



Perceptions on Implementation of Automotive National Diploma Curriculum on Its Trainees' Preparation for Job Performance of Technical Vocational Education Training (TVET) In Nairobi Region

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Abstract

This paper examines the perceptions on implementation of automotive national diploma curriculum on its preparation of its trainees for job performance. The quality of graduates from Technical, Vocational Education and Training (TVET) institutions in the country has deteriorated such that trainees are not prepared adequately for the world of work. This experience prompted the researcher to establish the perceptions of automotive diploma curriculum implementation preparation of its trainees for job performance at the workplace a case of the selected Technical Training Institutions (TTIs) in TVET Nairobi region. The researcher used a survey design on the selected four TTIs out of a total of eight in Nairobi region and located within the geographical areas where there was concentration of automotive industries. Five tutors, ten students from TTIs from the five automotive industries and two supervisors from industries were randomly selected and given the research questionnaires to fill. To show relationships between variables, all variables were subjected to both descriptive and inferential statistics. In keeping with the convention of empirical research, the results of this study were tested at the 0.05 level of significance. This paper reveals that learning subjects needed as a strong foundation for pursuing the engineering based courses were not considered as pre requisite for admission to the diploma courses. The Trainers' views that TVET curriculum implementation did not allow serious and meaningful interaction with the job market could be relied on because of their good teaching and field experiences. The researcher recommended development of the policy guidelines on the minimum entry grades for engineering programmes that include core support cluster subjects so as to allow trainees cope up with the curriculum content, the upgrading trainers' competencies and professional development, formulation of an industrial training policy and investing heavily in purchase of updated training facilities, materials and equipment. Researcher emphasized in the use of practical demonstration and field training, the preparation of quality teaching tools by trainers and continuous monitoring and supervision of curriculum implementation process.

Key words: Perception; implementation; curriculum; TVET; Nairobi Region; Automotive Diploma; Job performance.

INTRODUCTION

Technical and Vocational Education and Training (TVET) institutions in the country are classified as; National Polytechnics (NPs), Institute of Technology (ITs), Technical Training Institutes, Vocational Training Centers and Youth polytechnic (Koech, 1999). The management of any TVET institution wishing to offer diploma curriculum must seek approval from the

Directorate of quality assurance and accreditation under ministry responsible for training as stipulated in the various KIE curriculum documents. The institution must meet the standards set by the directorate of quality assurance and accreditation. In Kenya there are twenty six Technical Training Institutes and for purposes of administration and management of TVET activities such as industrial attachment, extra-curriculum activities and TVET skills exhibitions, they are grouped in six (6) TVET regions. These regions include; Nairobi, western, North rift, Nyanza, Central and coast region. The TVET Nairobi region have eight (8) TTIs comprising; Nairobi, Masai, PC Kinyanjui, Kabete, Machakos, Thika, NEP and Wote Technical Training Institute. The researcher could not carry out the study in all the twenty six TTIs in Kenya and also the eight within TVET Nairobi region, because of their wide range of geographical location. However, the sampled TTIs in Nairobi region were purposively selected because of the following reasons:

- I. The region represent the highest number of TTIs and a big number of automotive industries where trainee were likely to get their industrial attachment
- II. The four institutions were fairly accessible to the researcher, considering the financial constraints and time planned to complete the research study.
- III. The enrolment rate in the selected TVET institutions was comparatively high because they were located within the areas with more socio- economic activities thus gave the researcher the advantage of collecting accurate data.

The employers visited for data collection were those that deal specifically in vehicle repair and maintenance as their core business and also where automotive diploma trainees mostly sought for their industrial attachment. This allowed the researcher to get the trainee's experiences in relation to skills they have learnt compared to what is needed for job performance at the workplace. The historical development of Technical Vocational Educational and Training (TVET) skills training among the indigenous people in Kenya is traced back to the pre-colonial days when acquisition of specialized skills in some trades were only reserved for particular clans.

Thus belonging to a certain clan was a prerequisite for induction into some of the traditional trades such as wood-curving, tannery, blacksmith, hunting, beekeeping or traditional medicine (NITC Trade Testing Taskforce Report, 2005).

According to the above trade testing taskforce report, for one to acquire the art of the trade the trainee used to be attached to a master craftsman commonly referred to 'Sitting with Nellie' that is apprenticeship or on- job training. By watching the craftsman and imitating what he did, the trainee would either learn some skills or learn the little that Nellie (trainer) knew or in most cases not learn at all. However, there was no structure for identification of artisan's skills level of competency. Towards this end the colonial government in 1951 introduced the Trade Testing system which was administered as a mean of testing and certification of the artisans who acquired skills both formally and informally. Currently, the Trade Testing system is coordinated by the Directorate of Industrial Training under the ministry of Labour (NITC Report, 2005).

Technical Training Institutes formerly Technical secondary Schools which are center for this study were never given serious attention in the provision of additional and upgrading of training facilities/ equipment and relevant qualified/experienced teaching staff for the institutions to implement post school training curricula at both certificate and diploma levels. However, same teachers continued teaching despite their deficit in both work experiences and technical qualifications (EFA handbook, 2000).

The concept of adoption to the world of work is a major concern to the government training institutions, professional bodies, employers and other stakeholders dealing with the employees' recruitment policies and promotion of Education/Training in Kenya. Report on Rapid Appraisal on the status of TVET in Kenya (GoK, 2003) revealed that there is mismatch between supply and demand for skilled manpower at different levels leading to poor job prospects for TVET graduates due to inadequate and relevant skills essential for job performance in industry.

However, it is worth noting that positive contribution to the work place does not only mean having the necessary technical skills, but it also means engaging with the organization and its goals, understanding the dynamics of the workplace, and taking up a job role with an informed knowledge of all its requirements. It also means applying a broad range of employable skills learned in many contexts and through a wide range of experience (Report by Australian Chamber and Industry, 2001).

The automotive technician (holder of diploma in automotive) today needs competencies in both vehicle mechanical and electronics technology alongside skills in vehicle management systems for them to be able to work on the current vehicle models. Trainees pursuing diploma automotive course therefore requires, to be adequately prepared with necessary knowledge, skills and attitude for them to perform to the industries' expectations.

The observation by Daungla (1997) on the automobile's historical growth and development reveals that, the car has become an invaluable asset both culturally and economically and that the maintenance and repair of these vehicles due to shift of modern technology poses a lot of challenges to current vehicle technicians, thus requiring them to be well grounded with employable skills.

The report by the Department of Technical Education in the Ministry of Higher Education, Science and Technology (2005), indicates that current vehicle technician(diploma certificate holder) requires high level of specialized training so as to cope up with fast growing global technological vitality in the present and future motor industry. Thus need for heavy investment by TVET institutions and government in purchase of modern equipment and hiring of relevant qualified and experienced trainers so as to offer quality training for employability. TVET Institutions' capacity to match the skills demand with industrial growth and development is observed as a serious challenge in that, the TVET graduates experiences problem of adaptation to the world of work due to the limitation of exposure with employable skills during training period (Rapid Appraisal Report, 2003).

TVET policy curriculum development framework (KIE,2010), states that for Kenya to realize vision 2030, strong human capacity must be developed and training institutions must aspire to produce graduates with the skills that are highly regarded by employer and are seen to contribute to the country's prosperity and social capital. In this respect therefore the problem of adaptation to the world of work is so diversified that only a very critical study will establish the missing links in terms of training deficit and graduates' job performance at the work place.

This study was thus, motivated by the fact that after having been concerned with continuous complains on decline in quality of graduates from TVET institutions, through his interactions with employers, from various literatures and authority documents which includes; Sessional paper No.1 of 2005 on Education, Training and Research and trainers/ educationist during the development/review of TVET curricula and his involvement in development and implementation of education and training policies.

PROBLEM ANALYSIS

The rationale for providing Technical, Vocational Education and Training (TVET) is based on its use in the labour market and the improvement of social status of individuals. People seek training to help them get jobs, better positions in the jobs they already have, raise their earnings and attain many more physiological needs. Government organizes and finances TVET in order to increase its international competitiveness, reduce unemployment and make labour market function more efficiently. Employers seek to increase productivity and quality of their services through the skills training and re-training of their workers. However, these aspirations are difficult to realize fully due to challenges experienced in the implementation of the training curriculum for preparations of quality and relevance graduates (HEART TRUST-2001).

