the work and determining the procedures to be used in carrying it out.

5) Feedback- the degree to which carrying out the work activities required by the job results in the individual obtaining direct and clear information about the effectiveness of his or her performance.
With practical subjects, students will basically have to have a finished and if possible working model by the end of the set time. Using the above model the practice sessions can be broken down to understandable levels, so that the students can be able to see what will be achieved at the end to their lesson. With the feedback, there should be a clearer understanding of where they have gone wrong and how to correct the mistake. However, breaking down the particular lesson down to the core characteristics or dimensions might not be clear or become blurred in the every day to day practice session that also differs in their content. It can however, also be rearranged to suit the lesson planned and the time in which they are carried out.

Most lessons are carried out under the supervision of the course tutors. However, jobs that posses' autonomy gives the students a feeling of personal responsibility for the results; and that if the job provides feedback, the students will know how effectively they are performing. This might encourage improving on their performance.

Need theories attempt to pinpoint internal factors that energize behaviour. Needs are physiological or psychological deficiencies that arouse behaviour. They can be strong or weak and are influenced by environmental factors. Thus, human needs vary over time and place. One popular need theory is Maslow’s need hierarchy.

Physiological, safety, love, esteem and self-actualization.

Maslow said those five need categories are arranged in a prepotent hierarch. In other words, he believed human needs generally emerge in a predictable stair-step function. Accordingly, when one’s physiological needs are relatively satisfied, one’s safety needs
emerge, and so on up the need hierarchy, one step at a time. Once a need is satisfied it
activates the next hierarchy need in the hierarchy”.

All round, motivation affects both teachers and students. All are motivated to do better in
what they do, either to achieve bigger salaries and other benefits or to attain a certificate
that shows they performed well in their chosen subjects. With Maslow’s theory of need,
this should be reflected in the teacher’s motivational process. Have they achieved their
needs and have they moved up the hierarchy, achieving each to their satisfaction or are
they stagnating at a particular point? This might therefore be affected by the environment.
Is it conducive or not.

Achieving recognition from peers will motivate most students to perform well. However,
are they following the needs theory to be motivated or are they just fulfilling the need that
is immediate?

What kind of goals are most effective in motivating employees? How can managers set
motivating goals for the people who report to them? Maximally motivating goals should
be challenging but attainable. In other words, they should be high enough to inspire better
performance—but not so high that employees can never reach them. Goals should also be
specific, quantifiable and measurable. Can the same principle be applied to the classroom
situation? Can teachers set goals that the students can achieve and can students set goals
for themselves that they want to achieve? Here what comes into play is whether goals can
be set that are specific, quantifiable and measurable.

Expectancy Theory: The fundamental premise of expectancy theory is that people will
behave according to
1) Their perception, or beliefs, regarding the likelihood that their behaviour will lead to a certain outcome

2) How much they value the outcome

The more valued the outcome and the stronger the belief that an action will lead to the outcome, the stronger the person’s motivation to perform the action.

This theory was published by a psychologist in 1932 (E.C Tolman, 1932). According to expectancy theory, employee’s have two key beliefs linking 3 events. The employee’s work efforts, lead to some level of performance. Then performance results in one or more outcomes for the employee. The development of this theory of motivation has been based on the work of the American, V.H. Vroom, during the 1960’s. A key point is that an individual’s behaviour is formed not on objective reality but on his or her subjective perception of that reality. The core theory relates to how a person perceives the relationships between three things – effort, performance, and rewards. Vroom focused especially on the factors involved in stimulating an individual to put effort into something, since this is the basis of motivation. He concluded that there were 3 such factors each based on the individual’s personal perception of the situation. These were:-

1) **Expectancy**: i.e. the extent of the individual’s perception, or belief, that a particular act will produce a particular outcome

2) **Instrumentality**: i.e. the extent to which the individual perceives that effective performance will lead to desired rewards.

3) **Valence**: i.e. the strength of the belief that attractive rewards are potentially available.

(Vroom, 1964)
Effort alone, however may not necessarily lead to effective performance. Other factors are involved, such as the individual’s own characteristics (personality, knowledge and skills) and the way in which he perceives his role. Other factors which are not shown may also affect performance e.g. constraints of the job organisation, style etc. Effort, therefore, does not always result in effective performance.

The theories of motivation so far have been used in the corporate workplace. In the classroom situation do they apply? In all, people are an important source in ensuring that the goals/objectives are attained. For teachers and students there needs to be put in place motivational factors that will make them both motivated to give the best and to make the best that they have been give.