The apprenticeship training that critically addresses the aspect of provision of employable skills to the trainees has reduced significantly in the recent times and that industries are no longer embracing this mode of training (NITC Report of DIT Centers, 2008). Today, most employers prefer to higher graduates from TVET institution instead of recruiting them as apprentices after school, thus forcing them to upgrade their skills to augment their adoption to the world of work. TVET institutions' response to the dynamism of technological development has been minimal, while the review of the TVET national curricula to match up with changes in technology has been slow. Thus, skills acquired by TVET graduates do not match with the skills required by employers (National Skills Training Strategy Paper, 2008).

The issue of provision of relevance skills for employability of TVET graduates during training has been captured in various Kenyan policy documents, KIE training need assessment reports and in local and international publications. However, other than work which has been done by consultants and scholars on general TVET policies, there is no research which has been done on perceptions of the implementation of automotive national diploma curriculum on its trainees' preparation for job performance and in particular to TTIs and those that falls under TVET Nairobi region. In summary, the statement of the problem is as follows; 'The trainees pursuing diploma automotive curriculum are not adequately prepared for job performance in the world of work'. This research attempted to establish perception on implementation of automotive national diploma curriculum on its trainees' preparation for job performance in TVET Nairobi region.

NOTE ON METHODOLOGY

This study adopted the survey design. This design offered the researcher an opportunity for an in-depth and comprehensive enquiry of the subject of the study. The researcher considered the four purposes of the descriptive survey design in designing this study which according to Van Dalen (1979), includes: (a) to collect factual information that would explain existing situations; (b) to make comparisons and evaluations; (c) to identify special problems or to justify existing conditions or practices; and (d) to determine what other people are doing about similar problems and to make suggestions for future course of action. The survey design provides an in-depth use of the logical methods of inductive-deductive reasoning to arrive at generalizations, habitually employ randomization, the variables and procedures are described as precisely and totally as possible so that it is easier for the study to be replicated by other researchers, and they are also non-experimental. The design was also used because of the nature of the problem that the researcher investigated.

The raw data collected from the questionnaires were edited to eliminate errors. They were then coded and later keyed into the computer and analyzed using the statistical package for social sciences (SPSS) version 10.0. To show relationships between variables, all variables were subjected to a descriptive analysis yielded frequencies, percentages, means, and standard

deviations and alpha coefficients. Further, descriptive statistics were used. Frequency tables, charts and graphs were used to summarize and present the findings.

RESULTS AND DISCUSSIONS

Demographic Information of the Respondents

It was important to collect data on the demographic information of respondents. The demographic aspects of interest to the study were gender of respondents, age bracket of respondents, name of institution, modules taught, name of organization and years of working experience of trainers.

Gender Respondents of Supervisors, Trainers and Students

Information on gender was important since it showed the representation in the study by gender. Data on gender was collected, analyzed and presented as displayed in table.1.

Table 1: Distribution of supervisors, trainers, KIE directorate staffs and students by gender

Gender	Supervisors		Trainers		KIE Directorate staffs		Students	
	F	%	F	%	F	%	F	%
Male	3	75	13	10	1	50	26	96
Female	1	25	-	-	1	50	1	4
Total	4	10	13	10	2	10	27	10

Table 1 shows that most supervisors (75%) were male with (25%) being females. All the trainers (100%) were male while the majority of students (96%) were also male. The study also established that out of the two (2) KIE directorate staff one (1) was male while the other was female. The study findings tend to indicate that the automotive diploma course is dominated by males. The reason could be due to the fact that automotive diploma course is perceived to be biased towards male students. Seemingly right from secondary school, most girls tend to avoid the subjects preferred for one to join this course. These are; Mathematics, Physics and Chemistry

Age bracket of respondents

Information on age bracket of respondents was deemed important since it showed the representation of the respondents by age. Data were collected, analyzed and presented as displayed in table. 2 below.

Table 2: Distribution of respondents by age bracket

Age bracket	Supervisors		Students		Trainer		KIE staff	
	F	%	F	%	F	%	F	%
20 years and below	-	-	-	-	-	-	-	-
21 – 25 years	-	-	24	89	1	14	-	-
26 – 30 years	-	-	3	11	2	24	-	-
31 – 35 years	1	25	-	-	3	62	-	-
36 – 40 years	2	50	-	-	8	-	-	-
41 – 45 years	1	25	-	-	-	-	2	100
46 and above	-	-	-	-	-	-	-	-
Total	4	100	27	100	13	100	2	100

Table 2 demonstrates that most supervisors (75%) were aged between 36 and 45 years, most students (89%) were aged between 21 and 25 years while a few students (11%) were aged between 26 and 30 years. Most trainers (62%) were aged between 36 and 40 years while all

the directors (100%) were aged between 41 and 45 years. The study findings tend to imply that the trainers were mature enough to handle the automotive diploma students during teaching, who were also of mature age (21-25 years) and could therefore undertake the TVET training with the seriousness it deserved.

Supervisors' years of experience

This study sought information from the supervisors on the years of experience. Data collected and analyzed revealed the summary displayed in Fig. 1

Fig. 1: Distribution of supervisors by years of experience

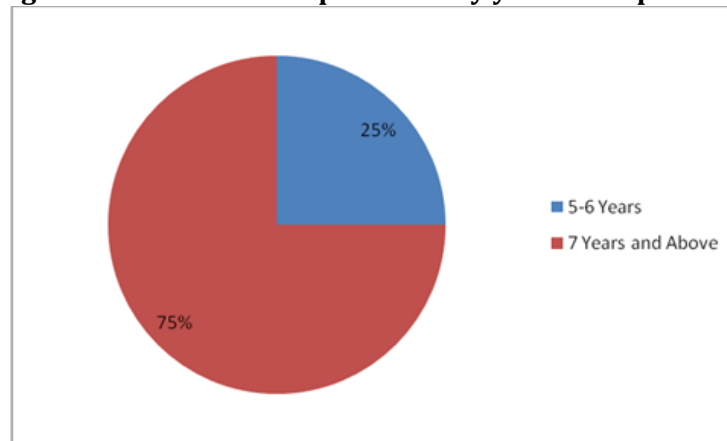


Fig. 1 shows that all the supervisors had an experience of 5 years and above with the majority (75%) having an experience of 7 years and above. A follow up question was posed to the K.I.E directorate staffs on their years of experience in curriculum development. Data were collected, analyzed and the findings revealed that all the staffs (100%) had an experience in curriculum development of above 5 years. The question on years of experience gave the findings that tended to imply that both the supervisors of the industrial attachment programme in the automotive industry and the KIE directorate staffs had enough experience (above 5 years) to implement and coordinate the development of training curricula effectively.

Factors related to automotive diploma trainee's preparation for job performance

The researcher sought information from students on their Mean Grade (MG) (KCSE). Information on the trainees' MG was deemed important since it determined the attitude and the future performance of the trainees in the TVET programme. Data were collected, analyzed and presented as shown in Fig 2

FIG. 2: DISTRIBUTION OF STUDENTS BY ENTRY MEAN GRADE

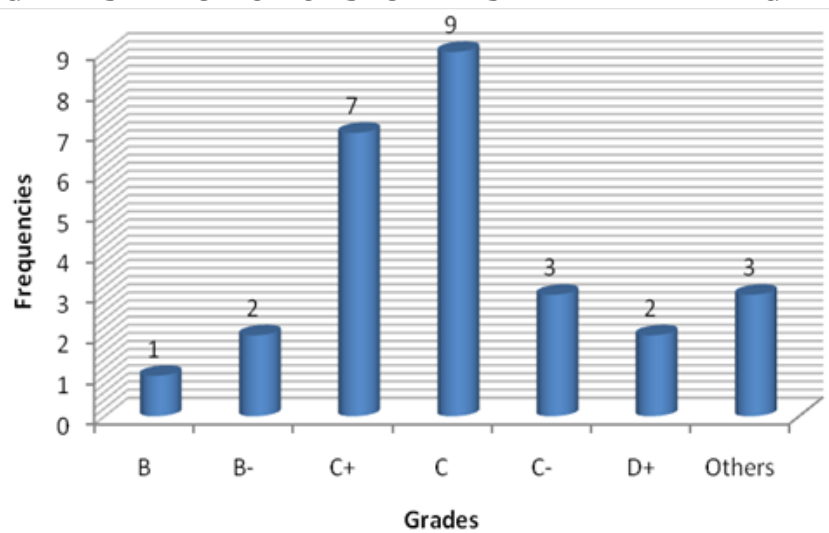


Fig. 2 clearly shows that (82%) of the students got a mean grade of C- and above, which is the pre-requisite for admission for any TVET programme. The remaining (18%) of the students having grade D+ and below or any other qualifications approved by Director in charge of training. The study findings tend to indicate that all the students that joined the Automotive Diploma course had passed their KCSE examination with C-mean and above and had other required qualifications in an addition to their KCSE grades below C- mean grade. The trainees were therefore good material for this diploma course. Asked about their scores in various subjects required for enrolment in this course, data were collected, analyzed and presented as displayed in Fig. 3 below:

Fig. 3: Distribution of students' performance by Subject grades

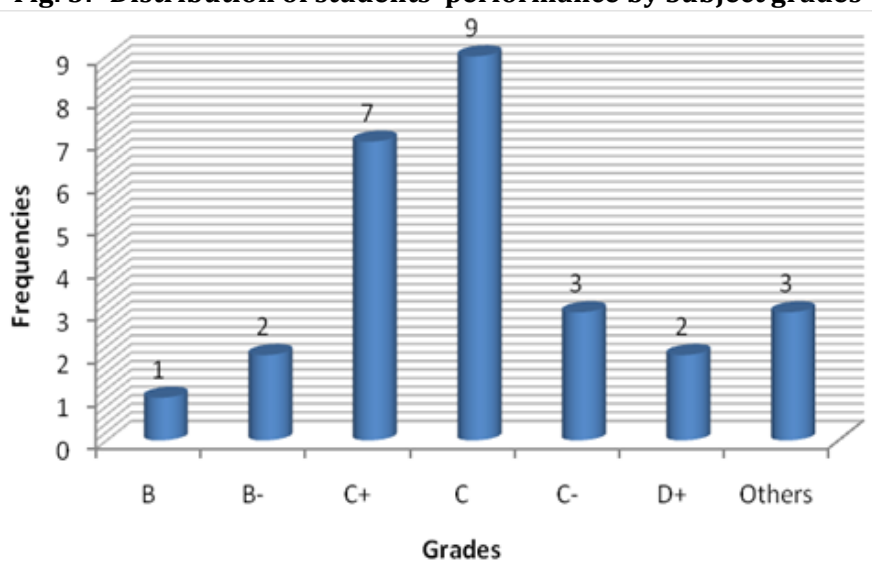


Fig. 3 clearly shows that most students enrolled for automotive diploma course scored in the specific subject as follows; C- and above in Mathematics (79%), Physics (87%), Chemistry (96%), Physical Science (100%) and English Language (96%). These findings tend to imply that at subject level the students' performance was within the pre requisite grade to pursue Engineering based course. This was an indication that majority of the students had very good potential to grasp the content in the automotive curriculum. A follow up question on the issue of discipline gave the findings that all the students (100%) indicated that they had not been accused of indiscipline in their current station and according to a few students (37%) the punitive measures given were prescribed in the institutions' rules and regulations. It was also further established that the students in the automotive diploma course decided to join the course on their own and this was deemed as an advantage in as far as the attitude was concerned.

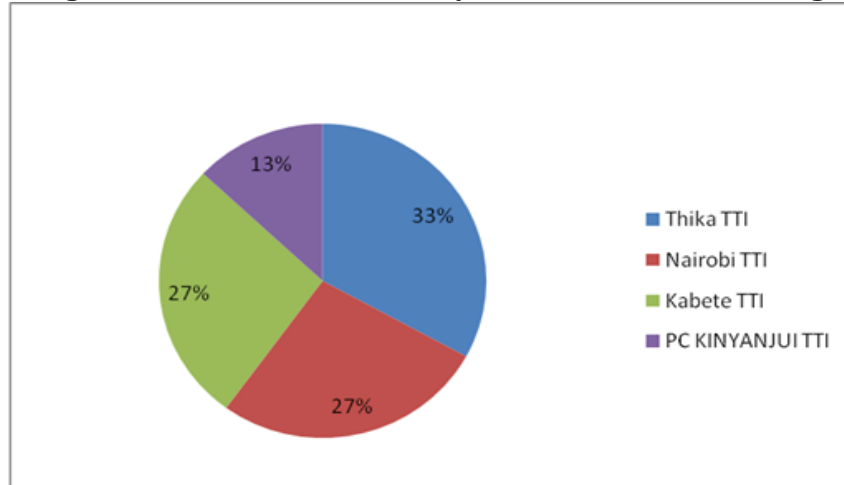
Views of KIE staff on factors related to automotive trainees' preparation for job performance at workplace

A question was posed to the K.I.E directorate staff on prescribed entry behavior for automotive diploma curriculum. The data collected analyzed showed that the required grade was a C. Asked whether they involved students in curriculum development; they indicated no but explained that at times students were involved when conducting training.

Trainers' views on factors affecting diploma trainees in preparation for job performance at the workplace

The trainers were asked which institution they taught in and the findings were as summarized in Fig. 4.

Fig. 4 Distribution of trainers by the institution of teaching



It is clear that the trainers were well distributed in these institutions. Asked which module they were teaching, the summary was as shown in Table 3.

Table 4.3: Distribution of Trainers by modules of teaching

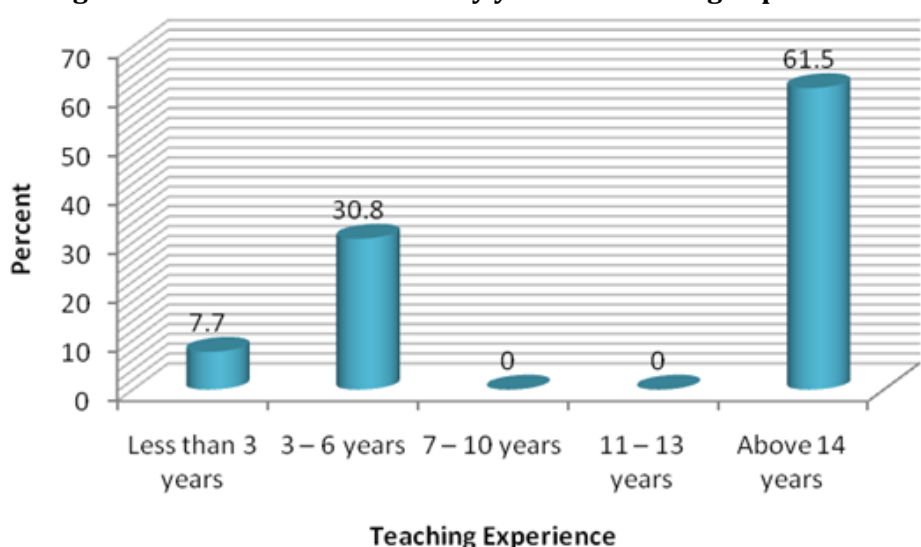
Module	F	%
Automotive Theory and Engineering	5	33
Workshop Organization and Management	1	7
Engine Technology	5	33
Vehicle Technology	3	20
Drawing	1	7

Table.3 shows that most trainers taught units of the curricula that are core in preparation of trainees for job performance at the workplace which includes; Automotive Theory and Engineering, Engine Technology and Vehicle Technology (86%). The remaining trainers taught core support units which were; drawing and Workshop Organization and Management and Drawing (14%).

Trainers' Years of Teaching Experience

The study further sought information from the trainers on their years of experience. Data were collected, analyzed and presented as shown in Fig. 4.5

Fig. 5 Distribution of Trainers by years of teaching Experience



It is clear from Fig. 5 that most trainers (60%) had a teaching experience of above 14 years. This according to the study was a good experience of teaching the Diploma syllabus. Asked on their experience in industrial work the following Fig 4.6 was generated.

Fig 6: Distribution of Trainers by Experience in the Field of Study

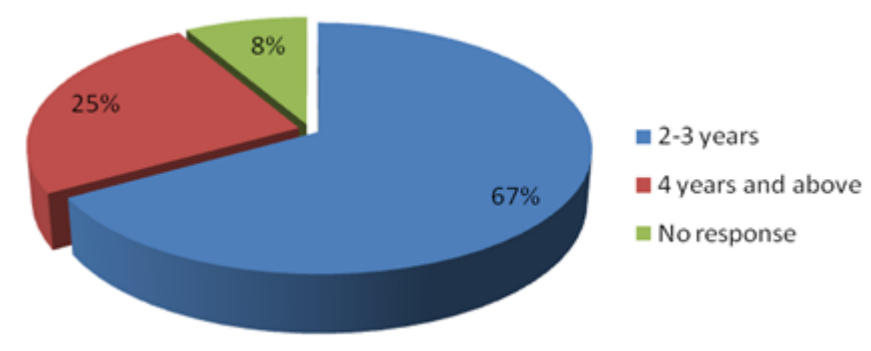


Fig 6 shows that all the trainers had worked in the relevant industry at least for a period of more than 2 years and above. A minimum of 2years technical skills work experience was adequate to enable them teach core curricula units critical for preparation of trainees for job performance. Asked whether they had any other responsibility apart from teaching duties, the following information in Table 4.4 was established.