2.2.2 Equipment and Facilities

Most research has been focused on external efficiency of technical training institutions. Limited studies have examined the issue of internal efficiency to the instruction process. The transformation of physical resource in combined in institutes of technology to produce outputs such as graduates with technical knowledge and skills. Technical training in Kenya is very expensive since all equipment must be imported using scarce foreign exchange reserve. The three educational systems of primary, secondary and tertiary levels in Kenya are increasingly faced with resource scarcity and increasing unit cost. (Republic of Kenya 1997). To solve this problem there is need to improve internal operational efficiency to these institutions. According to Moses W. Ngware and Fredrick Muyia Nafukho (1996) inadequacy of facilities, material and equipment used in the instructional purposes hinder the acquisition of technical and vocational education. They
recommended the need for technical training institute to acquire modern equipment for instructional process.

According to the ILO (1996) report, most of the technical vocational training institutes do not have modern facilities. Thus they recommend the need to review and provide relevant quality facilities within the institute in order to facilitate relevant training to graduates who can fit to the current job replacement.

Although lecturers cited the following equipment as necessary, for both automotive and mechanical courses, they were not available in the institutions, overhead projectors, video machines brake efficiency testing equipment, general tools, the engines available were obsolete, models of specific equipment eg gear box, rear axle and suspension units, complete electrical wiring systems, complete vehicle model with all systems in working order, gange for measuring stress and strain, engine performance testing equipment, live engines, lathe machines, and oscilloscope machines. They also cited the inadequacy of course books and other reference material. (KIE September 1999).

Apart from the above, the research also found that the institutions experience shortage of the following materials equipment and facilities, textbooks, computers, modern typewriters, tools and equipment, laboratories, workshops and classrooms. Most institutes have not been able to acquire current technology skills and knowledge due to lace of funds. More research should be done to suggest the way forward on how to improve and implement relevant technology in technical institutes.
2.2.3 **Attitudes**

In the workplace, managers conduct attitude surveys to monitor such things as job and pay satisfaction. It is based on the assumption that attitudes somehow influence behaviour such as working hard. An attitude is defined as “a learning predisposition to respond in a consistently favourable or unfavourable manner with respect to a given object.” (Fishbein and Ajzen, 1975) People with positive attitudes towards the job tend to maintain their positive attitudes. Negative-attitude tend to remain negative. Those who move to different situations tend to maintain their prior attitudes. Thus, attitudes tend to be consistent over time and across related situations.

Individual differences in abilities and accompanying skills are a central concern for managers because nothing can be accomplished without appropriately skilled personnel. An ability represents a broad and stable characteristic responsible for a person’s maximum performance on mental and physical skills. A skill, on the other hand, is the specific capacity to physically manipulate objects. (Schmidt and Hunter, 1981). A successful performance depends on the right combination of effort, ability and skill. In all this a positive attitude is what in the final end determines how an individual performs in whatever task he is given.

2.2.4 **Industry Stakeholders**

Industry stakeholders most properly have the highest effect on performance. They set high standards that students have to achieve if they are to get places in the industry. As they are in business of making money, the stakeholders would want employees who know what they are doing and thus little money would be spent in retraining them to the standards that they need. This they usually try to achieve by having students do industrial
attachment with them. It also helps to give the lecturers an idea of what is needed in the industry when they are provided with feedback from the field.

2.2.5 Technical Training

From the beginning technical education was started so that it could equip school leavers with skills that will help them survive the working world.

Human resource is the greatest development asset any nation can possess. Kenya’s goal is that the labour obtains gainful employment but most modern economic activities require sophisticated technology and manpower with middle and high level of education and training. (Source: Studies in technical and vocational education, 1985). This being true most technical training institutes lack the said technology and training, could most of the manpower out there be well developed?

This started with the introduction of the 8-4-4 system of education where at each stage of the learning process a few skills were imparted. The main objective of the systems’ technical and vocational training is to improve the quality of training at all levels so that the trained manpower can be enhanced and sustain a high level of economic development which would in turn improve the quality of life by raising the standards of living. One way of enhancing and sustaining high level of economic development is to have a balanced and adequately trained manpower to serve in both low and high technology sectors of the economy. (Source: The ministry of technical training and applied technology). The 1999 KIE research also indicated that most students do not find appropriate places in which to do their apprenticeship and those who go placements were
not always engaged in useful work related to their work. This somehow defeats the main objective of the 8-4-4 training system: to have all well trained and equipped.

The standard of general education attained by an individual tends to set the level of work for which one can be trained. The level of training likewise tends to set the level of responsibility one can handle in an industrial situation whether formal or informal sector. Education and general training provides the basis upon which specific training for technical and administrative work can be offered in the industry for any specific field. Today the GOK lays great emphasis on the development and provision of technical and vocational training which broadly include programmes of study and training in technical and applied courses that provide both basic and specialised skills related to a career as vocation.

According to research done, the researchers found that most technical training institutes complained about lack of equipment that prevented the teachers from achieving set objectives. Another was inadequacy of course textbooks on the various units taught in Mechanical and Automotive practical courses. The research also found that lecturers were academically qualified to handle the course but some of them lacked training on teaching methodology. This could somehow affect the performance of the subjects and has to be looked into. From the time the research was done, has anything changed? (KIE 1999). One recommendation for lecturers was to provide in-service courses to update them on new trends in the job market. Another was to provide measures to provide adequate resources to the technical training institutes. In general what most technical training institutes experience in shortage of materials, equipment and facilities are textbooks computers, modern typewriters, tools and equipment, laboratories, workshops
and classrooms. Has the research by KIE yielded anything from 1999? Research should be done to find out whether things have improved and if this has an impact on subject performance.

2.2.6 Staffing

According to research done (KIE 1999), technical and vocational education teachers, teacher-trainers, and policy-makers must seek out the best and most relevant teaching/learning methods, techniques and practices in technical and vocational education for their effective adoption, adaptation and appropriate integration in the technical and vocational education/training classrooms. Teachers are employed by the Teachers Service Commission (TSC). The TSC is responsible for registration, establish and maintain a register of teachers, recruitment of teachers and confirmation of appointment, deployment, posting and transfer, promotion of teachers, remuneration, payment of salaries, leave, pension and death gratuity, discipline of teachers and maintenance of education standard. With all this work TSC should ensure that it also looks into the motivation of teachers if it is to maintain education standards. Kerre (1987) made a case for the need in Kenya to develop a high number of new teachers with a vocational and technical education. He concluded that among the three problems causing serious constrains in schools for vocational and technical education( facilities, equipment, material, insufficient and poorly trained teachers) Kerre suggested that post graduate diploma in education should be awarded to prospective vocational teachers who hold diploma or bachelors degree in vocational and technical areas. Dual programmes in
vocational education should emphasize professional skills in research and evaluation and curriculum development in vocational fields.

2.2.7 Conceptual Framework

Figure 2.2 Conceptual Framework (Source: Author 2005)

Performance of technical courses in this case, automotive and mechanical courses, is affected by facilities, motivation, equipment, attitude, and industry stakeholders. With facilities, their availability and state affects performance. If classrooms, desks, blackboards, books, computers etc, are not available and adequate, they would somehow contribute to how performance will be for the subjects. The students will not be able to perform well with facilities that will limit them to how far they can go.
Motivation also affects performance. If students are motivated they will work hard to achieve the next level of their studies. They would work hard and this in turn will affect their performance. On the other hand, if they are not motivated, their performance will be affected as they do not see need to work hard. There is no goal that they want to achieve. Equipment affects performance. Available equipment should be able to allow students be able to perform their tasks.

Attitude, whether negative or positive affects performance. Depending on the way the student views the course, attitude has a big part to play. If their attitude is negative, than their performance will be affected as they view no need in working hard, and vice versa for positive attitudes.

Industry stakeholders in all will benefit form the good performance of technical subjects, and the skills that are acquired is what is needed in order to run the industries.

2.3 CRITICAL REVIEW

This research calls for the need to improve on equipment/material availability, provision and maintenance, improvement of the available facilities, motivation of lecturers and students.

Research needs to be done on how to make the appropriate equipment/material be available to technical training institutes. This could be done through soliciting for funds from industry stakeholders, individuals, charities, private organizations, and the government. The industry stakeholders can also be compelled to provide equipment/material. Technicians of the various institutions can also be trained to maintain the equipment provided.
Motivation, especially for the lecturers can be done by provision of better terms, like higher salaries, promotions, off-the-job training in their areas etc.

Research also needs to be done to take work motivation from the organizational setting to classroom setting.