Table 4: Distribution of trainers by other duties done apart from teaching

Other Duty	F	%
Attachment co-ordinator	2	15.4
Head of Department	2	15.4
Games Teacher	1	7.7
Deputy Head of Department	2	15.4
Dean of Students	1	7.7
Class Teacher	2	15.4
No response	3	23.1
Total	13	100

These findings show that all the trainers had other responsibilities apart from teaching duties as shown in Table 4. A follow up question on whether the curriculum implementation allowed serious and meaningful interaction with the job market revealed that more than half of the trainers (53.8%) said no while the remaining (46.2%) said yes. The study findings were taken to imply that inadequate interaction with the job market is a factor that may impact negatively towards preparation of trainees for job performance in the workplace.

Trainers' Views on how to enhance delivery of skills

The researcher sought to find out what could be done to enhance delivery of skills training for automotive diploma trainees to prepare them for performance at the work place. Data were collected, analyzed and presented as displayed in Table 5.

Table 5: Distribution of Trainers by how to enhance skill delivery

Method	F	%
Give exercises on practices rather than extensive theory	5	35
Provide adequate Industrial Attachment	12	92.
Develop syllabi that are modular in nature	9	62
Carry out Consistent Evaluation	6	41

Table 5 displays views of trainers on how to improve skill delivery. From the table it can be seen that an overwhelming number of trainers (92%) said that there was need for adequate Industrial Attachment. Most of the trainers (69.2%) said that there was need for automotive diploma syllabus to be modular in nature. The remaining trainers indicated need for consistent evaluation (46%) and give exercises on practices rather than extensive theory (35%).

Extent to which training methods are helpful

The researcher wanted to establish to what extent the trainers found their methods of delivery helpful. Data were collected, analyzed and presented as shown in Table 6 below:

Table 6: Distribution of Trainers by Extent to which Training Methods are helpful

Method	Low Extent	Some Extent	Great Extent	V. Great Extent
Lecture Method	(23%)	(46%)	(23%)	(8%)
Field Training	-	(31%)	(54%)	(8%)
Demonstration	-	-	(39%)	(54%)
On-Job Training	(15.4%)	(23.1%)	(23.1%)	(31%)

Table 6 shows that the lecture method was helpful to some extent (46%) and to a great extent (23%). The other methods of training were all helpful to a great extent; they included field training (62%), Demonstration (93%) and On-Job training (54%). The study findings seem to indicate that demonstration and field training methods were more helpful compared to the other methods of training.

Trainers' views on effects of implementation of automotive diploma curriculum

A question to the trainers on rating of the effects of implementation of automotive diploma curriculum in preparation of its trainers on job performance yielded the following information in Fig. 7

Fig. 7: Distribution of trainers' views on effects of implementation of automotive diploma curriculum

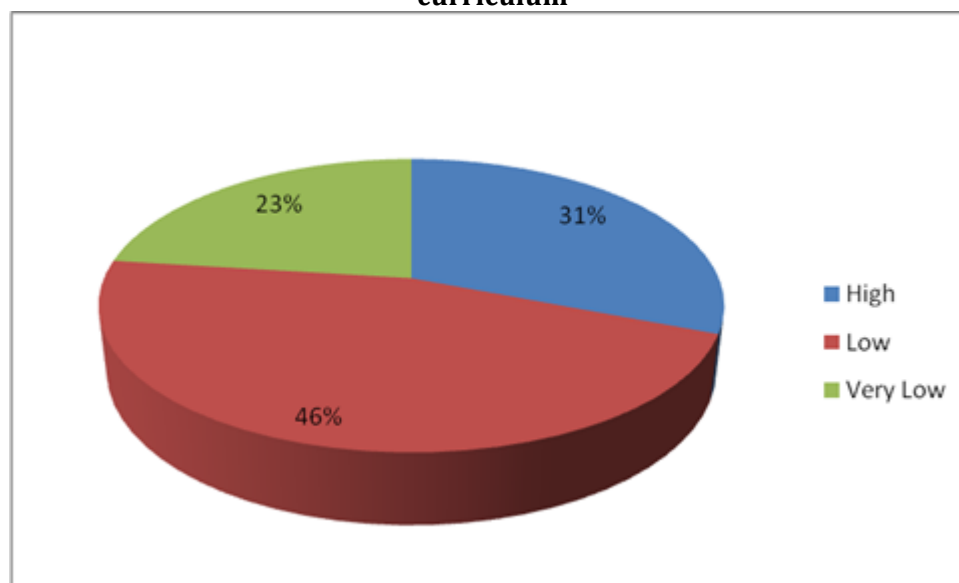


Fig.7 shows that the effect of implementation of automotive diploma curriculum in preparation of its trainees on job performance was low (69%). Asked whether there was any relationship between skills acquired during training and skills needed in the industry most of the trainers (92%) indicated yes while only (7.7%) said no. Further asked to explain why there was a

relationship between the skills needed in industries and the skills acquired in the training institution, the information in Table 4.7 was yielded

Table 7: Trainers' views on the relationship between skills needed in industries and those acquired in training institutions

Reason	F	%
Students understood concepts easily during industrial attachments	4	31
It provided vehicle work practice	4	31
The required skills related to training needs	5	38
Total	13	100

The reasons given in Table 7 for the relationship included the required skills being related to training needs (38%), students' understanding of the concepts easily when they attended attachment and the training providing vehicle work practice (31%). The above reasons given by the respondents showed that industrial attachment is an important component of training that impact positively in the preparation of the trainees for job performance at the workplace. This is because trainees are able to grasp technical concepts alongside putting them into practice.

Supervisors' suggestion on how to enhance provision of skills training delivery

This study deemed it important to collect data from supervisors concerning suggestions on how to enhance provision of skills training delivery. Data were collected, statistically analyzed and presented as shown in Table 4.8 below

Table 8: Distribution of Supervisors by suggestions on how to enhance provision of skills

Suggestion	F	%
Minimize Theory	6	46
Moving with current Technology	8	62
Curriculum review	5	39
In-servicing of Trainers	2	15

Table 8 shows that most supervisors (62%) indicated the need for moving with the current technology this was taken to mean ability to adapt technological changes, (46%) said there was need to minimize theory, review curriculum (39%) and in-service trainers (15%). The research findings reveal that practical demonstrations, curriculum review and keeping in tandem with technological changes would have high contribution in enhancing the provision skills for work performance.

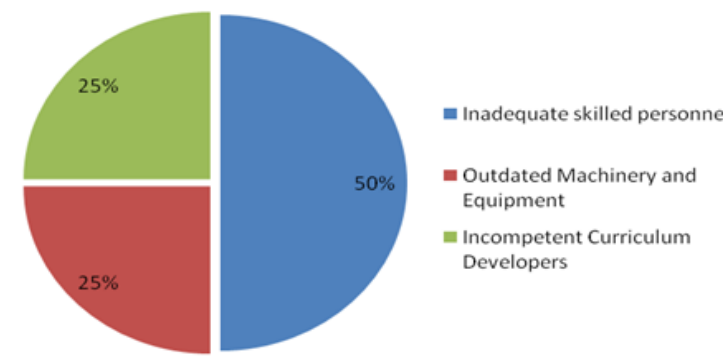
Supervisors' Views on factors related to trainees which affect their preparation for job performance

The supervisors were asked if they had employed automotive diploma graduates from TTIs. The supervisors were divided on this with (2) indicating yes and (2) indicating no. Asked whether Automotive Diploma Curriculum trainees were prepared adequately with relevant skills, they were also divided on this (2) said no (2) said yes. The supervisors who said the trainees were not adequately trained said that it had been observed that graduates displayed little skill (50%). According to the supervisors, the identifiable gaps which existed in preparing automotive diploma curriculum trainees were inappropriate method of delivery (100%). The study findings in this research item seem to imply that the automotive diploma graduates were not favoured for employment in industries due to lack of relevant employable skills needed by industries.