2.4 SUMMARY AND GAPS TO BE FILLED BY THE STUDY

The literature reviewed is all set in an organisational setting. Motivation, attitudes, and performance were set in the setting of the office space. One gap that will be filled by the study is to find out the effects of motivation, attitude and performance in the setting of a learning institution. Another gap that will be filled by the study is to find out whether industry stakeholders have a hand in the performance of the students in technical courses and in what way they can aid the institutes in making sure that institute graduates have the skills that is required in the industry. A study should also be done on whether industry stakeholders can participate in the development of technical courses that are required in the fast changing domestic and international industry.
3.0 Research Methodology

This section describes the procedures that were followed in conducting the study.

3.1 Research Design

A purposive study design was employed in the study to generate the required qualitative data. This method is appropriate in the study because it allows for extensive data collection within a shorter time frame.

Descriptive designs are used in preliminary and exploratory studies (Luck and Reuben 1992) to allow the researcher to gather information, summarize, present and interpret for the purpose of classification, (Orodho 2002). Bong and Gall 1859-5, noted that descriptive survey research is intended to produce statistical information about aspects of technical and vocational education that interests policy makers and educators. By involving a broad category of stakeholders the proposed study fits within the descriptive study.

3.2 Population

The target population to form the object of inquiry in this study were teachers, students and HOD’s involved in the respective departments. For a more comprehensive study, all the practical teachers involved were interviewed. In the automotive departments and mechanical departments of both institutes there are a total of 60 students and 22 teachers, with 4 being Heads of departments (Hods).
From this a student sample size of 30 was randomly drawn from the Automotive and Mechanical Departments. A teacher sample size of 18 was also randomly drawn from the respective departments. The HOD’s of the four departments were also selected as respondents.

### 3.3 Sample Design

<table>
<thead>
<tr>
<th>Population Category</th>
<th>Population Frequency</th>
<th>Percentage</th>
<th>Ratio</th>
<th>Sample Size</th>
</tr>
</thead>
<tbody>
<tr>
<td>HOD’S</td>
<td>4</td>
<td>5</td>
<td>1.0</td>
<td>4</td>
</tr>
<tr>
<td>LECTURERS</td>
<td>18</td>
<td>22</td>
<td>1.0</td>
<td>18</td>
</tr>
<tr>
<td>STUDENTS</td>
<td>60</td>
<td>73</td>
<td>0.5</td>
<td>30</td>
</tr>
<tr>
<td>TOTAL</td>
<td>82</td>
<td>100</td>
<td></td>
<td>52</td>
</tr>
</tbody>
</table>

(Source: Author 2005)

### 3.4 Data collection Instruments and procedures

In this study, questionnaires were used. The questionnaires were made up of both structured and unstructured questions. The open-ended questions enabled the respondent give more information, opinions, and recommendations. Closed ended questions enabled the respondent select the best answer that described the situation. This made it easier to analyse and permit greater depth of response.

Once the questionnaires had been constructed they were pre-tested to a selected sample. Meaningful observations were done. Pre-testing or piloting enabled the researcher to determine the validity of the questionnaires. The questionnaires were hand delivered to the respondents for self administration.
A sample size of 52 respondents had been targeted, but only a reply of 45 respondents had answered the questionnaires giving a loss of 7 respondents.

3.5 Data analysis

Questionnaires were edited to ensure completeness and consistency, this was facilitated by a code book that was developed before data was entered into the computer using SPSS package.

The data was analysed using statistical methods of data analysis and presented using charts, tables and graphics to provide and overview of general concepts and trends and to illustrate specific points about the phenomenon.

3.6 Expected Outcomes

The study established the facts on the factors that affected the performance of students in technical subjects in technical training institutions. The study also determined whether this factors had a positive or negative effect on the performance of technical subjects by students. How this factors can be used to improve the performance of the students were also to be determined by this study.

The recommendations given after this study will assist in improving on those factors that affect performance negatively or finding ways of eliminating them and also using more of the positive factors. It will also help in pointing a clear way in which the industry stakeholders can participate in improving the performance of students in technical courses.
CHAPTER FOUR

4.0 Research Findings and Interpretations

4.1 Introduction

This Chapter is divided into 2 main sections that are related to the main objectives of the study. The 1st section presents data on the research findings from the questionnaires handed to lecturers and students. The 2nd section gives a presentation of interpretation of the findings and a summary of the findings.

In this study 45 respondents were interviewed. The respondents were lecturers and students at the two technical institutes in the departments of mechanical and automotive.

4.2 Research Findings

Table 4.1 Location and its effect on Student Performance

<table>
<thead>
<tr>
<th>Location</th>
<th>Performance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Affects Performance</td>
<td>52%</td>
</tr>
<tr>
<td>Does not Affect Performance</td>
<td>48%</td>
</tr>
<tr>
<td>TOTAL</td>
<td>100%</td>
</tr>
</tbody>
</table>

Source: Field Survey 2005

52% of the students said that the location of the institutes affected their performance. They cited the noise coming from the bars and informal structures as the most disturbing. However, 48% said that the location did not affect them as they had adjusted to it.

The location of both, NTTI and KCITI have a profound effect on the performance of the students. Most complained of noise from the bars and noise associated with residential areas. However, NTTI is located in a quieter area than KCITI which is located near an informal residential area.
Table 4.2 Motivation and its effect on Student Performance

<table>
<thead>
<tr>
<th>MOTIVATION</th>
<th>Population Frequency</th>
<th>Performance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strongly Motivated</td>
<td>3</td>
<td>12%</td>
</tr>
<tr>
<td>Motivated</td>
<td>8</td>
<td>32%</td>
</tr>
<tr>
<td>Demotivated</td>
<td>14</td>
<td>56%</td>
</tr>
<tr>
<td>Strongly demotivated</td>
<td>0</td>
<td>0%</td>
</tr>
<tr>
<td>TOTAL</td>
<td>25</td>
<td>100%</td>
</tr>
</tbody>
</table>

Field Survey: 2005

56% of the students said they were demotivated when using the equipment with 32% saying that they were motivated with the equipment and 12% were strongly motivated.

Table 4.3 Motivation and its effect on Lecturer Performance

<table>
<thead>
<tr>
<th>Motivated</th>
<th>Performance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>10%</td>
</tr>
<tr>
<td>No</td>
<td>90%</td>
</tr>
<tr>
<td>TOTAL</td>
<td>100%</td>
</tr>
</tbody>
</table>

Field Survey: 2005

90% of the lecturers said that they were not motivated when carrying out practical lessons with the equipment available. 10% were motivated enough to work with the equipment available to the best of their ability. Old and obsolete equipment, was a major demotivating factor, most needed to be serviced or were not working to full capacity. However, they cited the following as effective motivating factors if implemented; starting with more modern equipment and materials,
appropriate textbooks, computers and more spacious classrooms.

Table 4.4 Equipment Availability and Student Performance

<table>
<thead>
<tr>
<th>Equipment Available</th>
<th>Student Performance</th>
</tr>
</thead>
<tbody>
<tr>
<td>More than enough</td>
<td>0%</td>
</tr>
<tr>
<td>Just enough</td>
<td>20%</td>
</tr>
<tr>
<td>Too few</td>
<td>28%</td>
</tr>
<tr>
<td>Old and Obsolete</td>
<td>52%</td>
</tr>
<tr>
<td>TOTAL</td>
<td>100%</td>
</tr>
</tbody>
</table>

Field Survey: 2005

Of the students, 52%, said the available equipment was old and obsolete and this affected their performance. 28% said the equipment were few leading to congestion round the few equipment during practical lessons and 20%, the equipment was enough.

The lecturers also cited that the required student to equipment ratio needed to be improved for effective learning. They also agreed that equipment available was outdated and not sufficient to cater effectively to the learning needs.

New equipment, enough in number is needed in order to improve student’s performance and to allow for more individual work/practice.

Equipment found in NTTI and KCITI were both old and obsolete, though NTTI had a few new if not modern equipment. KCITI had enough equipment with new equipment.
Table 4.5 Student Attitude and Performance

<table>
<thead>
<tr>
<th>Student’s Attitude</th>
<th>Performance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Attitude towards Lecturers</td>
<td>20%</td>
</tr>
<tr>
<td>Attitude towards the Course</td>
<td>50%</td>
</tr>
<tr>
<td>Attitude towards the Classroom Environment</td>
<td>20%</td>
</tr>
<tr>
<td>Attitude towards the Timetable</td>
<td>10%</td>
</tr>
<tr>
<td>TOTAL</td>
<td>100%</td>
</tr>
</tbody>
</table>

Field Survey: 2005

50% of the lecturers felt that the student’s attitude towards the courses affected their performance while 20% felt their attitude towards the lecturers and 20% towards the classroom environment affected their performance. 10% thought their attitude toward the timetable was what affected their performance.

The students from both institutes said the courses were hard as they found technical drawing to be difficult and thus found the course difficult. They had varying attitudes towards their lecturers with most having positive attitudes and a few majority having negative attitudes. The classroom affected them in that they were not very bright and that they were not well ventilated and thus did not have good attitudes towards the classroom situation. Attitude towards the timetable was that it was overcrowded and that it did not give them enough time to socialise.
Table 4.6 A Industry Stakeholders and Subject Performance.