Supervisors' views on challenges affecting the implementation of automotive diploma curriculum

Asked their views on the above, the supervisors indicated the following as shown in Fig.4.8

Fig. 8 Distribution of supervisors' views on challenges affecting curriculum implementation



Out rightly as it can be seen that, half of the supervisors (50%) mentioned inadequate skilled personnel, (25%) mentioned incompetent curriculum developers and outdated machinery respectively. A follow up question to the supervisors on whether there was any relationship between skills acquired during training and the job market, most of them (75%) said no. For those who indicated no they said that the skills acquired by students were outdated. They explained that this was because students even in their final year of training could not work independently in the modern vehicles. Those who said yes (25%) indicated that trainees had relevant knowledge to perform some of the tasks with minimal supervision. The research findings on this research item seem to imply that the automotive diploma students lacked qualified teaching personnel, use outdated machinery/ equipment and the curriculum developers were incompetent to draw demand driven curricula. The above reasons indicated that trainees are not adequately prepared for the world of work thus, being rendered unfit for employment.

Supervisors' Views on necessary skills that the industries require and are not exhibited by automotive diploma trainees at the work place

Supervisors' rated the necessary skills as follows; innovativeness and creativity (75%), timely completion of job (25%) and environmental adaptability (50%). On whether the supervisors could blame curriculum implementation for the lack of these necessary skills the supervisors were divided with (50%) saying no and (50%) saying yes. Asked whether there were other alternative approaches to skills acquisition, the entire supervisors (100%) indicated yes there were. The reasons given for the yes response were summarized in Fig.4.9 below. Fig. 4.9: Distribution of supervisors views on alternative approaches to skill acquisition

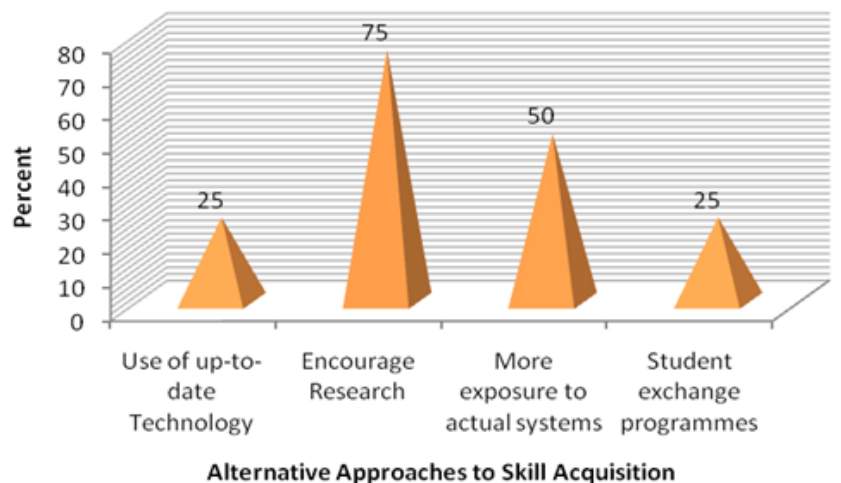


Fig. 4.9 shows that there was need to encourage research (75%) in TTIs, expose students more to actual systems (29%), use up-to-date technology and encourage student exchange programmes (14%). The supervisors were then asked to react to statements on automotive diploma graduates and whether they exhibited deficient skills. Data were collected, analyzed and presented as shown in Table 9 below:

Table 9: Distribution of Supervisors' views on effect of automotive diploma curriculum implementation

Statement	SA	A	N	D	SD
Automotive Diploma Graduates exhibit deficient skills	1	1	-	2	-
Curriculum content is far much below the demands of the Industry	2	2	-	-	-
Job performance and productivity is a function of many factors and skills	2	-	-	1	1
Qualified personnel with adequate and modern machinery and equipment would prepare trainees sufficiently	2	1	-	-	-

Table 9 shows that there was a disagreement between trainers on the Automotive Graduates displaying/exhibiting deficient skills. However all the supervisors (4) agreed that the curriculum content was far much below the skills demands of the automotive industry. They also disagreed on job performance and productivity as a function of many factors that determines ones level of the acquired skills. All the supervisors (4) agreed on the fact that qualified personnel with adequate and modern machinery and equipment would prepare trainers sufficiently.

Curriculum development related factors that affect automotive diploma trainees' preparation for job performance at the workplace

This study sought information from trainers on whether they had participated in curriculum development/review process. It was unfortunate to note that most of the trainers (77%) had not participated and only (23%) had. For those who had participated, they indicated participation at subject panel meeting level (23%) curriculum evaluation level (15%) and course panel level (8%). Data reveals that there is a minimal participation of trainers in curriculum development related activities. Asked whether they thought the curriculum content offered the necessary and sustainable skills for job performance and productivity, the trainers were also divided on this unit (6) indicating yes and the other (6) indicating no. A follow up question on whether curriculum content allowed for flexibility to impact new (emerging) skills for better job performance more than half of the trainers (54%) said yes while (42%) said no. The low participation of trainers in curriculum development is a critical issue that may affect effective preparation of trainees for job performance because of the problems of trainers' curriculum interpretation

K.I.E staff's views on curriculum development related factors that affect automotive diploma Trainees

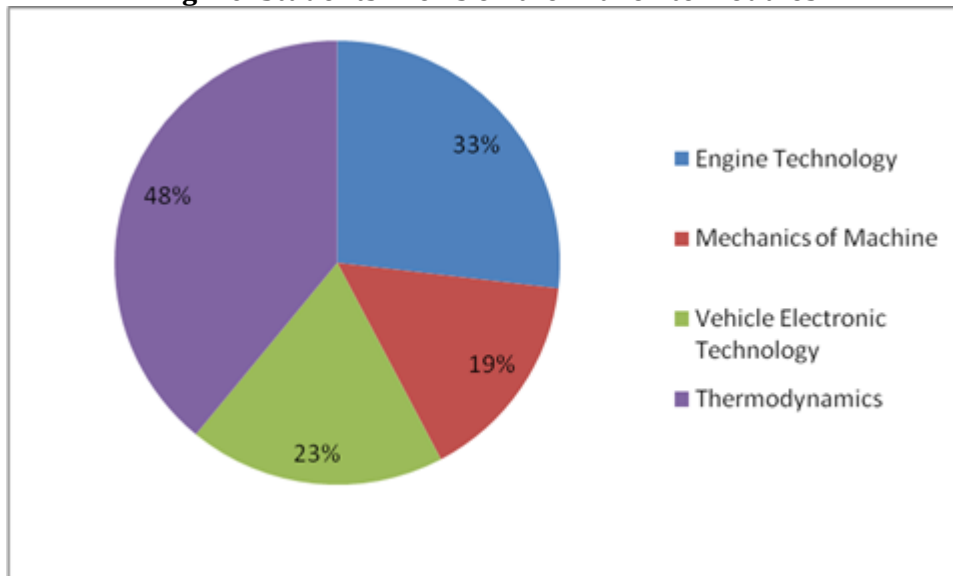
This study sought information from the K.I.E directorate staffs on what promoted the development of the current automotive diploma curriculum and all the directorate staffs (2) said it was industry demand. Asked on the key factors that guide the development of the demand driven curriculum, they mentioned Government Policies and emerging trends. Trainees desired modes of training was also mentioned. They further reported that the automotive diploma curriculum was first developed in the 80's and had been reviewed twice since its development. On whether the K.I.E had a policy on the frequency the institution takes to review curriculum the responses were divided between yes and no meaning there was no clear policy on frequency of review. In case of any review it was established that it was after at

least 5 years. A question on whether industries were involved in curriculum development process was asked and it was established that industries were involved at least by (70%) representation in curriculum development panels. Research findings revealed curriculum development/review policy is not properly pronounced because the respondents were divided in the existence of such policy and the fact that automotive curriculum have been reviewed twice since 1980 is clear indication the document being outdated in relation to fast changes in technology. The 70% involvement of industries in curriculum development is a positive indication of possible development of a quality curriculum assuming other challenges are taken care of. Kerre (1995) recognized that no amount of education and training will be sufficient to provide gainful employment without specific government policies aimed at creating an enabling environment for business and industry to expand.

Automotive diploma trainee' views on curriculum development related factors that affect their preparation for job performance at the workplace

This study sought information from students on their favorite module unit and the results were as shown in Fig 10; Engine Technology (33%), Mechanics of Machine (19%), Vehicle Electronic Technology (23%) and Thermodynamics (48%)

Fig. 10: Students' views on their favorite modules



Information displayed on Fig. 10 above show that most students preferred Thermodynamics (48%) and Engine technology (33.3%). Asked why they liked the modules the students explained that through these modules they learned real life applications (37%) and they provided the most recent technologies (78%). Asked on their worst module, most students (74%) indicated Entrepreneurship a few (30%) mentioned Material Science and Mechanical Technology (27%). These core modules were rated low because non-related subjects were learned (30%) and they had a lot of complicated terminologies (33%). The research findings show that students tend to prefer core support units as opposed to core units which provide the relevant automotive repair and maintenance skills.