<table>
<thead>
<tr>
<th>After Industrial Attachment</th>
<th>Subject Performance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Greatly Improve</td>
<td>30%</td>
</tr>
<tr>
<td>Improve</td>
<td>20%</td>
</tr>
<tr>
<td>Some Improvement</td>
<td>50%</td>
</tr>
<tr>
<td>No visible Improvement</td>
<td>0%</td>
</tr>
<tr>
<td>TOTAL</td>
<td>100%</td>
</tr>
</tbody>
</table>

Field Survey: 2005

After industrial attachment, 50% of the lecturers agreed that students showed some improvement in their performance while 30% said they saw a great improvement with 20% agreeing that there was improvement in performance.

Table 4.6 B Effect on Performance as a result of the Relationship between the Institutes and Industry stakeholders.

<table>
<thead>
<tr>
<th>Type of Relationship</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Providing attachment positions for students</td>
<td>62%</td>
</tr>
<tr>
<td>Providing training opportunities for lecturers</td>
<td>23%</td>
</tr>
<tr>
<td>Providing some form of equipment and materials</td>
<td>15%</td>
</tr>
<tr>
<td>TOTAL</td>
<td>100%</td>
</tr>
</tbody>
</table>

Field Survey: 2005

All lecturers agreed that where relationship exists between the institutes and the industry stakeholders’ performance improves. Table 4.6 B. 62% agreeing the topmost relationship being that of the industry providing attachment positions for students, 23% stating the relationship of providing lecturers with training opportunities and 15% providing the
institutes with some equipment and materials. Providing attachment positions give some improvement to student performance by 50%, 30% greatly improved and 20% had improved after the attachment.

Both NTTI and KCITI have relationships with the industry stakeholders and students from both institutes showed some improvement after industrial attachment.

Table 4.6 C Industry knowledge requirements.

<table>
<thead>
<tr>
<th>Industry Requirements</th>
<th>Student Performance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Knowledge of Computers</td>
<td>6%</td>
</tr>
<tr>
<td>Knowledge of Equipment Function and Maintenance</td>
<td>28%</td>
</tr>
<tr>
<td>Knowledge of Workshop Management</td>
<td>6%</td>
</tr>
<tr>
<td>Knowledge of New Technology</td>
<td>60%</td>
</tr>
<tr>
<td>TOTAL</td>
<td>100%</td>
</tr>
</tbody>
</table>

Field Survey: 2005

Together with the existence of some type of relationship, most of the stakeholders required the students to have some form of knowledge. 60% of the students said that the industry looked for students who had knowledge of new technology while 28% had the industry wanting students who had knowledge of equipment function and maintenance, 6% on knowledge of computers and 6% on knowledge of workshop management. Lecturers also acknowledged that the industry firstly required that the students have knowledge of new technology, than knowledge of equipment function and maintenance, workshop management and computers. This improves their performance as students strive to improve, so that they are better able to be placed in the industry after graduation. Once they know what is required by the industry they put more effort into their studies.
Graduates of technical institutes are the future human resources of the mechanical and automotive industry. The relationship that exists between the two is beneficial to both. After attachment, students show improvement in performance in their respective courses and the industry is able to determine how well the courses are being taught. Both institutes are also able to learn what is needed by the stakeholders through feedback during the students’ industrial attachment and during follow up sessions.

4.4 Summary of the Research Findings

From the findings, it was noted that:

- The location of both institutes affected student performance especially noise such as music coming from entertainment centres like bars and residential premises and well as noise from equipment being used during practical lessons.

- The availability of equipment and the type that is available affects the motivation of both students and lecturers and learning ability of the students as they worked with equipment that was old and obsolete and did not allow them to appreciate the full basics of a complete and well working equipment.

- Attitude of students has a big impact on their performance, especially their attitude towards the course, as it could block their ability to assimilate what they are being taught.

- A relationship exists between industry stakeholders and both institutes where the industry provides first and foremost attachment positions for the students and to an extent training opportunities for lecturers in the industry and providing some form of equipment and materials to the institutes. The industry also requires
students who have foremost, knowledge on new technology, equipment function and maintenance, of computers and workshop management. This can be seen in the type of students that the industry would want from the institutes for industrial attachment.
CHAPTER FIVE

5.0 Conclusions and Recommendations.

5.1 Introduction

The study had one main objective, to determine the factors that affect performance of mechanical and automotive practical subjects in technical training institutes.

The data obtained from the respondents was analysed using tables.

5.2 Conclusions.

From the research findings presented in chapter 4 of this study, several conclusions may be drawn:-

- Location of an institute should be given serious consideration as it affects the concentration of students in turn affecting their performance. When locations are being chosen for a learning centre, noise should be considered as a factor in location selection. Human comfort should also be considered when designing classrooms. Thus ventilation, lighting, both artificial and natural, spacing, colour, and building material should be taken into consideration.

- The mechanical and especially the automotive industry is always changing at a rapid rate. Equipment and materials in turn are also change at a rapid rate. Most equipment found in the institutes are old and obsolete, thus more often than not out of line with the technology available in the industrial sector. As much as the equipment will give the students a basic idea of what is out there, it does not really prepare them to face the more advanced technology and machinery. Ways have to be looked into in order to enable institutes to come up to speed with the
new technology and to enable the students to face the new technological world with confidence.

- Using equipment that is old and obsolete or does not work to full capacity can be a demotivating factor. This is faced by both the lecturers and students and thus they are not fully challenged to the needs of the equipment. More equipment is also needed so that students are able to have adequate practice in using and maintaining the equipment that they are using.

- Attitude has an effect on performance. Positive attitude usually pushes and individual to perform their best while a negative attitude has the opposite effect. Thus attitude towards their course will mostly be put as the core factor that affects performance. Those who have a positive attitude would strive to do better and as much as possible of finding ways to cope with the current equipment that is available.

- Without technical institutes, most industries would not have ready supply of human resource. A relationship has to exist between the two. From this, the conclusion drawn is that one cannot do without the other. Thus, both institutes have to be aware of what is needed in the industry and the industry has to know how their human resource is being trained. With the industry requiring knowledge of new technology, they have to find ways in which both the lecturers and students will be exposed to that technology.

- A conclusion can be drawn that both institutes have similar problems when it comes to equipment, motivation and attitude on the part of the students. However, NTTI performs slightly better than KCITI when it comes to course performance.
5.3 Recommendations

The following recommendations are given arising from the study:-

- Ways have to be found in which the old and obsolete equipment can be replaced with new modern equipment as well as new technology. The government should look for ways in which it can acquire new equipment from the private sector and individuals for its public training institutes while the private training institutes to look for more ways of getting new equipment from the private sector as well as charity organisations and individuals.

- Newer methods can also be utilised in the transmission of learning skills to the trainees, like the use of audio visual aids, computers, simulation equipment etc.

- Further opportunities should be created to allow lecturers be exposed to the new technology found in the industry through industrial attachment and retraining.

- Industry stakeholders to participate in the development of curriculum and syllabus of both automotive and mechanical courses.

5.4 Suggestions for further research

The findings of this research indicate that further research is necessary in some areas. These include:-

- No in depth research has been done on industry stakeholders and their role in technical education. Research needs to be done to find out whether they can contribute to the performance of technical subjects and in which ways they can positively influence this performance.
Further research should be done as follow up on the research done by KIE in 1999 on equipment found in technical training institutes.
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Letter of Transmittal

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HOD Automotive/Mechanical
Through the Chief Principal
N.T.T.I and KCITI
Nairobi

Dear Sir/Madam

RE: Request for Research at your Institute

I am currently pursuing a MBA (HRM) at Kenyatta University. I hereby request for permission to undertake the research at your institute.

The topic of research is A Comparative Study in Mechanical and Automotive Practical Subjects in Public and Private Technical Training Institutes: A Case for Nairobi Technical Training Institute and Kenya Christian Industrial Technical Institute. This study will be conducted to cover the period of June 2005 to August 2005.

Results of the study will purely be used for the purpose of academics and so such will be treated with strict confidence. The findings are aimed at bettering the performance of practical subjects.

Thank you for your co-operation
Yours sincerely

Cecilia Lati.
QUESTIONNAIRE

To be filled by lecturers and Hods’

Please put a tick (✓) next to the right response

1) Do you agree that the entry level of students affects their performance in practical Subjects.
   a) Strongly agree ( )
   b) Agree ( )
   c) Disagree ( )
   d) Strongly disagree ( )

2) Which attitude of the students affects their performance?
   a) Attitude towards the lecturers ( )
   b) Attitude towards the course ( )
   c) Attitude towards the classroom environment ( )
   d) Attitude towards the timetable ( )

3) Do you think students have a positive attitude towards their chosen course?
   Yes ( )
   No ( )

Based on your answer, what do you think motivates/demotivates them

(4) Do you think the physical environment affects the performance of the students?
   a) Strongly Agree ( )
   b) Agree ( )
c) Disagree ( )

d) Strongly disagree ( )

5) Do you think the location of the institute affects the performance of the students?