Kerre (1995 confirmed the importance of all the above module units in automotive diploma curriculum by highlighting the objectives of TVET programmes to include equipping the students with relevant productive and entrepreneurial skills; the provision of skilled labour the refinement of indigenous artistic and technological skills; the acquisition of skills to protect, utilize and conserve the environment; and increasing scientific and technological literacy among youth.

Duration of Industrial Attachment

A question on how long the industrial attachment took was asked to the students. Data were collected, analyzed and presented as displayed in Fig.4.11

Fig. 11: Distribution of Students' view on duration of Industrial Attachment Attended

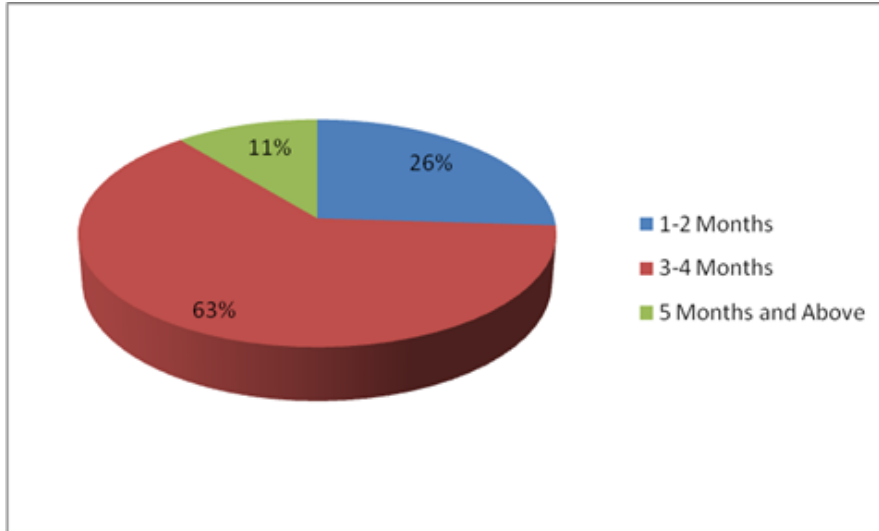


Fig. 11 shows that most students were on Industrial Attachment for a period of between 3 and 4 months while a few (26%) had been on attachment for a period of between 1 and 2 months. A minimum number of students (11%) had been on attachment for a period of 5 months and above. Asked on whether Industrial attachment implementation had an impact on preparation of trainees, all the students (100%) indicated yes and rated the effect high (100%). The students however complained that the industrial attachment lacked structured industrial attachment guidelines (37%). Supervision during attachment was not given adequate attention (33%) and that the Industry demands were not consistent with content of automotives curriculum (27%), structured industrial attachment guidelines and inadequate supervision may have a negative impact in preparation of trainees for job performance. The researcher under the literature review had mentioned lack of structured and inadequate supervision of industrial attachment in reference to overview of TIVET sector training in the Daily nation of 2nd March, 2011. Students were then given statements related to automotive diploma curriculum development. Data were collected, analyzed and presented as displayed in Fig. 12 below:

Fig. 12: Distribution of students' views on automotive diploma curriculum development

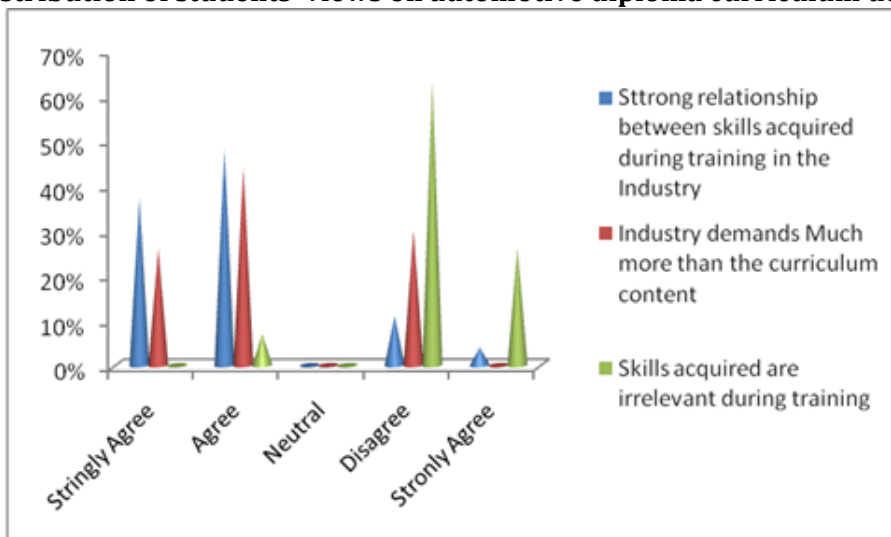


Fig. 12 show that majority of students (85%) said that there was a strong relationship between skills acquired during training and skills needed in the industry. The industry demands were much more than the curriculum content according to majority of students (70%). However the skills acquired during training were relevant in the work place (89%). Findings to some extent agreed on the report on the Rapid Appraisal on status of TVET in Kenya (Republic of Kenya, 2003) which challenged the Education system for failing to inculcate a modern scientific culture, imbue learners with desirable social and technical skills which is an issue of mismatch of what is offered in TVET institutions and what is needed in industry. Study findings on the research question on factors related to curriculum development that affect automotive trainees' preparation for job performance at the workplace were as follows:

- I. That was a minimal participation of trainers in curriculum development related activities an issue that may affect effective preparation of trainees for job performance at the workplace because trainers face the problems of curriculum interpretation during teaching
- II. That the issue of curriculum development and review policy was not properly pronounced because the respondents were divided on its existent. The fact that automotive curriculum had been reviewed twice since 1980 is a clear indication that automotive curriculum under implementation was outdated.
- III. That 70% involvement of industries in curriculum development is a positive indication of possible development of a quality curriculum assuming other challenges are taken care of.

The study also showed that students tended to prefer core support units as opposed to core units which provide the relevant automotive repair and maintenance skills. From the research findings, it was appreciated that variation of teaching methodology was a good model of quality training delivery. These findings tended to agree on the report on the Rapid Appraisal on status of TVET in Kenya (Republic of Kenya, 2003) which challenged the Education system for failing to inculcate a modern scientific culture, imbue learners with desirable social and technical skills which is an issue of mismatch of what is offered in TVET institutions and what is needed in industry.

Trainers related factors that affect automotive diploma trainees' preparation for job performance at the workplace

Trainees' views on factors that affect their preparation for job performance

This study sought information from students on what methods of delivering practical training were adapted by their institution. The information got is as summarized in Fig.4.13.

Fig. 13: Methods of delivering practical training

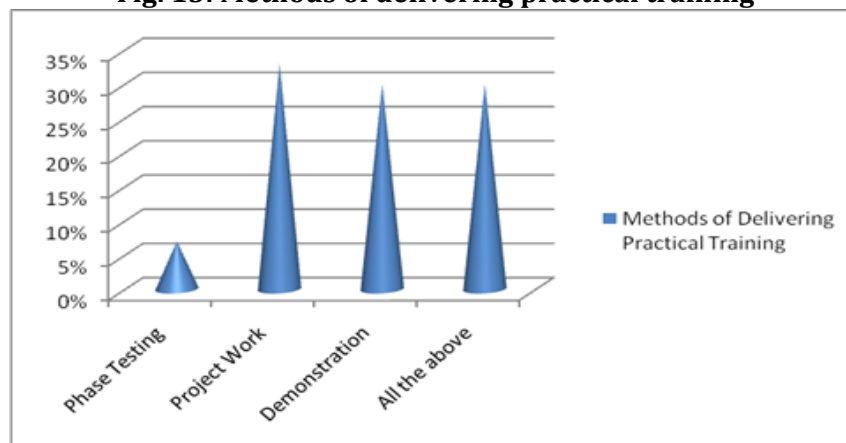
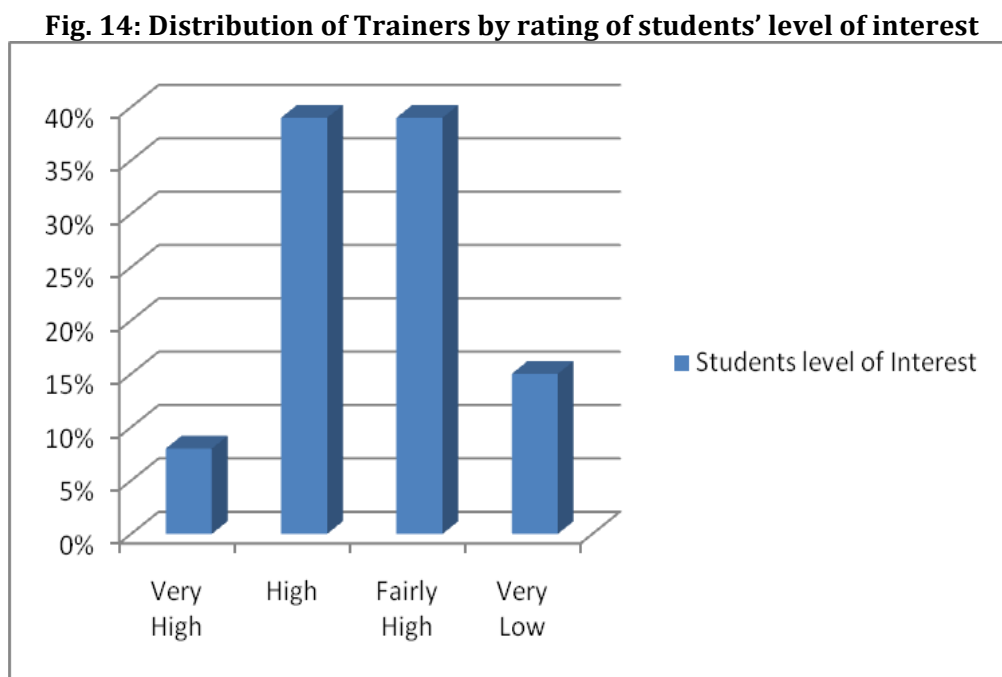


Fig. 13 revealed that the trainers mostly used demonstration; project work and phase testing as the least used method. However, in most cases the trainers combined all the above 3 methods.

The results Fig.4.13 indicated that the trainers varied the use of these methods which is a good practice of quality training delivery.

Trainers' views on related factors that affect Trainees' preparation for job performance at the workplace

The trainers were asked to rate the level of students' interests in acquisition of skills during teaching. The rating is as displayed in Fig. 14 below



Most of the trainers (46.7%) rated the students' interest in acquisition of skills to be high. While of trainers (15.4%) indicated the rating as low. Asked to rate the level of final year automotive diploma students' discipline for the last 3 years, Table 4.10 is a summary of the findings.

TABLE. 10: DISTRIBUTION OF TRAINERS BY RATING OF STUDENT DISCIPLINE FOR THE LAST 3 YEARS

Rating	F	%
Very disciplined	3	23
Disciplined	6	46
Fairly disciplined	4	30.8
Total	13	100

As can be seen the final year students were disciplined according to the majority of the trainers (69%) with (30.8%) indicating the students were fairly disciplined.

A question was posed to the trainers on whether they use the following teaching tools that enhanced quality training delivery. Data were collected, analyzed and presented as shown in Fig. 15.

Fig. 15: Trainers views on use of teaching tools.

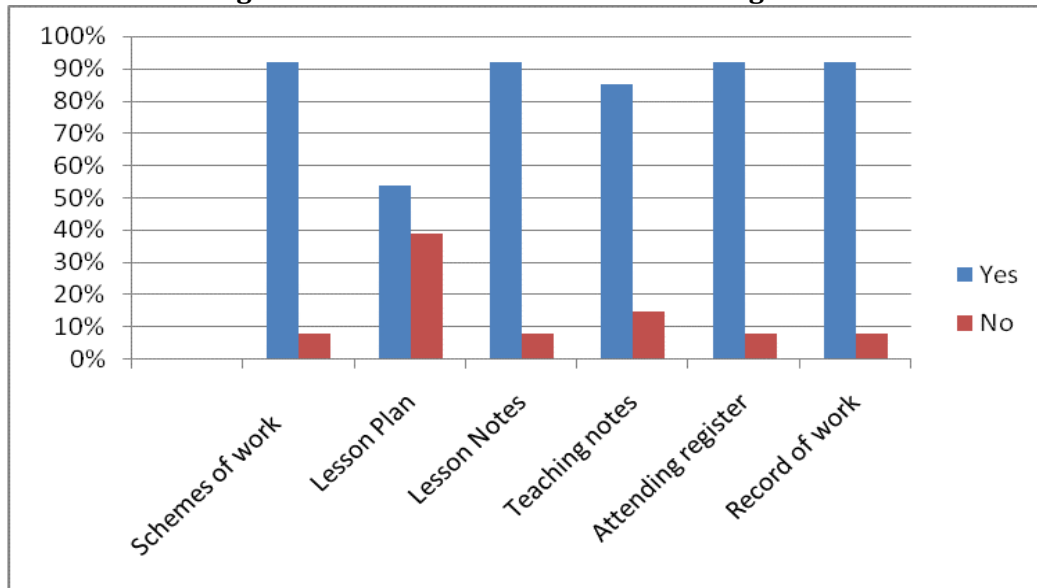


Fig 15 displays that most trainers were using the teaching tool that enhanced quality training delivery. However a lower percentage (54%) used lesson plans compared to the other teaching tools. From the institution's Document analysis guide it was confirmed that the teaching tools and materials named in Fig. 15 above and others such as schemes of work, lesson plans, students marks records, lesson notes, marking schemes, record book, text book references, assorted materials for practical lessons, diploma automotive syllabus, vehicle service parts and materials were available and they were also of good quality except assorted materials for practical lessons and text book/reference which were of poor quality.

K.I.E staff's views on trainers' related factors that affect the automotive diploma trainees' preparation for job performance at the workplace

KIE staff were asked if they in-serviced the trainers on the new curriculum and all (100%) said they did. Asked on who they involve in inducting the trainers on the new curriculum the response was the K.I.E and the Ministry in charge of training in the country. A follow up question on at what level the trainers were involved in curriculum development process brought forth the findings at subject panel level and during monitoring and evaluation. The research also revealed the importance of stakeholders' participation in curriculum development/review process which conformed to Ornstein and Hunkin (2004) in his definition of curriculum development and implementation processes. Hunkin emphasised on the importance of the involvement of the relevant stakeholders especially the trainers in curriculum development so that they able to interpret curriculum concepts for ease of training delivery. The study findings on the research question on trainers related factors that affect automotive diploma trainees' preparation for job performance at the workplace is as follows:.

- I. That the students had high interest in automotive course and that their discipline was good.
- II. That the institutions did not have well balanced adequate training facilities to implement the curriculum effectively. Teaching aids such automotive training models are very critical in the provision of quality skills training of which were not available.
- III. That both the institutions and industries had kept and updated administration records which are guiding tools for quality service delivery
- IV. That there was need for stakeholders' involvement in curriculum development processes at all levels.

This agreed with Ornstein and Hunkin (2004) in his definition of curriculum development and implementation processes. Hunkin emphasized on the importance of the involvement of the relevant stakeholders especially the trainers in curriculum development so that they are able to interpret curriculum concepts for ease of teaching

Institution associated factors that attribute to preparing of trainees' for job performance at the workplace

The trainers were asked whether the institution had an academic policy and most of them (79%) said yes. The trainers further said that this academic policy affected their learning and assessment by setting high passing grades (19%) and by motivating students to work hard (44%). Asked to indicate the adequacy of the training facilities for automotive department, Fig. 16.was generated.