Yes ( ) No ( )

Which of the following do you think affects the performance of the students?

a) Located in a residential area ( )

b) Located near entertainment centres (eg bars) ( )

c) Located near informal structures ( )

d) Located within an urban centre ( )

6) What is the required student/equipment ratio? ________________________________

7) Why do you need more equipment?

a) Current number of machines cannot meet demand from large numbers of students. ( )

b) Machines are not working to full capacity ( )

c) Most need to be serviced ( )

d) Others, specify ____________________________

8) What is the working condition of equipment available in the workshop?

a) Most are working but old ( )

b) Only few are working and need to be replaced ( )

c) Less than average are working and need to be serviced ( )

d) None ( )
9) Is the equipment found in your workshops upto standard in terms of your practical lessons?
   a) Up to standard ( )
   b) Average in standard ( )
   c) Below standard ( )
   d) Does not meet the standard ( )

10) To what extent do you think industrial attachment helps students improve on their performance
   a) Greatly improve ( )
   b) Improve ( )
   c) Some improvement ( )
   d) No visible improvement ( )

11) Does a relationship exist between the institute and the industry stakeholders?
    Yes ( ) No ( )
    If yes, what type of relationship is this?
    a) Provides attachment positions for the students ( )
    b) Provides training opportunities for the lecturers ( )
    c) Provides equipment/materials ( )
    d) Others, specify ________________________________

12) What do the industry stakeholders look for in students seeking industrial attachment?
    a) Knowledge of computers ( )
    b) Knowledge of equipment function and maintenance ( )
c) Knowledge of workshop management ( )

d) Knowledge of new technology ( )

13) Do you think the equipment available helps to prepare students for the industry?

Yes ( )

No ( )

Based on your answer, please explain briefly ________________________________


14) Do you feel motivated when carrying out practical lessons with the existing equipment?

a) Yes ( )

b) No ( )

If no, please explain ________________________________________________________________________________


15) What would be the most effective motivating factor for you in the current situation?

a) More modern equipment and materials ( )

b) More spacious classrooms ( )

c) Appropriate textbooks ( )

d) Computers ( )

e) Others, Specify ____________________________________________
QUESTIONNAIRE

To be filled by students
Please put a tick (√) next to the right response

1) Is the equipment in the workshop adequate for your practical lessons?
   a) More than enough ( )
   b) Just enough ( )
   c) Too few for the students in class ( )
   d) Old and obsolete ( )

2) Do you feel motivated when using the equipment found in the workshops?
   a) Strongly motivated ( )
   b) Motivated ( )
   c) Demotivated ( )
   d) Strongly demotivated ( )

3) Does the physical environment (classrooms, lighting, and ventilation) affect your performance during practical lessons?
   a) Affects ( )
   b) Does not affect ( )

Based on your answer, please explain ____________________________________________
4) Which of the following practical subjects do you find difficult.

a) Technical Drawing (Mechanical) ( )
b) Plant and works Service Drawing (Mechanical) ( )
c) Engineering Drawing (Automotive) ( )
d) Technical Drawing (Automotive) ( )

What makes it/them difficult?

a) No clear instructions. ( )
b) Not enough drawing tables ( )
c) Inadequate classroom space ( )
d) Inappropriate textbooks ( )
e) Others, specify ________________________________

5) Does the location of your institute affect your performance in any way?

Yes ( ) No ( )

Does it affect you positively ( ) or negatively ( )

6) Which of the following do you think would affect your performance?

a) Being in a residential area ( )
b) Being near informal structures ( )
c) Being near entertainment centres (eg bars) ( )
d) Within the center of Nairobi. ( )

How does it affect your performance ________________________________
7) What do you think the industry stakeholders, eg the car industry, look for in students graduating from technical training institutes?

    a) Knowledge of new technology
    b) Knowledge of computers
    c) Knowledge of workshop management
    d) Knowledge of equipment function and maintenance

8) To what extent do you think industrial attachment will/does help in improving your performance in practical subjects?

    a) Improves greatly
    b) Improves
    c) Does not improve
    d) Gives experience
## TIME FRAME

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# BUDGET ESTIMATES

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(NB: All costs are in Kenya Shillings)