Fig. 16: Trainers' views on adequacy of training facilities in the institution

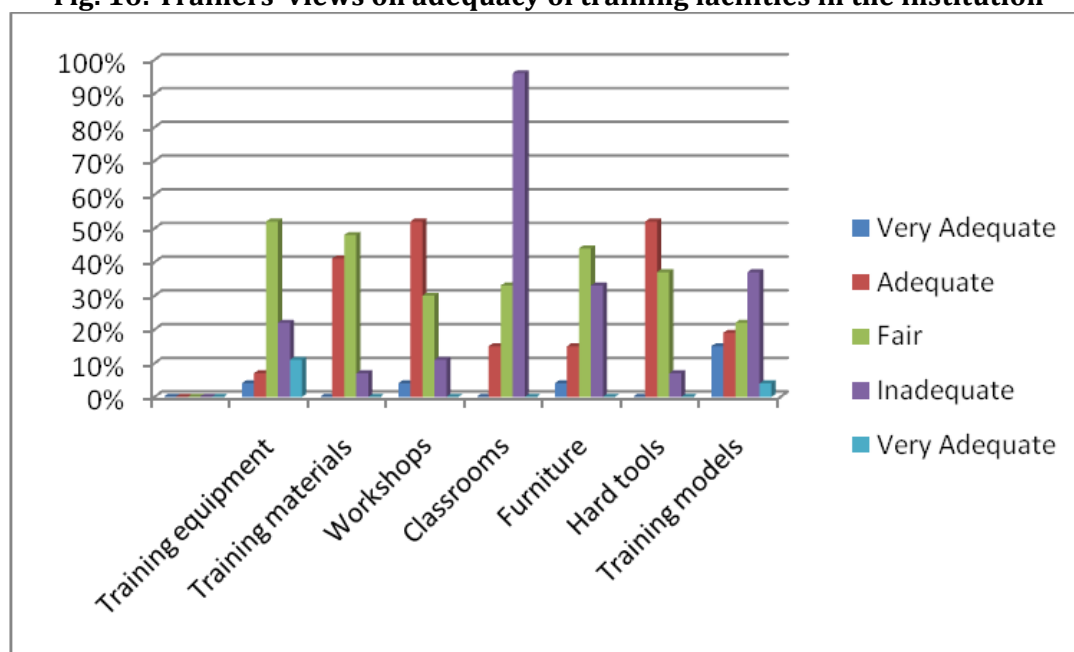


Fig.16 shows that according to about half of the trainers (52%) training equipment/machines were fairly adequate, training materials were also fairly adequate (48%). However, according to more than half of the students (56%) workshops were adequate. It was also unfortunate to note that almost all trainers (96%) indicated that classrooms were inadequate, furniture were fairly adequate (44%) and hand tools were adequate according to (52%). A good number of the trainers (41%) said that the training models were not adequate compared to (34%) who indicated that the training models were adequate. As indicated by the research data, it is clear that the institutions did not have balanced adequate training facilities to implement the curriculum effectively. Teaching aids such training models are very critical in the provision of quality skills training.

From the workplace document analysis it was established that the following working tools were available; job cards, student performance records during attachment, attachment guides, attachment logbooks, workshop manuals, assorted materials for use in the workshops, and vehicle's service parts and materials. Vehicle maintenance record books and diploma automotive syllabus were however not available. It was also observed that the available working tools and materials were generally of good quality. The research further revealed that both the institutions and industries had kept and updated administration records which are guiding tools for quality service delivery. From the workplace observation guide it was found

that the institutions had the following infrastructures which were ranked good; fences, landscaping, street lighting, clean compound, workshop layout, equipment and machinery, display of occupational safety and health standards. The same document, the researcher established that the following facilities were new; computers, workshop manuals, equipment and machinery, office furniture, power driven and hand operate tools, vehicle models available and vehicle faults diagnostic equipment. On accessibility of the workplace it was found that the road network, closeness to government administrative headquarters and availability of public transport were all very good.

Using the institutions' observation guide the researcher found that the physical appearance of the institution was good especially with reference to fencing, landscaping, institutions neighboring environment, street lighting, cleanliness of the compound and classrooms, library and washrooms. It was also established that the entrance/gate which reflected the public relations of the security officers, the general security of the institutions and its environments, public display of the vision, mission and core values of the institutions and the public display of information especially on drug free environment were all good. The same instrument gave the findings that training facilities such as equipment and machinery, classroom furniture and faults diagnostics equipment were new. However, training facilities such as equipment, workshop manuals, workshop benches and training vehicle models and were old. In fact textbooks/references materials were obsolete (most of them being too old for use in implementing the new curriculum in automotive. On other teaching and learning facilities, the same instrument found that drawing rooms and facilities were available but not adequate and usable.

The computer laboratories were available, adequate and fairly usable. The vehicle cutaway models were not available. Training vehicle models were available but not adequate. It was also observed here that students could not easily access the internet for help. The findings revealed that the institutions lack relevant and adequate facilities to offer quality training in automotive curriculum at diploma. The study findings on the research question on institution and curriculum assessment associated factors that attribute to preparing of trainees' for job performance at the workplace were as follows:

- I. That the institutions did not have well balanced adequate training facilities to implement the curriculum effectively. Teaching aids such automotive training models are very critical in the provision of quality skills training of which were not available.
- II. That both the institutions and industries had kept and updated administration records which are guiding tools for quality service delivery and that they lacked relevant and adequate facilities to offer quality training in automotive curriculum at diploma level

CONCLUSIONS

This study concluded that the entry Mean Grade of the students for this course was fair C-. However, the results of KCSE cluster subjects needed as a strong foundation for pursuing the engineering based courses were not considered as pre requisite for admission to the diploma course which could be a contributing factor of trainees' poor preparation for job performance at the work place. However, the study concluded that since the students were disciplined and self motivated and the trainers were well distributed, this could bring about good performance. It was concluded that most trainers had a good teaching experience and field experience and their views that TVET curriculum implementation did not allow serious and meaningful interaction with the job market could be relied on. Delivery of skills could be enhanced by allowing for adequate industrial attachment, the course syllabus to be more modular in nature and there was need to carry out constant evaluation. This study also concluded that although the effect of implementing the curriculum was low, there was to some extent a relationship

between the skills acquired during training and the skills needed in the industry. This was because the skills offered by the institutions provided related work practice and that students understand technical concepts easily when they attend industrial attachment. On challenges affecting the implementation of the curriculum it was concluded that there was need for provision of adequate skilled persons and up to date machinery and equipment. The study indicated that the alternative approaches could be; encouraging research, provide more exposure to actual vehicle systems, use of up to date technology and encourage student exchange programmes. On automotive diploma graduates, the study concluded that the curriculum content was far much below the demands of the industry, job performance and productivity was a function of many factors such as use of skilled and qualified personnel with adequate and modern machinery and equipment. This study also concluded that the industrial duration of 3-4 months was adequate and that the attachment contributes in preparation of trainees for the job market. However, it was concluded that the industrial attachment lacked adequate attention (supervision) and that industry skills demands were not consistent with content of automotive diploma curriculum. On trainers' related factors, it was concluded that delivery methods such as workshop practices, project work and demonstration were interchangeable. The level of students' interest was fairly low despite being disciplined.

RECOMMENDATIONS

The study was done with the aim of establishing the perceptions on implementation of automotive national diploma curriculum on its trainees' preparation for job performance in Nairobi region. The identification of the perceptions is not adequate without seeking solutions aimed at improving the implementation of TVET curricula that prepares student for job performance at the workplace after graduation. The ministry responsible for TVET sector in collaboration with all stakeholders in Education and training should come up the policy guidelines on the minimum entry grades to include cluster subjects. The Current position of entry requirement without cluster of the prerequisite subject may allow trainees cope up with the curriculum content. Thus, need to review the entry requirements for automotive diploma training programme

The ministry responsible for TVET sector should put in place a streamlined staff development policy meant to upgrading trainers competencies and professional development. Although trainers are allowed to go industrial attachment in industries and further their studies, principals sometimes fails to recommend them such for opportunities because of lack of clear policy. The ministry responsible for TVET sector and the management of TTIs should invest heavily in purchase of updated training facilities, materials and equipment. The ministry embark on serious resource mobilisation from development partners and donor agencies alongside increased budget allocation among others. TTIs through their production units should focus investing on purchase of modern and relevant training facilities, machinery and equipment

The ministry responsible for TVET sector and KIE should develop policy guidelines on curriculum development activities to streamline the frequency of curriculum review for all TVET programmes so as to cope up skills demand from industry and enhancing employability of TVET graduates alongside labour market demands; the percentage representation of curriculum development panels from stakeholder with emphasis on tapping more from relevant industries and ensure the future development of modular based training programmes to allow for flexibility in the implementation of curricula.

The strategic objectives any institution put in place to facilitate delivery of training curricula is vital in preparation of trainees' job performance at the workplace during their industrial

training period and after graduation. To facilitate this process, the methods the trainers use in delivering skills training and assessment of students competencies. Emphasis should be in the use of practical demonstration and field training; the preparation of quality teaching tools by trainers. Continuous supervising and encouraging of trainers to have updated and quality schemes of work, teaching notes, records of work and lesson plans among others by the TTIs management. Time tables which have a well balanced distribution of teaching hours in both theory and practices and conforms with the curriculum requirements.

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